Scottish Forestry
Coilltearachd na h-Alba

INFORMATION NOTE: ASSESSING MARGINAL SITES FOR NEW NATIVE WOODLANDS

Background

The following Guidance gives advice on assessing marginal sites for establishing new native woodlands.

The FGS Woodland Creation Options are aimed at creating woodlands that will establish successfully and have long term viability to provide multiple benefits.

Experience has shown that native species do not establish well on sites of relatively high exposure or soils with high moisture content, low nutrients and were peat depth exceeds 30cms.

It is therefore critical that site and climatic constraints of a site are carefully assessed for the potential for woodland growth and that the appropriate species and silviculture are chosen to ensure successful establishment.

The Forestry Grant Scheme is discretionary and competitive, and as such, for proposals on Marginal Sites (i.e. as assessed by Ecological Site Classification (ESC)- Forestry Information Bulletin 124), we will require robust demonstration of the sites capability to successfully establish and grow the proposed woodland type.

It will be the applicant's responsibility to provide such evidence and adequately demonstrate this capability before the proposal will be considered for support. SF expects this information to be used to develop a woodland design which identifies suitable parts of the site for planting to the requirements of FGS. These will be locally sheltered or of better soil moisture or nutrient regime and typically comprise of knolls, slopes and gullies.

Applicants should be aware that Scottish Forestry will not grant aid areas where it is considered that due to site and climatic factors trees will not establish successfully.

This note should be read in conjunction with Scottish Forestry's Guidance on 'developing native woodland habitat networks' which is available at;

https://forestry.gov.scot/publications/forests-and-the-environment/biodiversity/native-woodlands

Purpose

To demonstrate the capability of a marginal site to grow native woodland will require NVC survey, soils data (including a peat depth survey), on-site analysis of soil nutrient/moisture regime (as per ESC) and Climate information.

This survey information will be used in 4 main ways:

a) By the applicant, as a basis for silvicultural and ecologically sound design of the new native woodland.
b) Consultation with Scottish Forestry Conservancy staff to give advice and feedback to the applicant on likely eligibility for grant before plans are submitted.
c) To assist Scottish Forestry Conservancy staff and its consultees to appraise the proposal.
d) To help in monitoring the success of the Forestry grant scheme over the contract duration.

Principles behind creating New Native Woodlands

The principles behind the design of planted new native woodlands are described in Bulletin 112 Rodwell and Patterson (1994) Creating New Native Woodlands. These are:

- Match locally native tree and shrub species to site type.

- Take advantage of natural regeneration whenever acceptable results (stocking and species mix) are likely to be achieved in a reasonable timescale.

- Allow new native species plantations to become semi-natural in the long term by using minimal soil disturbance (usually mounding rather than shallow ploughing), little or no artificial drainage, and by trying to mimic natural patterns of plant spacing and distribution.

To achieve these aims requires careful site planning and layout to probably a greater degree than in conventional forestry. The essential pre-requisite is a good knowledge of local site factors, gained partly through published maps and data, but largely through field survey.

SF expects this information to be used to develop a woodland design which identifies suitable parts of the site for planting to the requirements of FGS. These will be locally sheltered or of better soil moisture or nutrient regime and typically comprise of knolls, slopes and gullies.

What Information is required?

The following information will normally be a requirement for larger scale and/or more marginal sites in support of FGS application. You are advised to discuss the survey requirements on a site by site basis with the relevant SF Woodland Officer.

Vegetation Survey

Vegetation surveyors should map main NVC communities (Grasslands, Heaths, Mires and Woodlands) on a 1:10000 OS base map. Minimum mapable area of a defined vegetation type should be 0.25 ha. Mosaics of more than one community with unit areas of less than 0.5 ha, should be mapped as the combined communities, but with each component described in the report, along with its recommended treatment (if there are different recommendations for each component). The use of aerial photography may assist with the process of identifying and delineating vegetation types.
Managers and surveyors should bear in mind that this type of survey is primarily a management tool to help plan planting or regeneration, rather than a record for posterity of the vegetation before woodland establishment, useful though the latter may be in a historical perspective. Therefore vegetation mapping at the NVC sub-community level is not usually necessary unless surveyors would advise distinct management for different sub-communities (e.g. tree species choice, ground prep technique, or unplanted area selection).

Thus, mapping of sub-communities in unflushed plant sites can indicate a site where planting is, either, inadvisable, or possible by shallow mounding. Peat depths (see below) may also be useful as an indicator of these subtle changes in site, especially when surveyed to complement a soil or vegetation survey, not just on their own.

Soil Survey

Soils should be mapped by a skilled soil surveyor to the defined types in FC soil classification which can be found in the FC publication "The identification of soils for forest management" - Fiona Kennedy:

https://www.forestresearch.gov.uk/publications/the-identification-of-soils-for-forest-management/.

Surveyors usually employ vegetation changes to help map soil distribution, together with pits to determine soil type. A detailed soil survey, giving accurate indicators of soil nutrient status and soil moisture regimes, can then be used with climate and topographic data in an ESC approach to planting design. ESC will not only allow the matching of species to site but also help predict the trees growth rate and final stature giving an indication of the suitability of marginal sites for grant aid.

The Ecological Site Classification Decision Support System (ESC-DSS) has been developed by Forest Research ESC is now freely available:

https://www.forestresearch.gov.uk/tools-and-resources/fthr/ecological-site-classification

Small scale existing soil maps are generally not of sufficient resolution to support a grant application.

Other Information

a) **Climate and exposure**

The site should be assigned to one of 8 climatic zones and if possible to climatic sub-zones for the region (zones defined in Pyatt, 1995a)

b) **Topography**

Topographic factors that will influence tree growth, viz: Elevation, Aspect, Slope, Terrain, Drainage/Hydrology, Windiness (DAMS Score).

c) **Geology**

An outline of solid and drift geology to give an indication of soil type and soil nutrient status.

Survey Report

The Survey Report should provide the following information in addition to the soil and vegetation maps:

a) **Trees and shrubs**

Species recommended for each suitable site type (with notes on preferred seed origin).

b) **Sites of high conservation value**

Plant communities which are of greater conservation value left unplanted should be mapped and described through 'target notes'. In some situations whole mapped soil or site types may be unsuitable for planting.

c) **Areas of deep peat**

SF currently operates a general presumption against new woodland creation on soils with peat exceeding 50cms in depth. A survey will be required to satisfy this requirement. Appendix 2 of Cultivation for Upland Productive Woodland Creation Sites - Applicant's Guidance provides more details regarding peat depth survey methodology. Areas of peat greater than 50cms in depth and 0.25ha in extent will need to be mapped as not grant aided "other land" (see below for more details).

d) **Other Land (OL)**

Areas unsuitable for planting by virtue of exposure or poor site quality may not be eligible for grant aid.

Areas not suitable for trees and not grant aided (i.e. unplantable due to peat depth, rock, water etc.) should be mapped as OL. See Designed open ground guidance for more details

e) **Natural regeneration (if applicable)**

Recommendations for a realistic regeneration zone extending existing woodland remnants or individual seed tree sources. This would take into account likely seed dispersal, wind direction, and suitability of site types for the species of seed available. Include recommendations for planting of missing species or those unlikely to regenerate in a reasonable timescale.

f) **Site preparation**

For each main site type, for both new planting and natural regeneration, along with other silvicultural recommendations e.g. deer control, fencing, fertilising.

References and further sources of information

Pyatt D.G. 1970. Soil Groups of Upland Forests. FC Record 71. HMSO.

Pyatt D.G., Ray D and Fletcher J 2001 An Ecological Site Classification for Forestry in Great Britain. FC Bulletin 124.

Rodwell J.S, and Patterson G.S. 1994. Creating New Native Woodlands. FC Bulletin 112. HMSO.

SF Guidance – Developing Native Woodland Habitat Networks