



Scottish
Forestry
Coilltearachd
na h-Alba

Supplementary guidance to support the FC Forests and Peatland Habitats Guideline Note (2000)

Scottish Forestry is the Scottish Government agency responsible for
forestry policy, support and regulation

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Reason for this guidance

Since the [FC Forests and Peatland Habitats Guideline Note](#) was published in 2000, the importance of trees in mitigating climate change has become more important. However, in some circumstances forestry operations on deep peats may result in an overall release of carbon due to changes in the soil. This is mostly due to cultivation, when disturbing peat (a carbon-rich soil formed by the slow decomposition of organic matter in a low oxygen environment) and exposing it to oxygen leads to a swift breakdown of the organic matter, and release of the stored carbon back to the atmosphere.

Therefore, on deep peats - defined here as soils with a peat layer exceeding 50cm in depth - forest managers should consider the implications of management options for carbon, alongside other priorities such as timber production, biodiversity, environmental protection of water and hydrological impacts, and landscape.

This guidance offers a decision-making framework based on the likely carbon storage or release from different management options on deep peats, to complement the advice on managing forestry on peatland for other objectives given in the original Guideline Note.

Note that this guidance does not supersede UK Forestry Standard requirements relevant to forestry operations on peat, for example the need to avoid harmful or polluting substances contaminating water supplies, and to manage forests in a way that conserves or enhances biodiversity.

Background

This guidance supplements the FC Forests and Peatland Habitats Guideline Note published in 2000, so that recent scientific research is better reflected. Some aspects of this research remain incomplete, however, so we will review this guidance periodically in light of improved knowledge.

Further advice on managing deep peat clearfell sites is given in the Scottish Forestry Practice Guide 'Deciding future management options for afforested deep peatland', available on our website.

Good forestry practice on peat soils

The UK Forestry Standard requires managers to minimise soil disturbance, particularly on organic (peaty) soils. There is also a general requirement to consider the potential impacts of soil disturbance when planning operations involving cultivation, harvesting, drainage, and road construction.

Avoiding net carbon losses on deep peat

A net carbon loss occurs when the carbon locked up in the peat, and trees growing on it, is less than the carbon released from the soil during establishment, or when a previously planted site is felled and not restored to functioning peat. The following guidance should be used to avoid a net carbon loss on deep peat during a second rotation:

Woodland creation

In accordance with the UK Forestry Standard, avoid establishing new forests on soils with peat exceeding 50 cm depth and on sites that would compromise the hydrology of adjacent bog habitats.

Restocking

The UK Forestry Standard and the Scottish Government's Policy on Control of Woodland Removal presume that sites will be restocked following clearfelling. However, on deep peats, the following guidance should be followed for the second rotation. These options are summarised in a flowchart in the accompanying Scottish Forestry Practice Guide.

1) Where the site is a priority for habitat restoration on ecological grounds, conventional restocking will not be required. In these circumstances restocking may not be allowed under felling licence condition. This applies to sites designated for their peatland interest, sites containing rare or high ecological quality peatland types, and sites that can be restored to improve the condition or functional connectivity of associated priority habitats (including bog woodlands and other forms of native woodland or scrub such as fen peats and bogs).

This can apply to adjacent sites if there is evidence that key biodiversity interests would otherwise be compromised. These site types are defined more fully in the accompanying Practice Guide, and this acceptability for a change in land use without compensatory planting applies to peat of all depths. Most priority habitat restoration will be to open habitat but there may be instances where it is ecologically appropriate and achievable to restore to native woodland or bog woodland / scrub.

Guidance providing advice on whether a site is restorable will be produced in due course, but in the meantime advice on whether a site is restorable should be sought from ecologists with specialist knowledge of restoring peatland from forestry. Local SNH and SF offices should be able to provide contacts for this.

2) Where the site is not a priority for restoration and is likely to support rapid enough tree growth to compensate for greenhouse gas losses from the soil – understood to be Yield Class 8 or above for Sitka spruce - then conventional restocking should be undertaken. The accompanying SF Practice Guide explains how this can be assessed.

3) Where the site is not a priority for restoration to open peatland or bog woodland (or other forms of native woodland) and is unlikely to support tree growth greater than Yield Class 8 (Sitka spruce), the appropriate option will usually be to create peatland edge woodland. This is intended to maintain woodland cover which supports a positive carbon balance and other environmental benefits. More information about peatland edge woodland and the circumstances in which it may be appropriate are set out at the Appendix, and illustrations of how it might look are in the accompanying Practice Guide.

What to do next

A proposal for a site that may have significant areas of peat will require a survey to demonstrate the distribution of shallow and deep peat, and an assessment of the level of hydrological connectivity with adjacent peatland. Reference can also be made to soils maps at 1:25,000 or 1:50,000 scale.

Felling proposals on sites that contain areas of deep peat will require evidence that restocking options have been considered in line with this supplementary guidance.

Appendix – Peatland edge woodland

What is peatland edge woodland?

Peatland edge woodland is designed for peatland after first rotation which is considered unsuitable for conventional restocking and yet not a priority for peatland restoration. The aim is to manage the land so that it continues to deliver positive biodiversity and landscape benefits alongside no net loss of carbon.

The objective is to achieve at least 20% canopy cover in order to maintain a range of benefits that would not be achieved from either conventional restocking or peatland restoration. This option can be secured through a conditional felling licence or management plan. The UKWAS adjacency rules would not apply to these woodlands.

Where is peatland edge woodland the appropriate option?

It is the appropriate option on sites where the recommended assessment method (detailed in the accompanying Scottish Forestry Practice Guide) indicates a potential yield class of below 8 (Sitka spruce), unless a case can be made for restoration to open ground peatland or native woodland habitat. However, care must be taken that it is not recommended for sites where it may cause direct and indirect biodiversity loss or damage to peatland habitats or species.

Creating and managing a peatland edge woodland

A typical specification for peatland edge woodland would be low density planting comprising 50% planted, 50% open ground. It would be restocked with native species within their natural range, in groups with spacing no greater than 1.5m between stems and no less than 500 stems per gross hectare. Creating a priority native woodland habitat is desirable.

This model of woodland might be achieved by, for example:

- Taking advantage of natural regeneration whenever acceptable results (stocking and species mix) are likely to be achieved within a reasonable timescale.
- Where planting is necessary, matching locally native tree and shrub species to site conditions. Mimicking natural patterns of plant spacing and distribution will encourage these native stands to become semi-natural in the long-term.
- Allowing an element of non-native natural regeneration on sites with an internal forest boundary to help secure a positive carbon balance, provided this regeneration does not compromise the growth of native planting on the site.
- Confining non-native regeneration to coupes within remaining forest areas will reduce the threat of invasive spread onto adjacent open peatland habitat or native woodland. External boundaries should have only native scrub/woodland and/or open peatland.
- Using minimum cultivation needed to ensure satisfactory establishment, and retaining little or no artificial drainage.
- Being located where it will provide a gradation from high forest to areas of existing or restored peatland, but without transgressing onto associated buffer zones (particularly for designated or high value peatland sites, e.g. those used for wading birds).
- Maintaining deer populations at less than 5 per square kilometre.
- Removing invasive or non-native shrub species e.g. *Rhododendron ponticum*.