

# Continuous Cover Forestry in Scotland

*If you want to maintain forest conditions and utilise natural regeneration, then use CCF as Charlie Taylor explains.*



**C**ontinuous Cover Forestry (CCF) has many alternative names such as close to nature forestry, alternatives to clearfell, low impact silvicultural systems and low impact management approach. It also has many definitions, but all are similar in sentiment, for example that of the Continuous Cover Forestry Group (CCFG):

*“CCF is an approach to forest management which aims to develop structurally, visually and biologically diverse forests, in which sustainable production of quality timber is achieved along with the provision of a wide range of ecosystem services.”*

Personally, I take a simpler approach when explaining CCF: maintaining forest conditions that enable natural regeneration. Within CCF, there is a spectrum of silvicultural options with complexity increasing from uniform/

Darnaway Estate near Forres.  
All photos: Charlie Taylor.

strip shelterwood, through group shelterwood to a selection system, as seen in the photos. The most suitable one to use will depend on the objective(s) of management, site type, current tree species and management options available—more on these later.

It is worth noting that managing by selection systems is not necessarily the ‘holy grail’. This is certainly not the case in Scotland where we have very few species (including introductions) that are true shade bearers and can cope with the limited availability of light associated with small interventions in the upper canopy. Even on continental Europe selection systems are applied to less than two per cent of forest area in Austria, Germany and France; four per cent in Slovenia and eight per cent in Switzerland. Simpler systems also tend to be more robust and able to survive periods of ‘neglect’, when there is a long period since the last thinning.

## Why CCF?

There is no certainty what the future holds (either climatically, or socially) but we can anticipate consequences of the growing threat from climate change (such as increased impacts from pests and diseases and more storms) and the biodiversity crisis. CCF has the potential to mitigate some of these concerns by providing continuity of values (such as habitat, visual amenity, timber), increased diversity (of species and forest structure) and protection of soils (and carbon). It also enables a range of options for consideration by future managers, which is key to truly sustainable forest management.

Practicing CCF is not a management objective in itself. Use CCF when it best delivers the objective(s) of management, and where there are favourable site conditions (such as soils with good rooting capacity and reasonably sheltered from the wind).



## RESILIENCE

It can be utilised on less suitable sites but would normally be restricted to uniform or strip shelterwood systems on relatively short rotations. Thinning is an essential part of CCF and early initiation is important to reduce risk of wind damage and to maintain crown depth for future seed production.

### Is it difficult?

Yes—it requires skills (both for managers and contractors) and time; a regeneration period can take up to 25 years. And no—start thinning early, keep thinning and initiate crown thinning as soon as possible, and manage browsing levels (try to avoid fencing, other than march fencing against high densities of deer or stock) and regeneration will happen.

It is important to include a simple prescription of the long-term vision and next management intervention that needs to be carried out. This will either act as a reminder for yourself in a few years' time or be handed on to (hopefully) an intelligent successor who can then adapt it as necessary.

It would be best (and, normally, cheapest) to use natural regeneration to produce the next generation of trees. However, natural regeneration can often suffer from “Goldi-stocking”: you either get too much or too little—or both in the same area. It is straightforward to deal with too much by re-spacing the



regeneration before it reaches two metres in height—unless it is Sitka spruce which acts like Velcro in high densities making access and felling very difficult. Too little either requires a bit more patience for the gaps to fill, or supplementary planting. Planting can also be used when you want to introduce other species to increase diversity or to meet a key objective.

### Why not in Scotland?

Firstly, we have many challenging sites. A significant proportion of existing woodlands and forests in Scotland are on soil types with restricted rooting and/or exposure to the wind. Some soils (such as gleys) are vulnerable to damage during

extraction, particularly when there is a lack of brash (branches) to maintain access tracks and protect roots of standing trees. Even freely draining soils are vulnerable to damage during wet weather. Many sites also lack good access for placement of equipment or removal of timber.

With some notable exceptions, we do not have much history of forest management to draw on in Scotland and even less so when it comes to CCF. The reforestation programmes of the 20th century focused on fast growth and, on many sites, a narrow palette of species. As a result, the norm has become clearfelling and replanting, with alternative approaches being met with considerable scepticism. Like many other sectors, forestry is resistant to change.

Another barrier is lack of skills, confidence and time. Most current practitioners (owners, managers and contractors) have limited or no experience of thinning. A number, including those new to forestry, aspire to utilise CCF but often lack confidence and have limited support. Approaches like CCF are more stimulating and challenging but they do require more input, and everyone is under time pressure. This lack of experience and knowledge also applies to the regulatory body (Scottish Forestry) where there needs



Top: Strip shelterwood on Cawdor Estate near Nairn.

Far left: Goldi-stocking - too little.

Left: Goldi-stocking - too much.



to be more accommodation of the longer time periods associated with natural regeneration. It can also be hard to access suitable equipment for thinning, particularly early thinning. There are some horse loggers and chainsaw operators in Scotland, but they have limited capacity; most contractors have scaled up machine size to deal with the main work available—harvesting clearfells.

And finally, economics. Rodney Helliwell, the CCFG's first chairperson, wrote an article for *Reforesting Scotland* back in autumn 2003 (issue 30, page 23) on the economics of CCF to encourage greater adoption of this approach. Has that happened in Scotland over the intervening period? Yes, some notable examples have developed since then on Cawdor Estate, Darnaway Estate and some of the

national forests such as Craigvinean. Impetus has been maintained in other locations, for example Buccleuch Estate, Faskally and Roseisle. But we could do more—much more. However, I sense a growing interest in utilising CCF which is encouraging but will require support. Training and mentoring will be key components and adjustments to grant aid to encourage wider use of CCF would undoubtedly be helpful.

### Finding support

Below is a list of the main sources of information I have used over the years (and that are still available). You can join the Continuous Cover Forestry Group, which produces a valuable newsletter, organises webinars and field trips—both in the UK and Europe. These are great opportunities to get on site, see things for yourself, learn something new and make some

valuable contacts. There is at least one of these events in Scotland each year, as well as a range of other training events. I am aware of opportunities in Scotland provided by TreeStory and Forest Research.

But at some point, you will have to be brave and make a start. However, it is not that complicated. Carry out regular thinning, manage browsing levels and natural regeneration will happen and you will find yourself practicing CCF!

### ccfg.org.uk

#### Suggested reading list:

- Hale, S. (2004). *Managing light to enable natural regeneration in British conifer forests*. FC Information Note 63. [tinyurl.com/Conifer-regen](http://tinyurl.com/Conifer-regen)
- Hart, C. (1995). *Alternative silvicultural systems to clearcutting in Britain: a review*. FC Bulletin 115. [tinyurl.com/Clearcut-alts](http://tinyurl.com/Clearcut-alts)
- Kerr, G. (2008). *Managing Continuous Cover Forests*. FC Operational Guidance Booklet 7. [tinyurl.com/Managing-CCF](http://tinyurl.com/Managing-CCF)
- Mason, B. & Kerr, G. (2004). *Transforming even-aged conifer stands to continuous cover management*. FC Information Note 40. [tinyurl.com/Conifer-CCF](http://tinyurl.com/Conifer-CCF)
- Matthews, J.D. (1992). *Silvicultural systems* 2nd edition. Oxford University Press.
- Wilson, S. McG. (2013). *Progress of adoption of alternative silvicultural systems in Britain: an independent review*. Technical Report, March 2013. [tinyurl.com/SMcGW-report](http://tinyurl.com/SMcGW-report)
- Stokes, V. & Kerr, G. (2009). *The evidence supporting the use of CCF in adapting Scotland's forests to the risks of climate change*. [tinyurl.com/CCF-climate](http://tinyurl.com/CCF-climate)

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Faskally near Pitlochry, one of the few examples of a selection forest in Scotland.