Editorial: Seasons of change

Winter is the season when our forest is in repose. Birds have flown south, and new shoots are snugly bundled in their buds waiting for warmer temperatures and the flush of spring. Even though our activities as a group appear quiet, there is a lot going on behind the scenes and across the forestry sector, making this a timely issue of our newsletter.

A good case in point is the December 2008 issue of *Forestry and Timber News (FTN)*. This included a “special feature” on CCF with three articles by members of our group: Gary Kerr outlined the key concepts of continuous cover silviculture; Robert Scott shared his experience of CCF at the well-known Baronscourt estate, in Ireland; Phil Morgan discussed a range of technical, management and policy considerations. Together, these articles projected a strong positive impression of CCF and its increasingly important role in British forestry. Our thanks to Jane Karthaus, of ConFor, for editing these articles and for encouraging what we hope will be some interesting discussion.

As we launch into 2009, the rush of new publications continues with papers in both *Quarterly Journal of Forestry* and *Scottish Forestry*. First, Andy Poore and Gary Kerr report on applied research at Stourhead (Western) Estate.

About CCFG …

The Continuous Cover Forestry Group was founded in 1991. Our primary objectives are to promote the transformation of even-aged plantations to structurally, visually and biologically diverse woodlands, and to promote the sustainable management of high quality timber. We provide a vibrant forum for continuing professional development and knowledge transfer. We are also influential in the formulation of new forest policies in England, Wales and Scotland.

We have over 200 individual and corporate members. Membership is open to all with an interest in forestry, forest conservation and woodland environments.

Online at www.ccfg.org.uk
This was the location for a CCFG meeting in spring 2008 (see Newsletter 28). Working closely with David Pengelly and the Hoare family, they present some impressive data on stand development and tree growth, along with useful comments on management. Second, Bruce Nicoll and colleagues report on spacing and stand stability in Scots pine plantations being considered for transformation to CCF. Together, these papers add to the body of scientific information that underpins the application of CCF principles to British forestry conditions.

In this issue of the CCFG Newsletter, we present five articles and reports. Gary Kerr has written a paper on silvicultural systems, based on his successful presentation at the CCFG Wales workshop in October 2008. Colin Edwards and Victoria Stokes report on recent CCFG field meetings at Drumlanrig Estate, Dumfries-shire and at the Duchy of Cornwall Estate, Hereford. Rik Pakenham reminds us that planting still has an important role in CCF. Finally, Esmond Harris contributes a personal view of continuous cover forestry.

As we go to press, not all the programme for the coming year is finalised. We will send reminders and updates via the email system. However, enough is in place to show that we have another exciting year ahead. There is a trip to Germany, organised by Arne Pomerening and supported by CCFG, which has attracted 40 participants. Rik Pakenham is organising a dedicated member-only trip to Romania in June. Then we have field meetings in Scotland, England and Wales. The highlight of our year will be a Scientific Conference, on 29 September, to be held at Westonbirt Arboretum. The chair of the organising committee is Rodney Helliwell and the theme focuses on science that appeared in CCFG Newsletter 28. With excellent speakers and a field demonstration this will doubtless attract a capacity audience. For programme information, see p. 29.

Sadly, this is my last newsletter. As many will know, I am studying medicine at the University of Sheffield and am finding it increasingly difficult to support the group in the way that you need and deserve. I have greatly appreciated all your encouragement and support over the past 2 years, and will miss my direct involvement in forestry. In particular, I want to extend my thanks to our chairman, Phil Morgan, for his support, advocacy and leadership during my time with the group. I would also like to acknowledge assistance from our national coordinators, Colin Edwards, Mike Seville and Rik Pakenham, and all the committee members for their work behind the scenes. I am confident that CCFG will continue forward with a strong leadership team and the commitment of so many active members.

As always, we hope you enjoy this issue of the newsletter. Thanks to all contributors and event organisers. Keep spreading the word of our activities and mission. Remember we are a growing organisation – fresh ideas, new perspectives and busy “goings on” continue to push CCF up the forestry agenda. All the best,

Edward Wilson
CCFG Administrator and Editor (2007-2009)

CCFG has had a good year. The three national CCFG groups, in England, Scotland and Wales, have organised an impressive range of activities addressing the national issues of each country and with their own identity reflecting the different needs of their membership. We have held field meetings in all countries, an indoor conference and discussion meeting and a foreign tour that neatly dovetailed with our international commitment to attend the ProSilva AGM in Freudenstadt in Germany. There is a report in this issue of the Newsletter showing how much was gained by those who attended a truly outstanding presentation of how CCF management of a community forest delivers real economic, social and environmental services in the Black Forest. In Wales the Group responded to the Wales Woodland Strategy consultation which is now featuring on the website. Members raised the profile of CCF by contributing articles and letters to a number of forestry publications, notably the December Issue FTN and the January issue of QJF, making a total of four articles on CCF. Scientific interest in CCF is growing as demonstrated by the Mini-Special Issue in Forestry and also in the increasing number of modelling studies from different countries which identify continuous cover management as the mechanism for response to species adaptation in the face of climate change. Carbon budgets and life cycle analysis are changing the way in which we value forests for their capacity to sequester and store carbon as well as for the environmental services they provide. Everyday management practices and awareness still need to adapt to the changing world, but as the new markets for woodland products and services emerge, a change will come about.

All these achievements would not have been possible without the enthusiastic support of our administrator, Ted Wilson, who has worked tirelessly at providing a professional service to the Group. His hard work has raised the profile of the Group with his uncanny knack for networking and spreading his enthusiasm to others. He has developed a first rate website which provides information and reciprocal links to partnering organisations, he has been a diligent editor of the Newsletter drawing in papers making the CCFG Newsletter an important source of learning and discussion, he has promoted all the activities of the group and recruited important new corporate members; most recently he has been the anchorman for the CCFG/ Bangor University study tour to Germany which will be held next year and that has already attracted a full capacity of 40 participants. However, Ted has his mind on other things and sadly is leaving us. He is making a mid career change after completing first year of medicine at Sheffield University. He has now decided to continue with this course; second year medicine is very demanding and cannot accommodate any distraction so CCF and forestry are to lose out. Ted has reluctantly handed in his resignation making this the last Newsletter that he will edit. CCFG will recruit a new administrator and editor to maintain the high standard the Group has reached under Ted’s administration. Next year we

Chairman’s Report
Phil Morgan FICFor ACF
CCFG Chairman
have field meetings in all three countries, a scientific conference, the CCFG/ Bangor University study tour, a foreign trip and the ProSilva 20th anniversary meeting in Slovenia all to organise; Ted's successor will be serving the Group at an exciting time!

There is now a growing body of evidence of the economic viability of CCF. The environmental services and the carbon management benefits CCF provides are new areas of expertise that still need to be better understood and quantified but it is clear that CCF will be providing the mechanisms for delivery. Because of the spectacularly turbulent times we are in people are more prepared to accept radical solutions and to question the validity of previously uncontested ideas. Governments now accept the human causality of climate change, and the unprecedented economic chaos allows us to challenge the accepted systems which operate within the global economic system; forest economics may well have a whole new outlook considering the rate of inflation. Although still not clearly articulated for fear of upsetting die hard forestry conventions, the Wales Woodland Strategy revision sees better management of existing woodlands and continuous cover as the drivers in the strategic response to climate change in Wales; this following lengthy consultation and some very well orchestrated discussion. There is still however strong reluctance on the part of many to accept the arguments for continuous cover. We have taken the brave step of publishing the views of a very respected forestry expert in this issue of the Newsletter clearly demonstrating the reluctance there is in some quarters to see forestry in a different light. Esmond Harris has very clearly set out his misgivings and we hope that this will provide the basis for argument and for discussion.

Within the debate there are also different approaches and strategies for managing the change from one system to another, as demonstrated in two important new publications. The Forestry Commission has published FC Operational Guidance Booklet 7: Managing continuous cover forests, normally an internal document but which has been made available to anyone wishing for a copy. Bangor University and the Forestry Commission in Wales have published a Guide to Best Practice for Silvicultural Principles of Continuous Cover Forestry. Both these documents show the strong interest there is in the subject and the need there is for clear guidance. While these publications are commendable for raising awareness of systems and methods for irregular management some have found exception with the approach being promoted. Rodney Helliwell has expressed his concerns and has written a short critique of the Guide to Best Practice which is published here; the publication was delayed to allow the main author Arne Pommerening the opportunity to reply in the same issue of the Newsletter. In the coming autumn the scientific conference will look at fundamental principles and at the relationship between factors to attempt to provide better answers as to how we need to adjust our continuous cover silviculture in Britain. We hope that by listening to doubters, by contrasting differing views and approaches, and by encouraging research, that we will develop new silviculture and management techniques for British forestry.

I hope that this issue of the Newsletter will provide plenty of useful information and opportunities for thought. I feel that continuous cover is at an important stage of its development in Britain and CCF is overcoming what were perceived as insurmountable obstacles in the past. Finally my thanks must go to Ted for having done such a fine job as the CCFG Administrator helping the Group at this important time.

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Silvicultural systems for tomorrow

by Gary Kerr

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Introduction

I was recently asked to give an introduction to the subject of silvicultural systems at a CCFG meeting ‘Silvicultural systems for tomorrow’ at Llandinabo Town Hall on 1 October 2008. This short article is a summary of the presentation.

Silvicultural systems – concepts and classification

A silvicultural system was defined by Troup (1928) as: ‘the process by which crops constituting a forest are tended, removed and replaced by new crops, resulting in the production of woods of a distinctive form.’

The key parts of this definition are underlined, the first three will be considered here and the last one is left until last; not that it is unimportant, actually the opposite is true – it is crucial. The first three terms form part of a cycle of regeneration-tending-felling (Figure 1) which will be well known to most foresters. In different silvicultural systems the cycle is practised at different scales. For example, if we consider a 5 ha forest stand and apply regeneration-tending-felling to a 5 ha unit, most people would agree that this is clear felling. Similarly, if the cycle of regeneration-tending-felling is applied to a 5 ha forest stand but each cycle is at the scale of 0.1ha, most people would agree that this is a selection system. Figure 2 illustrates this and makes the important point that any classification of silvicultural systems is a description of a continuum. At the stand level, it is quite possible, and maybe even desirable, to have elements of different systems in existence.

Figure 1. The silvicultural cycle of regeneration-tending-felling. Practiced at different scales depending on the silvicultural system being applied.

You may not need to read the next section if you are clear about the different silvicultural systems described by Troup (1928), Troup and Jones (1952), Pryor and Savill (1986) or Matthews (1991). A good test of this is whether you can answer the following question:

What is the main difference between a selection system and a uniform/group/irregular system?

If you are not clear about this, it is necessary to read this section! The classic diagrams from Troup and Jones (1952) of a uniform, group, irregular and selection system are shown in Figures 3-6 and are worth studying along with the following notes.

- The uniform system generally produces even-aged stands from a short (5-20 years) regeneration period (Figure 3). Any understorey or unwanted advance regeneration is cleared at the time of the seeding felling. Conditions for the germination and survival of seed and early growth of seedlings are improved and there is an expectation that regeneration will quickly form; the canopy is then removed uniformly as the regeneration develops. In its purest form the uniform system requires quite favourable conditions. A seed-tree system is a type of uniform system usually practised on nutrient poor sites, often with pine, where very few seed trees are left on the site through the short regeneration phase.

- The group system (Figure 4) is often more appropriate when regeneration conditions are less favourable (a characteristic of most British woodlands) and the intention is to work with advance regeneration that forms before any regeneration fellings. In this system these groups of regeneration are developed by uneven removal of the canopy. The group system generally produces even-aged stands using a short (5-20 years) regeneration period.

- The irregular system (Figure 5) differs from the group system mainly by the length of the regeneration period, which is much longer (20-50 years) and can produce uneven-aged stands. The main difference between an irregular system and a selection system (Figure 6) is described well by Troup and Jones (1952):

‘the essential difference from selection working lies in the fact that a time comes when all remaining old trees must be removed merely because they are old, whereas in selection working no such time ever arrives.’ (p. 74)

Figure 2. The silvicultural cycle (Regeneration-Tending-Felling) can operate on different scales along a continuum of variation in the size of felling unit.

5.0 ha

Continuum of variation in size of felling unit

0.1 ha
A diagram that will help determine the main differences between silvicultural systems is shown in Figure 7. From this, it is important to note that in a selection system, felling and regeneration are continuous over the whole area. If the management of any stand does not meet this criterion then it is not a selection system: it is that simple (this is the answer to the question at the start of this section).

**Terminology of CCF, Low Impact Silvicultural Systems (LISS) and Alternatives to Clearfelling (ATC)**

There is a lot of confusion about these terms in forestry in Britain. Hopefully what follows will help to clarify matters and add to previous discussion about this in the CCFG Newsletter (see pages 8-9 of Newsletter 26 (Mark Yorke) and pages 16-17 of Newsletter 27 (Jim Ralph)).
My view is that there is not an exact match between silvicultural systems and the approach to forest management that we refer to as continuous cover. It is better to evaluate management of a particular stand against the four principles of CCF described in Forestry Commission Information Note 29 (Mason et al. 1999). These are:

- managing the forest ecosystem rather than the trees;
- using natural processes as the basis of stand management;
- working within site limitations;
- creating a diverse stand structure with a range of species.

If all or most of these conditions apply in a given situation then it is highly likely that you are dealing with CCF, irrespective of the silvicultural system used. Note that the answer could vary between different forest types as illustrated in the following points:

- It is unlikely that a seed-tree system could be described as CCF, because the amount of tree removal at one time is extensive, cultivation will normally be required to establish regeneration, and the trees in the resulting stand will be of similar age and structure. This does not concur with the first, the third, and the fourth principles. However, if this was taking place in boreal Sweden where fire often creates large scale disturbances, then a seed tree system could be considered to be CCF, especially if combined with leaving some trees for biodiversity or aesthetic reasons (sometimes known as green tree retention).

- A uniform system could be described as CCF and the main factors that would make this more likely are (1) the canopy is retained for longer than required to achieve regeneration and hence there is lower intensity of tree removal and site disturbance; (2) the consequent production of a more varied stand in terms of structure and species composition; and (3) the reliance upon natural processes for regeneration.

- A stand managed using the irregular shelterwood system is also highly likely to produce CCF conditions because the less uniform (‘regular’) distribution of regeneration gaps and a generally longer regeneration cycle will produce a more varied and irregular structure than in either the uniform system or a seed tree system.

In conclusion, the likelihood of a forest stand managed by a particular silvicultural system matching the criteria for CCF, as illustrated in Figure 7, decreases as you move from right to left.

Lastly, Figure 8 illustrates the relationship between LISS, CCF and ATC:

- CCF and ATC are synonymous – using ATC is confusing and should be abandoned.
- LISS encompasses a broader range of silvicultural approaches and can include the use of small scale clearfelling.
Low impact silvicultural systems

Small coupe felling
Coppice +/- standards
Minimum intervention
Others

Figure 8. Diagram illustrating the relationship between LISS, CCF and ATC.

Relevance and application

We now return to the part of the definition of silvicultural systems that was ‘… production of woods of a distinctive form’. When Troup and others classified different silvicultural systems they were mainly based on examination of stands where different systems had been practised for at least 50 years. Consideration of transformation (from even-aged to CCF) is limited in Troup (1928), Troup and Jones (1952) and Matthews (1991). However, our main focus of interest in Britain is transformation and we misuse the nomenclature of different silvicultural systems when referring to woodlands that are being transformed. This can be illustrated by four examples in Figures 9-12.

Figure 9 shows a stand of Douglas fir at Longleat Estate. It is clearly a two-storied structure with a uniform overstorey and even regeneration distributed over the area. I am quite comfortable that this is a uniform system and it is clear from examination of the stand structure that this has been in progress for many years. It could even be a picture in Troup’s book!

Figure 10 shows a stand of Sitka spruce at Clocaenog in North Wales. The overstorey is uneven and groups have been opened up to develop the regeneration. The regeneration is variable and not evenly distributed. This could be a group system or, if the regeneration does not develop as expected, an irregular shelterwood.

Figure 11 shows a stand of oak that was described as being managed on a group selection system. However, felling and regeneration are not continuous throughout the whole stand and it is therefore questionable if this is really a selection system.

Figure 12 shows a stand of Sitka spruce that was described as being managed using a selection system. However, it is clearly an even-aged stand that may be about to be transformed.

The point I am making is that I am quite happy with the use of silvicultural systems nomenclature when applied to long established woodland, such as shown in Figure 9, in which transformation has been in progress for many years. However, when dealing with stands that are being transformed to continuous cover management I think we should consign the concept of silvicultural systems to the waste paper bin. Too many people are confused by the
different systems, and diffuse boundaries between them can lead to poor silvicultural decisions on the ground. The classic example of this is when a desire for ‘group selection’ leads to punching holes in the canopy of a woodland resulting in vigorous weed competition and an expensive struggle to regenerate seedlings (e.g., Figure 11). A much better approach is to be clear whether you are ultimately trying to develop:

- a simple structure (1 or 2 canopy layers), or
- a complex structure (3 or more canopy layers);

based on consideration of management objectives, the site, and species composition of the stand. The forest manager should then use the advice in Forestry Commission Information Note 40 (Mason and Kerr 2004) to produce conditions of continuous cover.

**Summary**

- All silvicultural decisions must be driven by management objectives.
- Silvicultural systems are a classification of different applications of the cycle of regeneration-tending-harvesting.
- Continuous cover is an approach to forest management. There is not an exact match with different silvicultural systems.
- Silvicultural systems are not helpful in describing treatments proposed for stands undergoing transformation from even-aged stands.
- For transformation to continuous cover, use forest stand dynamics to develop simple or complex structures.

**Literature Cited**

Kerr, G. 1999. The use of silvicultural systems to enhance the biological diversity of plantation forests in Britain. Forestry 72: 191-205


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Link:
Forest Research - [www.forestresearch.gov.uk/ccf](http://www.forestresearch.gov.uk/ccf)
The Continuous Cover Forestry Group Scotland Annual Event was held on Thursday, 4 September 2008 at Drumlanrig Estate, Dumfries-shire, one of the major landholdings of the Buccleuch Group in southern Scotland. Our hosts were Jim Colchester and Mike Caughlin (Buccleuch Woodlands Ltd), with support from Colin Edwards and colleagues at Forest Research. The visit had been arranged by kind permission of His Grace, The Duke of Buccleuch and Queensberry.

The Buccleuch family have been renowned for high standards of woodland management for centuries (Figure 1). This tradition has resulted in a total of over 10,000 ha of woodland located on several large estates in southern Scotland and Northamptonshire. The entire woodland resource is managed under Long Term Forest Plans and independently accredited to the UK Woodland Assurance Standard. Drumlanrig Estate is especially noted for mature stands of conifer and broadleaf species, many now in an appropriate condition for transformation to continuous cover forestry. A large number of woodland Sites of Special Scientific Interest (SSSI), a scheduled historic designed landscape and recreation facilities add to the variety and complexity of management issues.

Thirty six foresters took advantage of the CCFG Scotland free attendance ‘open to all’ policy to meet at Drumlanrig Castle, the starting point for the days’ visit (Figure 2). The castle lies at the heart of one of the largest scheduled designed landscapes in Scotland (1,981 ha). Woodland accounts for 902 ha of this area (45%). The layout and composition of the parkland and policy woodland were a key factor in the decision for designation. The diversity of both conifer and broadleaved tree species as well as the diversity in age structure has given rise to a wonderful backdrop to the castle gardens. These woodlands have had a varied management input over the last 40 years. Like many estates deer control has not always been as good as it might have been. This situation changed 10 years ago and has been extremely effective for the last 6 years. This has led to regeneration surviving past the seedling stage for the first time for at least 30 years. It is envisaged there will be a gradation from single tree selection systems at the castle edge through to larger group fellings (up to 0.25 ha) further from castle. Irregular shelterwood will be considered where possible. It is accepted that planting may be required to gain the desired species mix although good levels of natural regeneration have been secured in places. Good permanent track access exists throughout the woodland area allowing machine access to all areas without heavy extraction damage. The main constraint is the high fertility of soils in the area, most are upland brown earths on which extensive bramble colonisation occurs whenever site disturbance occurs and light levels are increased.
Optimum species composition would be 25% DF, 20% larch, 20% Norway Spruce, 5% other conifer, 10% Oak, 10% Beech, 10% Other broadleaf. There is a desire to move towards Douglas and Larch as the main crop trees due to their flexibility of felling age due to their ability to grow into larger tree sizes which can be sold at a premium. Spruce has limited large diameter markets in this area. Of the species reaching sapling stage in these woodlands most are shade tolerant broadleaves such as beech and sycamore. There are very few light demanding species present in either the seedling or sapling stage. Therefore, the Estate expects these light demanding species will require planting.

Four main stops were made to explore issues of crop silviculture and requirements for regeneration recruitment on the soil types encountered. Jim Colchester explained that the current management plan was in the early stages of development and flexible. Ideas were welcomed from the group on how best to meet the varied objectives required for the area using a CCF approach. Brief notes on each stop follow.

**Stop 1:** (comp 3231). **Predominant Soils:** Iu(x) upland brown earth – indurated. **Average Basal Area:** 40.8 m² ha⁻¹. **DAMS score:** 12, **Moisture Deficit (MD):** 119. Canopy species DF (43%), JL (32%), beech (14%), Oak (9%), GF and Sycamore (1% each).

Gaps in the canopy occurred following the Boxing Day 1998 storms, which lead to problems with heavy bramble and red elder (*Sambucus racemosa*) infestation. Some larger windblown holes were scarified and planted with Douglas fir spring 2008 in an attempt to ensure DF was maintained in the species mix. The Estate will accept other species as they occur and aim to respace at approximately 6 metres height, aiming for very mixed woodland.

**Stop 2:** (comp 3230). **Predominant Soils:** Iu(x) upland brown earth – indurated. **Average Basal Area:** 58.7 m² ha⁻¹. **DAMS score:** 12, **Moisture Deficit (MD):** 119. Canopy species NS (95%), and mixed broadleaves (5%).

Another site where gaps in the canopy occurred after the Boxing Day 1998 storms, which lead to problems with heavy bramble infestation and red elder (*Sambucus racemosa*). Some larger windblown holes were scarified and planted with Douglas fir this spring. The Estate will accept other species as they occur and aim to respace at approximately 6 metres height, aiming for very mixed woodland. Although some natural regeneration of NS is evident these are small seedlings that are struggling with the vegetation competition and the low light levels under this dense stand. An intervention is required here soon, but the Estate is unsure of the type of thinning approach to be adopted. The creation of more gaps and widening of current ones was considered possible if advanced regeneration was to be encouraged in a group shelterwood type system.

**Stop 3:** (comp 3230). **Predominant Soils:** Iu upland brown earth. **Average Basal Area:** 58.7 m² ha⁻¹. **DAMS score:** 12. **Moisture Deficit (MD):** 119. Canopy species JL (72%), DF (23%) and mixed broadleaves (5%).

Another site where there have been problems of regenerating light demanding species due to moist fertile site (Figure 3). Larch regeneration would be accepted here but little seedling recruitment is possible into the heavy bramble infestations which occur where light levels are increased. The current Duke enjoys the colour created in the stand by mature beech trees in the canopy and the small quantity of beech regeneration, and so its removal from the crop is unlikely. There is also an important footpath at the base of the bank which is regularly used by visitors; leading to a requirement to retain lighter more open species on this bank. One suggestion from the group was to encourage more regeneration of beech to help suppress the competitive vegetation, and add more colour to the stand. All the regenerated beech could then be felled in advance of encouraging regeneration recruitment from the conifers.

**Stop 4:** (comp 5447). **Predominant Soils:** 7bx – Brown surface-water gley, indurated. **Average Basal Area:** 38.8 m² ha⁻¹. **DAMS score:** 10. **Moisture Deficit (MD):** 120. Canopy species Oak (49%), NS (41%) and mixed broadleaves (10%).

An old oak woodland replanted with oak with Norway spruce as a nurse in 1964. This is a very awkward site to work due to the wet and slippy nature of the soil. Here the Estate is aiming for a conversion to oak and other broadleaves, although the level of natural regeneration recruitment is currently inadequate. A mixture of conifer and broadleaved species in the landscape was thought to be less important here due to being out of immediate site of the castle. These traditional lowland conifer-broadleaved mixtures require progressive thinning to develop a pure broadleaved stand, by removal of the conifer before it suppresses the broadleaved species. It was clear that the oak had suffered on this site from the more competitive Norway spruce, and recovery of the situation was going to be difficult without frequent interventions to remove the Norway spruce.

**Figure 3. Discussion of stand dynamics at Stop 3. (Photo: Scott McG Wilson 2008)**

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Link: Forest Research - [www.forestresearch.gov.uk/ccf](http://www.forestresearch.gov.uk/ccf)
Continuous cover forestry at the Duchy of Cornwall’s Hereford Estate


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On the first dry day in September the CCFG organised a visit to The Duchy of Cornwall’s woodlands in Hereford, focussing on the silviculture of broadleaved woodlands. The meeting was hosted by Geraint Richards, Forester for the Duchy of Cornwall, and Graham Taylor of Pryor and Rickett Silviculture, who have managed the woodlands for the Duchy since the Hereford Estate was purchased in 2000.

In contrast to the Duchy’s woodlands in Cornwall, the Hereford Estate consists of predominantly native broadleaved species, in particular oak, ash, chestnut, hazel and cherry. The Estate comprises a total of 597 ha in 48 discrete woodland blocks to the East, South and West of Hereford, largely on hilltops or slopes overlooking the Wye valley. The Duchy advocates a “close to nature” approach to management, using continuous cover principles wherever possible to achieve sustainable and diverse woodlands; a clear management objective is to grow quality hardwood timber and maximise financial returns.

The great challenge facing managers here is the conversion to continuous cover of large areas of ancient semi-natural woodlands, which are dominated by oak, due to centuries of selection by man, rather than the oak/ash/lime/maple mixtures of the natural local flora. Initial silvicultural interventions since 2000 have been graduated density thinnings, focussing on retention of the highest genetic quality stock (regardless of spacing) and removal of wolf trees, while ensuring that biodiversity remains high by retaining standing deadwood, rare species and under-represented size classes. More recently interventions have aimed to stimulate heavy seeding of high quality oak trees while creating suitable seed-bed conditions for germination and rapid establishment of seedlings.

The morning field visits were to Aconbury Hill wood, which amazingly has had only three owners in the last 900 years. The wood is capped by an ancient hill fort and rises to 276 m, making it relatively exposed in the surrounding low-lying landscape. The soil is a well-drained, reddish, coarse loam over sandstone, which combined with the annual rainfall of 800 mm results in a very rich site, ideal for tree growth. Our first stop was in a stand of P1870, YC6 oak in which a coupe felling had been carried out two years previously. The basal area of the stand as a whole was 16.5 m² ha⁻¹, although due to the nature of coupe felling this resulted in local variation throughout the stand, providing a range of light environments. A heavy mast year coinciding with the coupe felling had resulted in high oak seedling densities but the high light levels and rich soils meant that bramble was invading rapidly and would soon overtop and probably outcompete the young seedlings. Regrowth of hazel coppice stools was being encouraged to help control the bramble but it seemed unlikely that this understorey would be established before the current seedlings had developed into saplings.

Bramble aside, Geraint and Graham are also doing fierce battle with grey squirrels and deer, both of which are present at Aconbury. Despite high levels of public access and a warm, wet summer with plenty of available browse material, deer damage was evident on the young bramble shoots and oak seedlings, few of which had the long leaders which would be expected at the end of summer. A sustained deer control campaign has brought numbers down from a high in the mid 1990s but public access and cost effectiveness make further reduction of numbers difficult. Existing seedlings in the coupe will be protected with tall shelters within the next 4-6 weeks to prevent further damage; members of the group shared their experiences of using mesh shelters with oak, which have been found to improve stability of young trees while still providing adequate protection from deer. Some lively discussion was had on the devastation which may be caused by grey squirrels, should the seedlings reach pole stage. A zero tolerance squirrel regime has been operating at Aconbury for the past 18-24 months involving trapping, shooting and hoppering, and Geraint and Graham are now hopeful that any further damage will be minimal.

A walk past the iron-age hill fort and the charcoal mounds, willow bender and busy coppice workshop of a thriving social project gave the impression that Aconbury had slipped back to a time when woodlands were a vibrant, central part of local communities. As well as supporting this social project, the Duchy is also a keen advocate of horse logging, which was used to clear another small coupe near the hill fort. This has had the added advantage of scarifying the ground, and may be one of the reasons for the lower bramble invasion of this coupe. However, despite this, the natural regeneration had not been successful and the benefits of supplementary planting in the centre of the coupe were discussed.

After lunch we moved on to Timberline Wood, to the West of Hereford. Again, the wood is in a hilltop position, with a well-drained, reddish, fine, silty soil over shale and siltstone. As an important shooting venue the first area we visited had been neglected for some years by the previous owner. The mature oak/mixed broadleaved overstorey was heavily thinned in the mid 1990s to improve visibility for shooting, while some large trees were retained to encourage the birds to fly high. The Duchy acquired the woodland in 2000, and four years ago a group selection thinning was carried out to extend the existing canopy gaps and provide sites for natural regeneration and supplementary planting of oak. Tamworth pigs were introduced to clear the ground with mixed success; although there was little bramble present on the site other weeds such as willowherb, nettle and bracken soon invaded. The current regeneration of oak and ash appears to be surviving in this less-competitive weed environment although seedling growth rates were not high. The group discussed whether an alternative approach on such rich soil types might be to lightly thin the canopy and allow seedlings to establish in a less weedy environment before thinning the...
overstorey more heavily. Highly intensive close-spaced planting of broadleaves in shelters had also been carried out in this area (Figures 1 and 2).

The next stop at Mary Glover wood demonstrated that successful continuous cover of broadleaves can be achieved on this type of site, despite the rich soils and heavy damage by deer and squirrels. Pockets of under-thinned European larch, windblown in 1990 were cleared and ash was planted at 2 x 2 m spacing. The remaining oak and ash mature overstorey had been damaged by wind, and the clear-up thinning focussed on retaining good quality trees and recutting or singling chestnut coppice. In 5-10 years a similar intervention will be carried out, favouring oak slightly, as the proportion of ash in the stand is increasing. The attractive resulting stand has plenty of high quality oak with an abundance of mixed broadleaved seedlings and saplings developing in a low weed environment, due to the shading effect of the hazel and chestnut coppice (Figure 3).

The final site demonstrated another method of reducing the impact of bramble. In a small coupe, felled two winters ago, Geraint and Graham trialled “tushing” or dragging the top off the site in an attempt to rip out developing bramble. Rather than driving over the developing regeneration in a tractor, the timber and tops were winched out of the coupe, and while bramble has been severely knocked back, the seedlings appear to be undamaged by the process (Figure 4).

Despite the challenges presented by past management, intense bramble competition and high numbers of deer and grey squirrel, the developing stand at Mary Glover demonstrates that continuous cover in rich, lowland, broadleaved woods is possible with careful management of the overstorey, understorey and ground vegetation.

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Link: Forest Research - www.forestresearch.gov.uk/ccf
Summary
This article highlights the potential value of planting in gaps or in the understorey of continuous cover woodlands. Planting allows for the introduction of improved genotypes and a more diverse range of species. In monoculture beechwoods, advantages of planting include greater flexibility in stand management, diversification for future timber markets and adaptation to climate change.

Introduction
Over many years the Continuous Cover Forestry Group (CCFG) has promoted its objectives with great success and has pushed the cause way up the political ladder. However, at the grass roots level, there still seems to be a perception that natural regeneration is continuous cover forestry (CCF), planting is plantation forestry, and ‘never the twain shall meet’. The reality in many cases is that natural regeneration and planting have their place across the broad spectrum of silvicultural systems that constitute continuous cover forestry management.

Where large areas of mature even aged stands of one species exist, such as beech (Fagus sylvatica) in the Chilterns, and the management prescription is to transform them to multi-species uneven-aged structures, or to improve timber quality, there is often little choice but to adopt artificial regeneration techniques. This article reviews some of the factors to be taken into account when considering planting in CCF stands.

History
The Chilterns are well known for their beech woodlands. These have evolved since the late 19th century when the furniture industry began to develop in High Wycombe. Beech was favoured and/or planted to supply this industry. Prior to this many of the woodlands had a wider mix of broadleaved species.

Over the last 50 years the proportion of beech has reduced due to coniferisation, and more recently mixed broadleaved planting. However, beechwoods still account for about 35% of the woodland area, much of which is in the older age class categories, and on scheduled sites.

Although beech is native to this part of England, pure beech stands are still regarded as a plantation on an ancient woodland site (PAWS). The result of this is that there are large areas of even-aged monocultures, with generally only beech as the seed source, limited biodiversity due to dense shading and no diversity in stand structure (Figure 1). Where interventions have taken place there is usually dense bramble colonization that restricts any other regeneration (Figure 2).

Many of these beech stands, on the shallower soils (usually rendzinas) are dying back and collapsing, so to some extent natural processes are happening. However, the beech is generally being replaced by ash, with the result that one even-aged monoculture is being replaced by another.

Rationale
Different criteria now drive modern forest management, and some of these are considered below. In each case there are strong arguments for a greater diversity of species and transformation to irregular or uneven-aged stand structures:

Figure 1. A beechwood in the Chilterns with no recent intervention. Note the uniform structure and lack of understorey vegetation. (Photo: R. Pakenham 2008)

Figure 2. A beechwood following stand intervention. Note the uniform structure of the overstorey and mass of bramble dominating the understorey. Such “flooding” of the canopy gap represents a barrier to natural regeneration of tree seedlings. (Photo: R. Pakenham 2008)
Markets

Currently there is no market for quality beech timber. In the 1990’s first quality could fetch up to £130 per m$^3$, but today the market is very limited and you may achieve £22 m$^3$, with the second quality going for firewood.

The average age of much of the beech is over 130 years old. Even at the lowest yield class of 4 this is 20 years over the age of maximum mean annual increment (mmai). With an average yield class of 6 it is 30 – 40 years over. Although mmai and rotation times are not necessarily such a major consideration under selection systems, the management tables list the rotation length to 150 years. Observations show that except on the very best soils most beech timber becomes stained between 140 - 180 years. This implies that, if markets were to re-emerge in the future, it is unlikely that a resource of high quality timber will be available to meet the exacting standards of the furniture industry.

A mix of timber-producing species able to respond to the fickle markets is a prudent and desirable way forward.

Climate change

Climate change predictions identify beech as one of the main species to regress in response to increasing temperature and changing rainfall patterns, especially the increased risk of drought in summer months across southern Britain. This suggests that to persevere with beech monocultures would seem unwise, both from a silvicultural and ecological perspective.

Silviculture

There is a desire to create more robust and stable stand structures utilizing a mix of species and age classes. The gales of 1987 and 1990 showed even-aged stands to be much more vulnerable to windthrow than uneven-aged stands.

Severe damage by the American grey squirrel (Sciurus carolinensis) is seriously compromising any future quality beech production.

Management prescriptions

Selection systems under CCF principles are an ideal way to convert these Beech stands to visually and biologically diverse structures with sustainable timber production underwriting the long term management. However where the only seed source is Beech, artificial planting of other species has to be considered.

Large clear cuts and replant are now no longer acceptable, except in extreme cases such as catastrophe, disease or possibly a return to native site type; many managers now recognize this. The total desecration of the forest environment, reducing a forest structure to a savannah is no longer justifiable in landscape, environmental, ecological, social or timber production terms.

History tells us that the removal of a forest environment produces major problems for future generations.

The introduction of other species through planting, as opposed to seeding, is best achieved by adopting a group shelterwood system. The main reason for this is that Beech is the only ‘native’ shade tolerant timber producing species that could survive for any length of time in a uniform shelterwood system. Unless stands are regularly thinned (unlikely in the current market conditions), to release more light demanding species, they will not survive.

The major timber producing species, apart from beech, suited to these site types and National Vegetation Classification (NVC) are oak (Quercus robur), ash (Fraxinus excelsior), cherry (Prunus avium). Sweet chestnut (Castanea sativa) and sycamore (Acer pseudoplatanus) are not regarded as ‘native’ but could also be considered where this is not seen as a negative factor. Sycamore’s prolific seed production and colonization, sometimes to the exclusion of other species, plus its palatability to the American grey squirrel would need to be seriously considered.

Establishment from seedling, to sapling, to young tree is attainable so long as suitable protection and or pest control procedures are adopted.

Prior to planting the stand needs to be thinned and the replanting coupes felled. Under CCF guidelines no coup would exceed 0.25 hectares. The thinning is aimed at increasing the amount of lateral light to the planting areas, which is as equally important as overhead light, especially in these small coup sizes. Plus the removal of any tree that is likely to have to be felled into the coup at the next intervention, this negates the need to have to winch trees away from the young plantings (Figure 3).

Planting a minimum of 2,500 trees per ha should be considered. In reality, the density is generally 1100 per ha to maximize the planting grant, with the acceptance that pruning will be required to grow quality timber. Often these plantings are supplemented by natural regeneration of tree and shrub species.

![Figure 3. Planting in a small coup. Some thoughts should be given to future thinning and harvesting operations to minimize potential damage to planted seedlings. (Photo: R. Pakenham 2008)](image-url)
Conclusion

It is accepted that starting transformation in beech monocultures at 130 years is far too late, and felling quality timber for firewood may well make an owner question the financial viability of this decision. However, something has to be done, and soon, before these stands regress more rapidly with advancing years, with climate changes and in the face of diminishing markets for quality timber.

Literature Cited


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Continuous cover forestry: a personal view

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Summary

This paper presents a critique of continuous cover forestry, based on experience of managing woodlands in several regions of the UK. The challenge of achieving adequate growing stock in target size classes is emphasised. Wildlife and other woodland values are considered with respect to conventional even-aged silvicultural systems. The paper aims to stimulate discussion.

Introduction

Over the last twenty years Continuous Cover Forestry (CCF) has taken British forestry by storm and is now widely accepted as a means of management albeit in its various forms. Have we accepted this uncritically and perhaps been over influenced by the attractive appearance of mixed-age, mixed-species woodland? How suitable is CCF for British conditions? I find myself considering these questions against a long experience now of forestry in all parts of Britain and some visits abroad.

Background

At university shortly after the Second World War, when largely taught by ex-colonial foresters who had managed large forests under long term working plans but with only continental texts books available to us (mainly German but also French and Swiss), I was much influenced by both the scenic appeal and the professional challenge of selection forest management. "A selection forest is one in which all ages and sizes of trees are intimately mixed together; the smaller trees are growing under and in between, the larger trees and, as they may at first grow very slowly owing to partial suppression while they are young, the ages of the mature trees will vary within wide limits." (Hiley, 1954, pp. 296) This is not very different to 'continuous cover forestry'. I believe the term CCC was first used in this country by the 6th Earl of Bradford who established and managed large areas of forest in Shropshire, Scotland and Devon, in the post war period.

Gerald Bradford was much influenced by selection forestry as practised on the continent but in using the words 'continuous cover' for the method he developed together with his Head Forester, Phil Hutt, he was expressing his conviction that the soil should not be laid bare in order to retain and build up its fertility. We now tend to think in terms of maintaining a more or less continuous (unbroken) canopy (the term correctly applied to adjacent and intermingling tree crowns but not to individual tree crowns).

Selection forestry implies then an unbroken canopy under which regeneration can be established but in temperate climates there is seldom sufficient light penetrating through such a canopy to maintain regeneration, either planted or from natural seeding. Thus some degree of openness via groups or small regeneration clearings feature in CCF systems. I think it was at the second meeting of the CCF group held in the late John Workman's magnificent beech woods in Gloucestershire that this was discussed at some length i.e. just how much open space still qualified as CCF? At that meeting John Workman used words something like: "I do what I know from experience works and am not too much concerned about the size of openings in the canopy." The Forestry Standard defines clear felling as in excess of 0.25 hectares so CCF is less than this.

Working first in Scotland, then in Wales and later in England, I have found myself reluctantly moving away from my early view that selection forestry (which I still like to call it) is the pinnacle of forest management to which to aspire, to the point where I now feel very uneasy with CCF. It was because I expressed this view to the Editor in an informal conversation that he requested me to write this 'personal view'. I hope this change in my attitude to CCF is based on genuine field observations and perhaps originates from three teaching appointments in forestry training establishments where I encouraged the students to observe and think for themselves. At the end of the two year course I used to tell them that what we had taught them was merely a basis but if they were going to become good foresters they must observe what each individual woodland was showing them as that is the only route to successful forest management. In adopting this principle myself I have been increasingly impressed by the overriding importance of the amount of light reaching the foliage of the trees in woodlands. This was first brought home to me when we still used light meters separately from cameras and then set the camera accordingly. This made one aware more so than today of the light intensity and how it varies considerably within a woodland, although ones eyes adjust without noting this. It became clear that where I saw poor growth the light intensity was low and when the growth was better so was the light. Hart (1991, p.254) points out that "... the lower summer light intensities (compared with continental Europe) tend to reduce the number of photosynthetically active canopy layers."

Skilful control of light intensity, particularly at the time of regeneration, was the basis of 19th Century continental forestry but such systems employed very long rotations and were particularly suitable for shade bearing species, thus European silver fir featured strongly in them but to extend this to British conditions where we have lower light intensities and a shorter growing season, no shade bearing native timber species and a need today for shorter rotations, in my view, does not produce satisfactory results. Almost all our native species are deciduous light demanders. I have not even succeeded with yew in small clearings in deciduous woodland but have had some success with small leaved lime, a strong shade bearer although hardly a valuable timber. Beech I think is the only deciduous broadleaf for which CCF is suitable but even then, in small groups rather than a totally intimate mixture of all age classes and tree sizes.
CCF is surely only suitable for strong shade bearing evergreen exotics, particularly western red cedar (Thuja plicata) which will stand more shade than any other timber species in Britain. There are some fine looking stands of Douglas fir (Pseudotsuga menziesii) being managed under CCF systems (Figure 1). This is particularly true at Stourhead in Wiltshire but I have yet to see convincing figures demonstrating that the total production (not standing volume) compares equally with uniform stands of this semi-light demanding species. What worries me in such stands, fine looking though they are, is the middle age/size classes. It is from them that the future harvest is to come but how vigorously are they growing? Are they perhaps being suppressed to some extent and how well will they respond when the larger trees over them are harvested? Basic stand measurements do not reveal the all important size class distribution and say nothing about the vigour of the middle sized (not necessarily also the middle aged) trees. At Glentress for instance 47 years from commencement of the trial it was reported that: "As a result of variable site conditions and the growth rate response of individual species, trees of very different ages may occur in each size class. Also that “there appears to be an over-abundance of stems in the middle size classes…" (Wilson et al. 1999, p. 408).

One of my earlier posts in the Forestry Commission was at Faskally in Perthshire where the 'policy' woodlands (those planted around a mansion house) were under a working plan devised by Professor Mark Anderson as an extension of the larger Glentress experiment. Groups of varying sizes but down to 1/40th acre(!) were opened in the existing mixed age/mixed species woodland and planted with a wide variety of species. On a six year cycle every tree was measured with callipers and the position on the tree that the callipers were placed was scribbed so that it would be measured in exactly the same place in the next cycle. In theory this should have produced some interesting results and I believe the work has been taken up again recently (Cameron 2007) but the management problems were immense. Damage to the young plants by capercaillie and deer was devastating and six foot fencing around numerous small groups was both high and costly to maintain. Though a wide variety of tree species were planted, even the shade bearers did not do well even in the largest groups which I think were a quarter of an acre and a lot of beating up was required. I only experienced the scheme into its second cycle but by then it was already getting difficult to find places for the new groups because the first groups had grown so slowly that the even distribution of age classes intended was not developing. Doubt began to occur in my mind and I looked more critically at other examples of selection forest which appeared so attractive but what was actually happening to the tree growth in these wonderful looking stands?

Another very different woodland, this time in East Anglia, influenced my thinking too. Much visited as an example of selection forestry and where the owners were convinced they were building up the growing stock and it certainly looked fully stocked, it was salutary to learn that two total enumerations twenty years apart showed exactly the opposite; in the twenty year interval the standing volume had fallen despite the appearance of a fully stocked woodland, illustrating the complexity of management by volume rather than area and the danger of over exploitation.

I also took considerable interest in Michael Reade's long term experiment started in 1954 to convert his Chiltern woods to management by the Swiss 'Methode du Controle' with the primary aim of achieving sustained yield with a variety of hardwoods, larch, European silver fir and 'promiscuous modern conifers' (which included western red cedar). He recorded number of trees of all species and DBH measurements of all tree classes but this is time consuming and expensive. A cherished memory of students days is of spending a day observing French foresters in a silver fir/Norway spruce/Scots pine marking and measuring for a thin/fell operation. Diameter measurements were taken with callipers and trees selected by size classes (not age) against a pre-determined schedule designed to maintain an ideal (theoretical) distribution through all classes. At the time I saw this as the ultimate in professional forest management but have come to realise since that nothing was known about the age class distribution and the cost of this operation was apparently unimportant. However, costs are inevitably higher in CCF both of establishment and harvesting. Shrimpton (1990) estimated these at Glentress to be 50% higher for establishment and 10-20% for harvesting, above standard rates (Wilson et al. 1999, p. 409).

Figure 1. Uneven-aged mixed conifer stand in west Devon, dating from 1911 onwards. Individual trees have been removed as required. The stand composition has gradually become dominated by Douglas fir for which the regeneration conditions are ideal. (Photo: E. Harris)
quarter girth over 5 inches at 6-10 year intervals. In 1957 the first enumeration suggested that a sustained yield of 83 cu. ft./ac/yr (7.4 m³/ha/yr) could be expected but by 1990 (36 years from the start) this was far from being achieved with only the best compartments providing 55 cu. ft/yr, including a lot of small unusable material and only 25 cu. ft/ac. (2.2 m³/ha) of saleable timber. It took 30 years to bring all the compartments into uneven aged condition. The intended 83 cu.ft/ac would have required a growing stock of 220 m³/ha but after 36 years only 135 m³/ha was achieved. "I also find myself in entire agreement with the Swiss thesis that maintenance of an adequate overall growing stock must be given the highest single priority in any scheme of woodland management, even though it implies temporary retention of trees of sub-standard quality …” (Reade 1990). By 1957 he was writing: "It seems very likely that the suppressive effects can easily become the dominant one in selection woods which are less well managed than the Swiss" (Reade 1957).

Silviculture considered

Where do these examples take us, or should I say, where did this take me in my increasing disillusionment with uneven-aged forestry? Firstly, beware of appearances! Uneven aged woods can look wonderful but are they doing the job if that job is to use the land to the full to produce a useful crop of timber, bearing in mind that timber growing is the slowest form of investment by a very long way so ‘time is of the essence’. Unless we measure woodlands regularly we cannot know what is actually happening. Not to do so is synonymous with never looking at ones bank balance! A closer analogy is not bothering to see whether a reasonable level of interest is accruing on a deposit account but I am constantly surprised how few, very few, woodland owners have any idea of the rate at which their woodlands are growing and I fear CCF very often masks this because the woods look so well under this system, as indeed the woods above in East Anglia did.

Where else do my conclusions take me? Secondly then, look critically at every situation paying attention first to light levels in the woodland concerned. This not only applies to young plantations but to maturing stands too. Today we are seeing a lot of small plantings, often within woodlands, where there just is not enough light for the young trees to grow. In older woods too the crowns of the trees are often crowded and need more light; much of this under the guise of CCF.

Some years ago I had the opportunity to fly by helicopter over some plantations I was managing. From the ground the trees looked fine but from above, those poor trees, their crowns, the source of energy for their growth, were so crowded they could not possibly function to full advantage. Ever since, whilst marking thinnings, I try to imagine the trees from a ‘helicopter view’. Apply this principle to CCF woodland and attention is immediately drawn to many crowns that cannot be fully functional, particularly amongst the middle sized trees, those from which the final crop trees will be recruited.

Recently I replanted a 0.8 hectare coupe in mature deciduous woodland. Three growing seasons later the height growth of the young trees on the margin of the coupe is still significantly less for a distance of twelve metres in from the edge of the surrounding, mature woodland, compared with the young trees further out in the coupe. This applies not only to light demanding oak but also to strongly shade bearing western red cedar. If side shade is so dramatically reduced at the edge of a comparatively large coupe, what must it be in closed CCF woodland? It would be instructive to get out the old light meter and take measurements.

What we most certainly do need in order to inform the CCF debate are growth rate and yield measurements. Although detailed records were an integral part of the Faskally experiment referred to above, it did not last long enough to produce meaningful results. All I am aware of beside the negative result reported above in East Anglia are those of Michael Reade in the Chilterns and the long term Glentress trial. Perhaps we will soon see some informative figures from Stourhead giving clearer guidance on CCF. The fundamental difficulty with an irregular stand structure such as CCF compared with regular even aged stands, in both cases with all age classes represented, is the difficulty and time consuming nature of increment measurements and thereby yield control. In the latter field measurements are straightforward and statistical sampling reduces the work required, the results being compared with yield table figures. For the former this can only be done by periodic total enumerations and comparison with a theoretical ideal distribution of age classes, q-values being an example.

Wildlife conservation

The case for CCF is often based on a presumption that it is a better medium for wildlife conservation than is even aged silviculture. Mark Yorke in a letter to me in 2007 expressed this view thus: "… the stand managed without clear felling (i.e. CCF) will surely sustain a wider variety of habitats at all levels (from below ground to the tops of the tallest trees in the stand’s diverse structure), compared with an even-aged ‘uniform’ stand that is periodically clear felled and replanted.” An easy assumption but does it stand up to scrutiny? If one merely compares a single CCF stand with a single uniform aged stand of any age as sites of wildlife conservation value, CCF must win every time but as a method of forest management one must consider it over a larger area than a single stand, then one can compare several even aged stands of different ages with the structure produced by CCF. To provide for a wide range of wildlife, animals and birds in particular but to some extent flowers too, the wider the variety of habitats the greater the range of wildlife species that will use them. A CCF stand certainly provides a complex habitat but merely a closed woodland habitat. Many other important habitats are missing; for example, open space, internal woodland edge and most important, a graduation through re-stocking, thicket, pole stage, mature and clear fell (Harris & Harris 1991), all as discrete stands within the forest (Figure 2). Many species require a range of habitats, for instance, for feeding, shelter, lying up and for breeding. Not all these will be found in closed continuous cover woodland (Figure 3).

During two overseas forestry study tours I have come across examples of how wildlife exploits the benefits of adjacent but contrasting stand structures (habitats). The extensive and ancient Białowieża Forest on the Poland-Belarus border is intentionally unmanaged and includes a wide range of species and tree ages. The European bison (Bison bonasus) originally native there and re-introduced in the 1930s roams over large tracts, including the managed forest surround of
Figure 2. Forest stages and associated operations in even-aged stands (Harris and Harris 1991).

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<tr>
<th>Species</th>
<th>Edge, clearings, roads</th>
<th>Establishment, restocks</th>
<th>Thicket</th>
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<td>Yellow-necked mouse</td>
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Figure 3. The forest stages used by mammals (Harris and Harris 1991).
this Biosphere Reserve. We had hoped to see the bison in the Forest but did not. However, on leaving we passed through the surrounding managed forest being run on a clear cutting system and ‘lo and behold’, a family of three generations was seen grazing in a recently regenerated clear cut (Figure 4). Our presence with cameras soon frightened them into the cover of adjacent mature forest and on expressing surprise to the Warden leading us that we had seen them there rather than in the Forest itself, he said that they were seldom in the latter but much more often in the managed areas. Why? Because they had a range of habitats to suit their different needs for feeding, shelter and breeding.

A similar experience in North America demonstrated the same point. There a wilderness area had been set aside as a reserve for wolves and bears, both of which predate deer but the latter prefer the adjacent managed forest where they are able to exploiting a range of habitats so the wolves have deserted the reserve to follow their prey into these managed areas.

These are just two examples from mammal species but the same principles apply to most animals and birds. We have published elsewhere (Harris & Harris1991) detailed lists of British bird species using the various stages of managed forests, classified as establishment stage, thicket, pole stage, mature over-mature and restock stage. From this study it is clear that a variety of different habitats exploited by a wide range of birds are provided by forests managed on even-aged clear cutting systems and are greatly in excess of the small range of habitats occurring in selection forest (CCF).

Conclusion

As has been written elsewhere;"... there is widespread concern that clear-cutting does not satisfy the wider social, ecological and conservation functions of many forest ecosystems.” (Wilson et al. 1999) Thus the case for CCF rests on wider objectives than wood production alone but this should not be allowed to hide the fact that loss of production may go unnoticed.

I am concerned too about the quality of timber produced under CCF because the trees are inevitably more tapering than in uniform stands and will have larger knots. There is also the potential for moving unintentionally towards shade bearing species and thereby reducing the species mix.

I sometimes wonder if the emotional objections to uniform forestry from a conservation point of view are a spill over from arable farming where crop uniformity certainly does limit the range of habitats but cereal and root crops do not have the structural diversity of a series of uniform forest stands.

Literature cited


Esmond Harris has spent a lifetime working in the forestry sector. From initially working with wood he moved to forestry, so has always been conscious of the “end product”. After graduation in forestry and botany, followed by post graduate research in dendrochronology, he held teaching posts in the Forestry Commission as well as field management in South Wales. Later he headed the Forestry Division of the Agriculture Training Board, followed by experience as North of England Forestry Director for a large forestry management company, before joining the Royal Forestry Society as Chief Executive.

Silviculture is Esmond’s primary interest and in retirement he has established and manages varied small woodlands on his farm in Cornwall. He has written books on tree identification, wildlife, forest management and the history of oak in Britain.
Review by Rodney Helliwell

Before reading this publication, I set down three questions:

1. Is the information in this guide correct?
2. Is it new?
3. Is it dealing with what I would recognise as CCF?

In many respects, the third of these questions is crucial, and takes us back to the on-going debate on this matter (see Jim Ralph’s comments in CCFG Newsletter 27).

About 15 years ago I attended the first of Mark Yorke’s workshops on CCF, and about two-thirds of the way through the workshop the gentleman standing on my left had a sudden revelation and turned to me and said “It’s a completely different way of thinking, isn’t it?” Yes, it is a completely different way of thinking, as compared to that involved in the management of even-aged woodlands.

The principles of CCF which were formally adopted by the CCFG in November 1998 include the statement that “Under CCF management, stand improvement is concentrated on the development of preferred individuals” and goes on to say that “yield control is based on measurements of stem diameter and increment rather than age and area”. The statement also says that “CCFG believes that British forests managed in accordance with the above principles will generally develop a permanently irregular structure at compartment level”.

The publication under review here adopts a much wider definition of CCF, which is taken to include the full range of shelterwood systems (which are managed by age and area), and the advice which is given in relation to these dominates the publication. As such, the title might be a little misleading. If it were changed to “Guidance for use in the transformation of even-aged stands to continuous cover”, that might be more helpful, but that is not its apparent intention.

There is much that will be useful to the general reader in this publication, and I was pleased to see the importance placed on the stability of individual trees as a contribution to the stability of the stand as a whole. The references are fairly extensive and up to date, although a number of references which one might have expected to see, by authors such as Otto, Turckheim, Brucciamacchie, and Duchiron are not included; and terms such as “final harvesting” and “regeneration phase” clearly relate to systems which are basically even-aged rather than permanently irregular.

I am dubious that the concept of “frame trees” would be appropriate in a fully irregular stand; and one of the objectives of a well managed irregular stand is to avoid the need for re-spacing of trees which are too small to be commercially valuable; but I doubt if the average reader will get that message. In fact, it is stated that selection systems require all the operations typical of the management of even-aged stands, including re-spacing, and that it is often difficult to plan, execute, and control such operations [with which I would not necessarily agree]. The authors appear to represent what I would regard as conventional British Forestry Commission thinking, rather than that which is evident in Slovenia, Slovakia, Bavria, Franche Comté, and other regions, and which I would regard as better representing CCF.

Table 2.2 clearly demonstrates that Ellenberg’s scale is not very reliable when, for example, it places western hemlock as equal to sessile oak in terms of light requirement, so it might have been better to omit it, but that and a very small number of other comments are of very minor importance when compared to the fact that this guide does not do what I would have expected from its title. It provides no great insight into the management of truly irregular stands, which requires the abandonment of age and area as management tools and which offers advantages which are unlikely to be obtained in full by clinging on to even-aged concepts.

Whether or not this represents “best practice” is a matter for the reader to judge.

Dr Arne Pommerening responds ....

“Sivicultural principles of continuous cover forestry – A guide to best practice” is an attempt to summarise management principles for a wide range of continuous cover forestry situations in Britain ranging from the initial stage of a traditional mono-species plantation to well-structured uneven-aged woodlands. Following the findings in Pommerening and Murphy (2004) and based on practical experience in Wales and the European continent the book deliberately avoids a narrow view of what is to be included in continuous cover forestry and what is not. According to the authors’ experience many management techniques proposed for CCF management are generic and should also be part of best practice in plantation management. The authors believe that classifying the forestry profession into dogmatic fractures would not be a good service to our comparatively small professional community. Limiting continuous cover forestry to irregular stand structures would be a far too narrow understanding of CCF which neither the authors nor a wide range of other professionals would be willing to support. The book also attempts to address the widest possible range of readers on a factual basis without any political considerations.

“Frame tree based silviculture” is for example one of these generic concepts which apply to any kind of stand structure and objective. Frame trees can be commercially valuable trees, they can be stable cover-building trees or habitat trees for woodpeckers or squirrels. The main idea about frame
trees is to develop a better understanding of how to classify trees for management purposes. When taking out practitioners across the professional board it is surprising to see how underdeveloped this basic skill often is. Also in complex woodland structures planning and interventions are required and frame tree selection is an excellent method to base these on, especially for newcomers to the profession. Contrary to popular belief selection forests often do require interventions even in the mid-storey. Many visits to selection forests and the last author’s own management of such woodland types have clearly highlighted this need.

That age and area need to be substituted by other variables in certain woodland types is evident and is sufficiently highlighted by both the international literature and the best practice guide. This is neither a secret nor does it need to be explained in great detail.

Links:
Download available at www.ccfg.org.uk
[Note large filesize, 6.3 MB]
School of the Environment and Natural Resources, Bangor University - www.senr.bangor.ac.uk
Experimental Silviculture Research Group, Tyfiant Coed Project - tyfcoed.bangor.ac.uk

New Publication
A critique of silviculture: managing for complexity

Full citation:
ISBN 13: 978-1-59726-146-3 (pbk)
ISBN 10: 1-59726-146-7 (pbk)

Hot off the press, this new text is designed to challenge contemporary thinking about silviculture. The starting point is a historical review of our discipline, from its origins in central Europe, highlighting an early emphasis on “simplification” of forest structures in support of maximum sustained yields of timber. There then follows a comparison of silviculture and ecology as distinct scientific disciplines. A key point of difference, in the authors’ view, is that “complexity” is an inherent feature of ecological research. This leads to a “road map on how silviculture needs to change” in order to embrace a wider range of forest values and to manage forests more effectively as “complex adaptive ecosystems”.

The authors are all based in the US or Canada and so there is inevitably an emphasis on north American conditions. However, ProSilva Europe is mentioned and it is noted that silviculture in Europe is already embracing the move to greater stand-level complexity. Ultimately, the authors’ argue that we need to re-assess our relationship with forest ecosystems; we also need new approaches for analysis and interpretation of information in managed forests.

A Critique of Silviculture is not a manual or “how to” guide, more a re-assessment of silviculture theory. It is an advanced text suitable for senior undergraduate and postgraduate students, and those already well versed in the discipline. Many of the issues touched on will be familiar to members of CCFG. But if you did not think silviculture was at a “crossroads” this is one book that might convince you to reconsider your position.

Link:
Island Press - www.islandpress.org

New Publication
Tree terms

The Royal Forestry Society has recently published a newly updated version of their booklet Tree Terms. Aimed at newcomers to forestry, tree wardens, students and keen amateurs, it provides definitions for over 300 terms and acronyms related to woodland management, sustainability, climate change and carbon issue. Publication has been made possible through sponsorship from the Forestry Journal.

Further details about Tree Terms, and an order form, are available on the RFS website or direct from head office. Tree Terms is priced at £3 incl. P&P.

Link:
Royal Forestry Society - www.rfs.org.uk
RFS, 102 High Street, Tring, Herts., HP23 4AF.
CCFG News and Events

A selection of news items and events from the past six months. Please send details or pictures from forthcoming events for inclusion in CCFG Newsletter 30 (Summer 2009).

Event

CCFG appears at the APF Demo

APF Demo 2008, the UK’s largest forestry, woodland, arboricultural, wood fuel and utilities exhibition, was held on the 18-20 September 2008 at Cannock Chase in Staffordshire. The weather was fine and the atmosphere very upbeat. Held biennially, over 260 exhibitors and 20 000 visitors were expected to attend, making it the largest such event ever held in the UK.

CCFG had a small information display in the Woodland Trust marquee. We welcomed a steady stream of visitors and successfully promoted our programme of activities.

Thanks to Sharon Rodhouse and Jim Ralph for helping to staff our display, and to David Pengelly for providing the display boards. Thanks also to colleagues at Woodland Trust for supporting this initiative and for making us so welcome.

Links:
APF Demo 2008 - www.apfexhibition.co.uk
ConFor - www.confor.org.uk
Woodland Trust - www.woodlandtrust.org.uk

News

Woodlands for Wales

Results of the consultation to be published soon

Results of the Woodlands for Wales consultation are being collated and due to be published shortly. This work is a key component of the revised Wales Woodland Strategy, which will appear later in the year.

Woodlands for Wales is a 50 year strategy for forestry in Wales. It was first published in 2001 under directives from The Welsh Assembly Government. The consultation for the revised strategy was open from 22nd July to 14th October 2008, and CCFG Wales was among many individuals and organisations who made a formal submission. Any member interested in our submission may request a copy from Phil Morgan.

Background information about the review appeared in CCFG Newsletter 28 (August 2008). Continuous cover forestry is already an important feature of Welsh forestry. We hope our comments help strengthen the position of CCF in future policy, research and practice.

Links:
Forestry Commission Wales - www.forestry.gov.uk/wales
Forestry Commission Woodlands for Wales webpages - www.forestry.gov.uk/forestry/INFD-7GDE7A

Course Announcement

Woodland Heritage continues its innovative series of training events

Our friends at Woodland Heritage are running another of their successful Woodland to Workshop courses. The next 3-day course will be held in Herefordshire. The dates are Tuesday 5th May to Thursday 7th May 2009, inclusive.

Places will be limited and offered on a ‘suitability’ basis, rather than ‘first come first served’. Some subsidised places will be available to deserving individuals.

A report by Sharon Rodhouse on the first running of the course appeared in CCFG Newsletter 28.

For application forms and further details, contact:
Woodland Heritage
PO Box 168
Haslemere, Surrey
GU27 1XQ
Tel: 01428 652159
Email: enquiries@woodlandheritage.org.uk
Web: www.woodlandheritage.org.uk


News

Extending the AFI Continuous Cover Forestry Research Network to Britain and Ireland

A new network of permanent sample plots is being established in Britain and Ireland. The primary objective is to generate long-term data on structure, economic performance and productivity in mature and developed irregular-structure stands. Andy Poore and Phil Morgan, of SelectFor Ltd, are leading this initiative, which will adopt a protocol devised by the “Association Futaie Irrégulière” (AFI), in France.

AFI is a group of French private forest managers formed to promote the silviculture of irregular forest stands, particularly in broadleaved, but also in Douglas fir and pine-dominated stands. Since 1991 the group has established a network of research stands to demonstrate best-practice and to generate long-term data on stand performance. Working closely with ENGREF, the leading centre for forestry education and research in France, this is now regarded as one the most successful forest research networks in Europe.

A key principle of the AFI network is that there is no overall prescribed management. The network observes and chronicles the operation of experienced practitioners in forests with well-developed irregular structured stands. Data are collected using repeated measurements from permanent sample plots within each stand. These measurements are repeated every five years irrespective of the felling cycle. By 2005, ten research stands had been measured three times and 38 stands had been measured twice. Twelve or more parameters have been recorded on over 10,000 individual trees.

By December 2008 there were 80 research stands (usually one stand per participating forest), with stand sizes ranging from 5 to 15 ha. As the network expands, there is a desire to include more stands with well-developed structures and to embrace the widest possible range of site and climatic types. This latter criteria is in line with AFI’s contention that continuous cover silviculture is applicable to all site-types.

Following an approach from Andy Poore and Phil Morgan in 2005, AFI agreed to extend their network to Britain and Ireland. The first research stand outside of France was established at the Stourhead (Western) Estate in March, 2006 and the second at Curraghchase in Ireland in March, 2007.

Funding is now being sought to expand the network to:

- observe and chronicle the silvicultural management of experienced CCF practitioners in well-developed irregular structured stands across a range of site types in Britain and Ireland.
- collect data on the economic performance of these stands.
- periodicaly to produce reports which synthesise the results of the mensurational research and to provide silvicultural interpretation and guidance.
- forge a close link with some of the leading academics and practitioners in continuous cover silviculture in Europe.

The criteria for selecting stands to be included in the British and Irish Network will be broadly similar to that of the AFI Network in France namely:

- select stands where the owners and managers are committed to CCF and who can demonstrate a coherent approach to the application of continuous cover silviculture.
- select stands under transformation to permanently irregular structures with reasonably well developed structures.
- eventually, to ensure that the Network covers a wide range of site and stands types.
- allow the inclusion of stands which address specific silvicultural questions.

For further information about the SelectFor AFI Network, please contact Andy Poore or Phil Morgan.

Links:

SelectFor - www.selectfor.com
Association Futaie Irrégulière - www.prosilva.fr/html/index.html?PHPSESSID=5200f3014f23318de419c91846c379f (French version; English version available shortly)
ProSilva Norway founded

CCFG plays important supporting role

Report by Phil Morgan

At the ProSilva AGM in Freudenstadt in June 2008, two foresters, Anna Trede Nordal and Michael Hahn, petitioned the board for the inception of a new ProSilva group, ProSilva Norway. It was agreed that a growing number of foresters in Norway are showing interest in close to nature forestry and wish to form a group that shall help them to share ideas and acquire knowledge from other practitioners in Norway and further afield. The board felt that a new group should be formed and that if the group were to be constituted before the next ProSilva AGM in Slovenia that it should submit for ProSilva membership then. ProSilva Europe has made it a priority to find and support people interested in forming new national groups so this approach came at the right moment.

Members of the ProSilva Norway group at their first technical meeting in Telemark. (Photo: P. Morgan 2008)

Anna and Michael asked me at Freudenstadt whether I would be willing as Chairman of CCFG to give some advice and help with the formation of their new group and to be a guest speaker at the launch. I was delighted that the experience and standing of CCFG had been recognised so that we could contribute in some to the expansion of ProSilva.

I travelled to Norway with my wife Catriona later that year for the inauguration on the 20th and 21st September. The inaugural meeting was held at the Steiner Agricultural College at Foldse in Telemark. It was held over two days and consisted of field visits to the forests around Foldse, discussions about forestry and changes in land use and a formal meeting with presentations and the official witnessing of the newly constituted organisation. Norwegians do not set up associations lightly because they are required by law to be regulated and to have a formal constitution. Every detail of the constitution was carefully scrutinised, weighed up and argued over so that it took two hours to go over every clause line by line. It was worth it in the end because we then had a marvellous party afterwards with that year’s new wine and regional specialties brought by Michael Hahn and his friends from Germany and with Michael at the piano for the rest of the evening. There were 15 witnesses to the formation of the association who all put their names to the registration document. I can honestly say that ProSilva Norway is a serious organisation with real intent, and that although it faces challenges in a country where forestry has been dominated during its recent history by a strong industrialised outlook, it will work to find ways of using close to nature and continuous cover forestry.

Aksel Hugo is Chairman of ProSilva Norway
Anna Trede Nordal is Secretary of ProSilva Norway
Tilman Hartenstein is Director of the Steiner Agricultural College at Foldse

Philippe Morgan is an honorary member and special advisor to ProSilva Norway

A copy of the CCFG presentation will be posted on the CCFG website.

Links:
ProSilva Europe - www.prosilvaeurope.org

Forestry sector comes together to agree steps to ease economic gloom

Source: Forestry Commission News Release

A package of measures to help Welsh forest businesses face the current economic downturn has been developed by Forestry Commission Wales and industry bodies. A recent meeting with the Confederation of Forest Industries (ConFor) and the United Kingdom Forest Products Association (UKFPA) has highlighted steps that can be taken now as well as raising other ideas for consideration. Welcoming the Commission’s action, Rural Affairs Minister Elin Jones said:

“Our rural economy faces many challenges caused by these unprecedented market conditions and these steps taken by the Commission are aimed at easing the pressure on hard pressed rural businesses.”

"The Commission is looking hard at additional ways in which it can support the whole forest industry in a fair and even-handed manner so that it is better placed to respond strongly to the next upturn.”

Ms Jones said FC Wales, working with the industry, had come up with “practical, everyday measures” that she hoped would bring a degree of stability and confidence to forest operations.

“The downturn in forestry is not something that the Commission can resolve alone. The whole sector has to pull together until we see a return to normal trading conditions.”

Key measures that have been agreed include:
- Continuing wherever possible to operate normal contract and credit arrangements
- Offering reasonable extensions to existing contracts
- Enabling customers to work high priced contracts alongside more recently purchased lower priced contracts in order to reduce their impact on cashflow
- Negotiating changes to payment profiles in exceptional circumstances
- Continuing to offer sales to the market to ensure continuity of supply and retention of skills
- Setting sale reserves based on a realistic view of the market
- Ensuring that harvesting contractors and hauliers are paid promptly

The Commission will enter discussions with any customers or suppliers who request support. Anyone who would like to explore options should contact Jerry Pritchard in Forestry Commission Wales's Wales Harvesting and Marketing unit on 0845 604 0845.

News

Potential identified to grow market for home-grown Scots pine timber

Source: Forestry Commission News Release

Encouraging prospects for the potential to grow and develop the market for Scots pine timber from northern Scotland are identified in a study report published by the Forestry Commission.

The study was part of a continuing partnership project aimed at providing information about the quality and quantity of Scots pine timber grown in northern Scotland, and about developing its economic potential. Partners in the project include the Forestry Commission's Forest Research agency, Forestry Commission Scotland, Scottish Enterprise, Highlands & Islands Enterprise, and the Centre for Timber Engineering (CTE) at Napier University in Edinburgh.

The report, written by the CTE's Ivor Davies, reviews the value-added and local processing potential of Scots pine timber from northern Scotland. It discusses the market potential of a number of products, and identifies relevant development actions.

Scots pine timber is generally strong and easily worked, with mechanical properties that compare favourably with other commercial conifer species grown in Scotland. The report identifies several market opportunities for it, highlighting five products that are seen as offering particular potential for home-grown Scots pine timber: playground equipment, stress-laminated bridges, massive timber construction, external cladding and wood modification.

The report identifies a number of measures that would help to develop the market for these products, and these include:
- assistance to manufacturers to develop product ranges of garden equipment;
- help for potential manufacturers of stress-laminated bridges to develop suites of handrails and other non-structural components;
- ensuring that home-grown Scots pine is considered by companies investing in "massive" wood construction techniques;
- assessing the scope for setting up a thermal wood modification plant in Scotland, particularly for companies specialising in external cladding; and
- exploring the potential for "branding" some of the products as "Caledonian pine" or by associating the timber and products with particular estates or localities.

Scots pine's vulnerability to infection by bluestain fungus and a tendency to contain a high frequency of dead knots are key factors that hinder the development of the market and limit its value-added potential. The report says control of bluestain, and grading to select out dead knots, will be important wherever value addition is proposed. The study also identifies continuity of supply of logs of suitable quality, and the sometimes prohibitive cost of selecting good-quality timber, as other limiting issues.

Some of the possibilities highlighted in the report will be explored in a recently funded Northern Periphery Programme project, “Developing Scots pine”, which is being led by Highland Birchwoods and has partners in Finland, Sweden, Norway and Scotland. This project will include practical trials of a number of products, in conjunction with industrial partners.

A workshop on bluestain will be held to provide guidance on management of the supply chain to minimise bluestain incidence, preventative treatments, and approaches for accommodating bluestain in final products. Looking to the future, the project will also include the development of improved silvicultural guidance for the establishment and management of Scots pine forests for the production of high-quality timber. Further information on this project is available from www.pineinfo.eu.

The report has been welcomed by Ian Ross and Priscilla Gordon-Duff, chairs of the Highland & Islands and...
Grampian Regional Forestry Forums respectively. Mrs Gordon-Duff said, "The native Scots pinewoods of Deeside and the Cairngorms form an iconic emblem of the woodlands of Grampian. Not only do they look beautiful at any time of year, they are also a valuable timber resource, as this report highlights. The timber from these trees has always been an important part of the local economy, otherwise they might have disappeared long ago."

"I welcome the valuable guidance in this report, and look forward to working with Forestry Commission Scotland, private woodland growers, wood processors and other partners to meet the challenges of continuing to produce quality timber for local markets."

Mr Ross added, "Scots pine forests are a much-loved symbol of the Highlands, making important contributions to nature conservation, landscape beauty and tourism as well as though timber production. The forest that pays is the forest that stays, so I warmly welcome this report for the assistance it will provide as we work to ensure that this wonderful resource continues to provide its full range of benefits for generations to come."

The report is entitled "Scots pine timber quality in Northern Scotland: market development study - final report". It is available for downloading from the silviculture and timber properties pages in the sustainable forest management area of the Forest Research website, www.forestresearch.gov.uk. Further information is available from Elspeth Macdonald (elspeth.macdonald@forestry.gsi.gov.uk) in Forest Research.

Links:
Forest Research – www.forestresearch.gov.uk
Centre for Timber Engineering - www.cte.napier.ac.uk
Developing the Scots Pine Resource - www.pineinfo.eu

Announcement
Randle Travel Fund
Deadline approaches for the annual travel award from the Royal Forestry Society

Through the generosity of this fund, the RFS can offer bursaries for 2009 to members wishing to go on individual trips overseas to bolster their forestry know-how and broaden their horizons. There are no age restrictions.

Bursaries are normally in the £400 - £600 range. The deadline for receipt of application is noon Wednesday 11th March.

Link:
Royal Forestry Society - www.rfs.org.uk
RFS, 102 High Street, Tring, Herts., HP23 4AF.

Announcement
CFA Young Forester Award 2009

The Commonwealth Forestry Association has announced the launch of the 2009 Young Forester Award competition, which is designed to support the professional development of foresters under 35 years of age. Further information is available from the CFA website.

Link:
CFA - www.cfa-international.org.

Event
ICF Conference, 22-23 April 2009
This year's theme is ‘Timber, mutton or fuel?’

The Institute of Chartered Foresters’ (ICF) annual conference this year is debating the economics of land use and forestry, taking the theme ‘Timber, mutton or fuel?’ - an exploration of the future of forests and woodlands in the face of economic and climatic pressures. The event will include case studies from overseas, and a debate on ‘Multi-purpose forestry is dead. In a resource-poor 21st Century, the UK forestry sector must once again make timber and energy production its overriding priority’.

Programme and booking details are on the ICF website.

Link:
ICF - www.charteredforesters.org
ProSilva carbon policy announced

At the ProSilva Europe Congress in Freudenstadt (June 2008), it was agreed that a statement should be prepared concerning energy and carbon management with respect to ProSilva management principles. A first draft of the statement (in three languages) was circulated within a small group of interested persons, and has now been uploaded to the ProSilva Europe website. The final version will be approved at the next ProSilva 20th Anniversary Congress, at Logarska dolina, Slovenia, to be held 24-27 September 2009.

Link:
ProSilva Europe – www.prosilvaeurope.org

News

ProSilva Europe 20th anniversary congress to be held in Slovenia

The organisation returns to its roots after 20 years of achievement

ProSilva Europe was founded in 1989 at a meeting in Robanov Kot, Slovenia, and has grown to become a major player in promoting “close-to-nature” forestry in Europe. To celebrate and renew the vision of this organisation, there will be a gathering of leaders from the 25 national groups. The event will be held at Logarska dolina, Slovenia, 24-27 September 2009, and the host of the organising committee is Juij Diaci.

There will be a one day conference dedicated to the general item: linking practice, science and educational outreach for advancing close-to-nature forest management followed by two days excursions. CCFG will be represented by our chairman and up to three other members of the committee.

Link:
ProSilva Europe – www.prosilvaeurope.org

News

Complex stand structures feature as mini-special issue of Forestry

Complex forest stands represent an increasing proportion of the productive forest land base throughout many of the world’s forest ecosystems. An international conference under the auspices of IUFRO was held in Sault Ste. Marie, Ontario, Canada in July 2007. The resulting papers were published as a mini-Special Issue of Forestry, which serves to benchmark the current state of knowledge in this emerging field.

Link:
Forestry - www.forestry.oxfordjournals.org
IUFRO - www.iufro.org

CCFG Programme 2009

All details will be uploaded to the CCFG website, www.ccfg.org.uk, "Events and Field Meetings" pages. Contact CCFG Administration, ccfg.admin@gmail.com, for further information and booking details.

CCFG International Study Visit:
Romania, June 2009 (tbc)

Plans are underway for a short study tour to Romania, focusing on continuous cover systems and primeval forest reserves. Potential dates, subject to confirmation, are in the first or second week of June 2009. Our hosts in Romania are long-standing friends of CCFG. The organizer for this event is Rik Pakenham. Full details will appear shortly on the CCFG website.

Contact Rik Pakenham to register interest: cforest@psa-online.com

CCFG England Field Meeting:
Ramscoat Wood, Chesham
2 July 2009 (Joint Meeting with RFS)

Ramscoat is a well-known woodland where CCF has been practiced for some time. The meeting will consider how CCF can be accommodated within the England Woodland Grant Scheme (EWGS), and there will an opportunity to review inventory techniques using the FCIN 45 protocol. Rik Pakenham, Gary Kerr and local FC Woodland Officers will contribute to this event. As usual, a small fee applies.

Contact Rik Pakenham to register: cforest@psa-online.com

CCFG Scotland Field Meeting:
Glenmore Forest, Cairngorms
3 September 2009

The Annual Event in Scotland this year takes the group to Glenmore to look at recent Scots pine silviculture in the Inverness Forest District. The event is being hosted by local FCS and Forest Research staff. This is always a popular meeting in the CCFG diary and early booking is advised.

Full details will appear shortly online, contact Colin Edwards to register interest: colin.edwards@forestry.gsi.gov.uk

CCFG Wales Field Meeting:
Newborough Forest, Anglesey
October 2009 (tbc)

This meeting focuses on prescription design for CCF in pine plantations. These stands are important red squirrel conservation areas. The event will be led by Dr Arne Pommerening and the CCFG Wales committee.

Full details will appear shortly online, contact Phil Morgan to register interest: phil@selectfor.com
The highlight of the CCFG year will be a one-day conference on 29th September 2009 at Westonbirt Arboretum. The Group has taken an important step in organising this event and has attracted some eminent speakers to address this fundamental topic. There will also be a field demonstration session in the afternoon to make the link from science to application. CCFG hope to significantly advance understanding of light in the forest and how it interacts with other factors affecting tree growth.

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<tr>
<td>10:00</td>
<td>Welcome and Opening Remarks</td>
<td>Phil Morgan, CCFG Chair</td>
</tr>
<tr>
<td>10:10</td>
<td>What are the main factors in determining the effectiveness of daylight in woodlands?</td>
<td>Rodney Helliwell (Consultant)</td>
</tr>
<tr>
<td>10:30</td>
<td>Variation in light intensity at different latitudes and seasons, effects of cloud cover, and the amounts of direct and diffused light</td>
<td>Paul Burgess (Cranfield University)</td>
</tr>
<tr>
<td>11:00</td>
<td>Break</td>
<td>Coffee/tea provided</td>
</tr>
<tr>
<td>11:30</td>
<td>Amounts of light required for photosynthesis, and interaction with moisture supply, atmospheric humidity, windspeed, and temperature</td>
<td>Maurizio Mencucci (Edinburgh University)</td>
</tr>
<tr>
<td>12:00</td>
<td>Field assessment and estimation of light under various canopy conditions and in gaps</td>
<td>Mathias Disney (University College London)</td>
</tr>
<tr>
<td>12:30</td>
<td>Lunch</td>
<td>Buffet lunch provided</td>
</tr>
<tr>
<td>13:15</td>
<td>Field demonstrations</td>
<td>Based in Westonbirt Arboretum</td>
</tr>
<tr>
<td>15:00</td>
<td>Break</td>
<td>Coffee/tea provided</td>
</tr>
<tr>
<td>15:30</td>
<td>Open discussion</td>
<td>Chaired by Andy Poore (Consultant)</td>
</tr>
<tr>
<td>16:00</td>
<td>Summing up: review of need for further studies, publications or training</td>
<td>Graham Gill (Forest Enterprise, Kielder)</td>
</tr>
<tr>
<td>16:15</td>
<td>Close</td>
<td></td>
</tr>
</tbody>
</table>

Cost: £40 CCFG members, £50 non-members

Contact for registration: ccfg-admin@gmail.com
CCFG, Plas Wenallt, Llanafan, Aberystwyth. SY23 4AX
Recent Journal Publications

A round-up of recent publications of interest or related to CCF. Listed here are papers mainly published since August 2008. Those with a PDF icon are archived by CCFG.


Bibliographic Service

CCFG maintains a archive of papers relating to Continuous Cover Forestry. We can provide single copies of most publications listed in this column. Contact the Administrator for more information.

A general reference for CCF literature is in the members’ area of our website (free to download):

CCFG Committees

**CCFG GB Committee:**

Philippe (Phil) Morgan  
CCFG Chairman and Co-ordinator (Wales),  
GB Representative to the ProSilva Europe Assembly  
Email: phil@selectfor.com

Rik Pakenham  
Co-ordinator (England)  
Email: eforest@psa-online.com

Colin Edwards  
Co-ordinator (Scotland)  
Email: colin.edwards@forestry.gsi.gov.uk

The Administrator position is currently vacant

**CCFG Scotland Committee:**

Bill Mason, Chair  
John Dobson, Secretary  
Colin Edwards, Co-ordinator

**CCFG Wales Committee:**

Phil Morgan, Co-ordinator  
Jim Ralph  
Huw Denman  
Dave Eilerby  
Martin Price

**CCFG England Committee:**

Rik Pakenham, Co-ordinator  
Mike Seville  
Andy Poore  
Sharon Rodhouse  
Gary Kerr

The Next Issue …

**CCFG Newsletter 30**

The next issue of *CCFG Newsletter* is scheduled for publication in summer 2009. Members are invited to contribute articles, photographs and news items to make the *CCFG Newsletter* as lively as possible.

The deadline for submissions is 30 July 2009.

**CCFG Administration**

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