CCFG Scotland visit to Novar Estate, nr Dingwall, Easter Ross 24th September 2015
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Around 50 members and guests, including a group of students from Inverness College, assembled at this famous forestry estate on a sunny morning in late September. The group was welcomed by Ronald Munro Ferguson the owner of Novar Estate and Cameron Ross, Forestry Consultant.

The estate has a long history of woodland management since the first woodland plan covering some 1500ha was produced in 1899. The woodland area was expanded by further planting in the 1960’s and again in the last 2 years with some 400ha of mixed woodland planted under SRDP. The total woodland area is some 3500ha producing 15-20 Kt of timber per annum. During the 1950’s Ronald’s father, who had a degree in Forestry introduced a shelterwood system over much of the older woodland.

Red, roe and Sika deer are present in the woods, but there is a new strategic fence which surrounds the woods and enables the estate to actively manage populations within the woodland area.

Stop 1 Meann Chnoc
A well thinned stand of Douglas Fir p1951. There were areas of mixed species regeneration (DF, SS and European Silver Fir) and following the last thinning in 2014 a flush of young DF seedlings could be observed where the ground was disturbed.
Discussion covered deer management, damage to regeneration from future harvesting and favoured species. The estate was keen to continue with DF but would accept components of SS and Silver Fir. It was agreed this some cultivation may be required to achieve satisfactory regeneration and low browsing levels would be essential for success.
Stop 2 Swappach Belt
This was a registered beech seed stand of German provenance planted in 1907. It immediately adjoined the B817, was very prominent in the landscape, and the estate are keen to continue this as a beech woodland. Despite past thinning and gaps in the canopy the flush of young seedlings seen each year failed to establish and the group were asked for views. It was felt that browsing pressure from deer and rabbits was probably the limiting factor and it was suggested that erecting some small enclosures would show results. The group also felt another thinning was essential.

Stop 3 Black Park
This stop showed us western hemlock of various ages and managed under uniform and group shelterwood systems. The area involved is around 50 ha and is probably the largest area of WH in Scotland. The WH had originally been planted in mixture but had come to dominate this part of the forest. The estate used to obtain considerable returns by harvesting small stems as pokers for the nearby Invergordon aluminium smelter. Following the smelter’s closure it had been difficult to market hemlock but the new woodfuel market had to some extent replaced the previous outlet. Butt rot was widespread. The estate would like to see more SS and DF to produce higher value sawlogs on this site. Three sites were visited to discuss options for future management. The first was an old permanent sample plot established by Forest Research in 1926. This was standing at some 800m$^3$/ha and had produced an estimated 1500m$^3$ of cumulative volume. The remarkable carbon sequestration of this site was noted. The next two sites looked at prolific WH regeneration in small gaps. Whilst no cost was associated with achieving WH regeneration, the density was so high that it had swamped planted DF and it was agreed that mechanical respacing would be required to favour the more valuable species while the WH could be managed as short rotation forestry. The final stop had a sufficient number of Scots pine and SS seed trees to regenerate in mixture with the WH. The area had been respaced to favour SS and sample plots had shown 47% SS. Stripping by Sika deer even in the thickest regeneration was noted and could impact on timber quality. It was agreed that by thinning to favour the SS a mixed stand could be produced and experiments elsewhere indicate that SS will dominate such a mixture.

At the conclusion of the visit to Black Park, Cameron Ross expressed some concern about fitting these various approaches to continuous cover into the restrictions imposed under SRDP. The approved Forest Plan covered the operations but the Conservancy would work with Cameron to explore grant eligibility further.
Stop 4 – Fyrish Hill
The majority of the afternoon session was spent within the Fyrish Hill forest block on the south-facing slopes above Novar House. This attractive area carries mature mixed-coniferous stocking, established by replanting over the three decades following major storm damage to previous stands, occurring around 1880 (for example the severe storm which precipitated the Tay Bridge Disaster of 1879). The upper slopes have larch predominant in the canopy with some Scots pine and a naturally-regenerated understorey combining larch, spruce and some firs. Mid-slopes have a canopy of superb Douglas fir and Sitka spruce, with some larch and pine. Here the naturally regenerated understorey is dominated by the Sitka spruce, with some fir.

The silvicultural regime in this area over recent decades has been described as “reactive harvesting”, principally in response to occasional demand for premium larch and Douglas fir stems. The larch cladding for the new Scottish Natural Heritage headquarters in Inverness was sourced from these woodlands and there is periodic demand for Douglas fir beams for construction work - for example the extension to the Forestry Commission Conservancy Office at Dingwall. Effectively this amounts to a single tree or irregular selection system with some aspect of target-diameter felling. Larger dimension Sitka spruce does not tend to attract such premium markets and these stands may tend to become over-stocked without planned shelterwood fellings.

The potential for an outbreak of *Phytophthora ramorum* casts a shadow over the continued use of larch, despite the successful natural regeneration achieved to date under open stands on the upper slopes. Other desirable conifer species such as Douglas and European silver firs can obviously be favoured when tending natural regeneration, but there may be a need for future enrichment/diversification underplanting should larch later become infected. This would inevitably have an impact on the winter landscape appearance of the extensive larch stands. Cover of bracken and woodrush appeared to be increasing in these stands as the canopy becomes more open and this can serve as an obstacle to future natural regeneration dynamics unless some form of site preparation is used.

Deer pressure is now being managed by a combination of perimeter fencing and active stalking within the fenced area, but the browsing pressure is still considered too high to recruit abundant Douglas fir regeneration, whereas Sitka spruce regeneration is evidently more robust. As Douglas fir is preferred silviculturally over the less palatable Sitka spruce on these favourable sites, there may be a need for protected under-planting of this species to secure its future role in the mid-slope stands. If tactical exclosures were used in future, this could create the opportunity to enrich with other palatable conifers such as red cedar, redwood or silver firs. However this is a potentially more costly approach to regeneration.
There were discussions over possible collaborative installation of repeat enumeration plots here, that might allow for more precise future regulation of species composition, basal area, removals and natural regeneration levels.

Stop 5 – estate sawmill
The final part of the afternoon was spent looking at the newly installed estate saw-mill at Clashnabuiac, below Fyrish. This facility involves an impressive fixed-location Woodmizer LT70 plant with mechanised log-handling, and is intended to complement the existing longer-established sawmill nearby, which mainly produces standard fencing and similar products. The new mill is mainly intended to process large-diameter material from the estate woodlands, producing “cut-to-order” structural beams, flooring and planking products. This facility opens up the opportunity to utilise some of the less easily marketable conifer species from the estate woodlands, such as western hemlock, western red cedar and European silver fir, alongside more familiar Douglas fir, larch and Scots pine. Consideration is being given to trial production of wooden/log cabins, for which these alternative timbers might be able to be deployed more easily than in more highly-specified architectural projects elsewhere.

Charlie Taylor thanked our hosts for a varied, fascinating and instructive day, and we all looked forward to a return visit in the future to see how the woodlands had developed following further years of CCF management.

John Risby and Scott Wilson
Photographs courtesy of Scott Wilson