Case Study 7

Curr and Anagach Woods, Strathspey and Windsor Estate, Berks

Location and ownership of woodlands

The Curr and Anagach Woods are close to Grantown on Spey in northern Scotland. Curr Wood [NGR NH 990230] extends to 133ha (~330 acres) and is managed for a private owner by Bell Ingram. Anagach Wood [NGR NJ 040275] extends to 382 ha (~940 acres) and is owned and managed by a local community trust. Both woods formed part of the traditional Seafield Estates until their disposal in 2001-2002.

The Swinley Park and Gravel Hill site on the Bagshot Heaths [NGR SU 886659] forms part of the Crown Estate Commissioners' forestry holdings at Windsor and extends to several hundred acres of predominantly pine plantations with some birch.

Significance/ reasons for selection as case-study example

These sites have been chosen as case-studies within the project for two main reasons:-

1. Curr Wood and Swinley Park are excellent examples of the classic "uniform shelterwood" or "seed-tree felling" approach to securing natural regeneration in maturing Scots pine plantations (adoption scenario 4), which is not commonly applied in Britain but is familiar in Germany. These woodlands have been managed using this system, requiring considerable forestry skills for success, over many decades. It offers the opportunity to establish a successor generation of pine at much lower cost that by replanting, and higher stem numbers favour good form.

2. Anagach Wood provides a contrasting situation where a lower impact approach to Scots pine regeneration under alternative silvicultural systems is being attempted in order to address recreational amenity and wildlife conservation priorities. This is a set of circumstances that will be relevant to many managers considering ATC.

Owner objectives for management (including adoption of ATC systems)

Management at Curr Wood and Swinley Park, Windsor is primarily for economic timber production, but with significant benefits for nature conservation (especially at Curr Wood) and public recreational amenity (especially at Swinley Park). Adoption of ATC approaches employing seed-tree/ uniform shelterwood natural regeneration is primarily for economic reasons at these sites, coupled with a long heritage of this form of silviculture. Initial visual impacts of this method of regeneration are not significantly different from the clearfell/ restock system, but costs are much lower.

Management of the Anagach Woods places joint emphases on nature conservation (especially for capercaillie and red squirrel) with local recreational amenity. Timber production is a secondary objective to produce some income streams in support of other management. As such, clearfelling of Scots pine is not an approach that would be readily considered and adoption of gradual ATC techniques is seen as the obvious approach to combine the multiple objectives on the site, retaining community support.

Biophysical characteristics of the sites

The Scottish sites are at 190-210 m asl (Anagach Wood) and 220-290 m asl (Curr Wood) in an area with a cold, but fairly dry climatic regime [AT_5 of 900-1000 dd, MD of 70-90 mm, annual rainfall of 700-800 mm]. DAMS scores of 14 reflect moderate exposure within the Spey valley. Soils are developed over the base-poor Moine schist series rocks and are therefore infertile [ESC SNR Very Poor]. Soil moisture regimes vary from ESC SNR Very Moist in peaty areas to Fresh/ Slightly Dry in podzols.

The Swinley Park site is at 90-130 m asl on a level plain in the Thames valley. The climate is very warm and dry [AT_5 of ~1780 dd, MD of ~190 mm, annual rainfall of 600-700 mm]. A DAMS score of 13 reflects moderate exposure within the Thames valley. Soils are developed over the acid Tertiary Bagshot stands of the Reading basin and are therefore infertile [ESC SNR Very Poor]. Soils are typically deep free-draining podzolic sands with ESC SMR Fresh to Moderately Dry, locally moister.

Access for forestry operations and timber extraction is straight-forward at Curr Wood and Swinley Park, Windsor with direct access to the public road. At Anagach Wood, physical access is easy but conservation and amenity considerations constrain works.

Stand history and current composition

The stocking of these sites is dominated by plantation stands of mature Scots pine. At Curr Wood and Anagach Wood, plantations were created by the Seafield Estates during the mid-1700's, using well-adapted local planting stock sourced from the local Caledonian pinewoods of Strathspey. The stands on these sites today are believed to derive from those original plantings by natural regeneration and are likely to be 80-120 years old in most cases. There are some other species present within Anagach Woods including a little oak, beech and hemlock and significant self-sown birch. It is believed that Curr Wood has been managed using the uniform shelterwood/ seed-tree approach over much of its existence, while Anagach Wood has had a more complex management history involving smaller group shelterwood fellings and the use of cattle to prepare a suitable seed bed for Scots pine (in place of mechanical scarification). At Swinley Park, Windsor, uniform plantation stands of Scots pine were established on the Bagshot heaths during period 1920-1960 and are now managed using the uniform shelterwood/ seed-tree felling approach as at Curr Wood.

Silvicultural treatments applied to date and intended future silviculture

At Curr Wood and Swinley Park, Windsor, seed-tree fellings have been implemented over the past 10-15 years, followed up by mechanical scarification to promote Scots pine regeneration. At Curr Wood, stands were in the age-range 80-120 years at the time of these operations, while at Windsor the equivalent age range was 50-70 years, in some cases brought forward by storm damage in 1989-90 when stands were 40-50 years old. Generally seed-tree fellings should involve reduction in stocking to 50-100 stems per ha. In both locations, recruitment of natural pine regeneration has been satisfactory, although after some initial delay at Curr Wood. At Windsor, initial stocking after regeneration is of the order 25,000 stems per ha, but this reduces to 5,000 stems per ha by self-thinning and removal of moribund material. The remaining overstorey can be removed once the regeneration has reached 1m in height and is free

to grow. From age 25 years stands are subject to regular thinnings with a view to recommencing the regeneration cycle at around 55 years. Progress through these stages can be expected to be slower at Curr Wood due to climate and growing conditions. At Anagach Wood, natural regeneration arises in small gaps created by accidental fires, which also have the effect of removing ground vegetation and humus. While controlled burning is probably not an acceptable method for regeneration here, small coupe felling followed by mechanical scarification or cattle grazing to prepare the seed bed could well be a suitable analogue, producing some pine timber for sale.

Evaluation of current silvicultural status in terms of ATC adoption/ regeneration

At Curr Wood and Swinley Park, implementation of alternative silvicultural systems has reached ***developmental category 2*** (progressive/ mature transformation) although the intention is to operate these stands on a simple two-storey structure in most cases. Hence further progression in terms of stand structure is not anticipated. At Anagach Wood the aim is to use a more complex approach with smaller coupe fellings and multiple age-classes of pine being present across the site. At present, progression towards that objective has as yet only reached ***developmental category 3*** (early-stage transformation) although the maturity of the stands could allow rapid future progress. It is expected that ATC will continue to be the main modes of management at these sites given the track record at Curr Wood and Windsor and aims for Anagach Wood.

Commentary on inventory and monitoring protocols/ demonstration potential

Detailed stocking surveys and habitat assessments have been carried out at Anagach Woods as part of recent management planning work. The fairly straight forward silvicultural approaches and structure at Curr Wood and Swinley Park, Windsor imply that conventional volume tariff of the pine stand prior to the regeneration felling, combined with subsequent visual and plot-based monitoring of natural regeneration is sufficient. These sites all have ATC demonstration potential (organised visits preferred). Public interpretation signage is already in place at Anagach and Swinley Park and could easily be augmented to cover silvicultural aspects in more detail. With approval of the owners/ managers similar information could be offered at Curr Wood.

Commentary on economic and operational implications of ATC adoption

The natural regeneration methods employed at Curr Wood and Swinley Park, Windsor are straight-forward to operate and represent the most economic option. At Anagach Wood, more intricate management to meet community, public amenity and conservation objectives will raise planning and monitoring costs, but thinning and group felling interventions under ATC are fairly standard for woodlands in this area.

Other relevant field examples recorded within the project

With emphasis on the management of mature pine under ATC at Curr and Anagach Woods/ Windsor Forest, the most direct comparisons are with the experiences reported for Blelack Woods and Glen Tanar Estates (Case Study 6) and Cawdor (Case Study 4). Some work at Cowdray Park Estate (Case Study 8) is also relevant. Windsor Forest is the most famous example of Scots pine managed under long-term ATC in the English lowlands, with Curr Wood being a fine example of uniform shelterwood.

Photographic record

Left: Scots pine natural regeneration in gaps adjoining mature seed-source stands

ANAGACH WOOD

Right: Scots pine natural regeneration in gaps adjoining mature seed-source stands

Left: Scots pine natural regeneration in gaps adjoining mature seed-source stands

ANAGACH WOOD

Right: Scots pine natural regeneration in gaps adjoining mature seed-source stands

Left: Scots pine natural regeneration in gaps adjoining mature seed-source stands

ANAGACH WOOD

Right: mixed regeneration under retained mature Scots pine

Left: unthinned permanent sample plot lacks natural regeneration

CURR WOOD

Right: development of natural regeneration following seed-tree/ uniform shelterwood felling

Left: development of natural regeneration following seed-tree/ uniform shelterwood felling

CURR WOOD

Right: development of natural regeneration following seed-tree/ uniform shelterwood felling

Left: natural regeneration following seed-tree/ uniform shelterwood felling

SWINLEY PARK, WINDSOR

Right: natural regeneration following seed-tree/ uniform shelterwood felling