



SEAFIELD AND STRATHSPEY ESTATES



Private Forests Stand Management & Silviculture



Seafield Estate Forestry

- The Family have been involved in Forestry since the Early 1700's and Sir James Grant was a noted “Improver”
- There are two main holdings in Strathspey & Cullen
- Cullen Estate is 12,250ha of which 3,500ha (28%) is wooded
- Strathspey Estate is 22,000ha of which 8,000ha (36%) is wooded but 22% plantation, 14% native and “deer forest”
- Cullen 40% Sitka spruce, 25% Scots pine
- Strathspey 70% Scots pine
- Cullen good age class diversity , Strathspey significant post war plantings with 55% in 30 – 60 year age class.





Stand Management Historical Perspective 1933

- There are two distinct types in the old trees in this forest, the one with drooping branches, and the other with short, sturdy, horizontal branches but with pendulous points. Both types appeared to be equally resistant to snow break.
- The dead branches are remarkably persistent on the stems, the trees in dense unthinned stands of 40 to 50 years of age still carrying many dead branches near ground-level.
- The method employed, the shelterwood compartment system. As soon as the woods have opened out sufficiently to allow grass to appear, sheep and cattle are turned in to graze; the stock keep down the heather and other ericaceous plants and churn up to some extent the needle humus with the mineral soil.
- When the trees are approaching maturity and the stocking has been reduced, either naturally or by thinning, to about 200 trees per acre, a seeding felling is made in which half the trees are removed, the next felling again removes 50 per cent, of the trees, leaving 50 trees per acre; after the third felling 15 trees are scheduled to remain to be removed when the area is more or less completely restocked.
- The length of the regeneration period depends upon local conditions, but may be almost indefinitely prolonged where new growth is slow in appearing.



Stand Management Historical Perspective 1933

- **The thinning, and also, to some extent, the regeneration practice in Strathspey are in great measure determined by the economic conditions of the district. Distances from road and rail are often quite formidable, and cost of haulage makes the disposal of small sizes of timber virtually impossible.**
- **In consequence it has long been the practice to rely entirely on the natural thinning out of the young stands until the trees have reached about sleeper size. This means that for 60 to 80 years the trees have to fend for themselves.**
- **An excellent illustration of this was provided by the 260-acre block of 50-year-old natural Scots pine known as Curr Wood. Regeneration in this wood was both rapid and complete, and there is scarcely a gap in the area. In many places the seedlings came up less than 1 foot apart, -and in the thicket stage the wood was virtually impassable. It has been predicted for the last 20 years and more that the crop would be entirely ruined unless it was immediately thinned, but the subsequent history has falsified this as it has so many other predictions in forestry.**
- **Another interesting wood is Revack Wood, most of which consists of a 50-year-old pole stand of pine. The stand was formed by planting and rises to the considerable elevation of 1,450 feet. A feature of the wood was the extremely bad squirrel damage. The stand had never been thinned and contained many dead and dying trees which, together with the squirrel damage, gave the plantation a very ragged, uneven appearance. In spite of this there seems to be sufficient good trees to make a fairly satisfactory final crop.**



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WWII to Present

- **Considerable wartime felling in Strathspey – much post war planting now “mid” rotation**
- **Current stand quality stems from establishment carried out in that period with some pre war stands**
- **Private estates may have more continuity of management but average tenure of a forest manager is?**
- **Change in establishment practices not always embraced (wide spacing and species choice)**





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Ability to Manipulate a Stand for Timber Quality



- Plant spacing, Site type, Site features
- Juvenile wood, Branch size, Branch distribution
- Correct timing of intervention to minimise impact

- Weed control, Fertiliser input
- Secure canopy closure –spacing or later inputs?
- Establishment and immediate post establishment treatment can limit ability to manipulate stand





Beyond All Help!

- Assess potential of stand for quality and ability to produce quality
- Species, Site type. Exposure
- Accept that some stands are irredeemable





Management Practice

- **Marking/pruning no longer commonly practiced**
- **Reliance on skills of machine operator & supervisor**
- **First thin sets the baseline for stand manipulation**
- **Quality determined by Environment & Silviculture**





Thinning Practice

- **Scots pine:**– 4 to 6 thinnings on an 8 to 10 year cycle. Rotation length of 70 to 90 years.
- **Sitka spruce:**- 2 to 4 thinnings on a 6 to 8 year cycle. Rotation length of 40 to 55 years.
- **Generalisation:-**
Depends on variables such as Location, Access, Market, Stability, Growth, Quality, etc.
- **Reasons for Thinning?**
Income – Sawlog Yield – Stand Quality – Habitat – Age Class Diversity.
Butt diameter in later thinnings can be over the market's preferred maximum.
- **Reasons for Not Thinning?**
Cost – Quality - Access



First Thinning



- P1976 Scots pine with supplementary regeneration
- Thinned 2007, 31 year old, small diameter
- Fencing market, Easy access, Well stocked
- Comparisons with concerns in 1933 article



- Average price still low
- Transport costs a major factor
- Distance from markets



Environmental Factors



- **Deer, Squirrel, Weather**
- **Can be modified by thinning, depending on % damage**
- **BUT effect on finances of operation**
- **Will damage continue?**
- **Assess future quality of stand**





Silvicultural Factors

- **Harvesting damage**
- **Insects, Deadwood, Growth impacts**
- **Thinning intensity**
- **Crop mixtures**
- **Rotation length:- Stability, Diameter, Age Class Diversity, Quality**





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And Next!

- Clearfell or LISS?
- 200ha Scots pine Identified for LISS at Cullen.
- Spruce Mainly Clearfell for Stability & Quality
- 3,300ha Mainly Scots pine in Strathspey, 30-60 years old LISS preferred but.....
- Regenerate and/or Enrichment Plant?
- Site Type, Vegetation, Deer Control, Fencing & Grouse?
- Stocking Density & Future Crop Quality





But if it All Goes Your Way?



- High proportion of Sawlogs
- Good yield and potential income, warm glow of job well done
- **BUT** Does the current market pay sufficient premium for quality?
- Or reward a Laissez faire attitude to stand management?
- Should grading technology play a greater role?





SUMMARY

- **Establishment practice greatly influences the ability to produce quality through stand management**
- **Accept that not every stand will be able to produce high quality timber and target resources accordingly**
- **Stand management through thinning (where possible), particularly engaging skilled contractors with good supervision is vital**
- **Changing ownership patterns and job mobility will limit continuity of management in many cases**
- **Environmental and silvicultural factors may reduce your ability to maximise quality**
- **This does not let you off the hook! The issues faced are still those which have taxed generations of foresters**
- **Grow for quality as the norm but remember you have to market the rest too**
- **Our forebears were adept at maximising yield by grading. Technology has its place in assisting recovery to maximise yield from stands, hopefully recognising quality with an appropriate premium**