



Community  
Woodlands  
Association

# **NORTH WEST MULL COMMUNITY WOODLAND CO LTD**

## **Essential Forestry Skills: Planning & Carrying Out Woodland Thinnings**

20<sup>th</sup>- 22<sup>nd</sup> February 2009 at Dervaig Church Hall

& West Ardhù Woodlands, Isle of Mull

## INTRODUCTION

### Invitation:

**Essential forestry skills: Planning & carrying out woodland thinnings** course to be held at Dervaig Church Hall, Isle of Mull and in the nearby community woodland at West Ardhu on February 20<sup>th</sup>, 21<sup>st</sup> & 22<sup>nd</sup> 2009. This event will offer another great opportunity to network, highlight and discuss common issues and concerns, share your skills and experiences, and learn from the inspirational work of others.

This learning and networking opportunity is aimed at members of community woodland groups who are planning, supervising or directly carrying out thinning operations in community woodlands.

### The objectives of the course are:

- To encourage participants to consider the advantages of thinning operations for future timber quality, increasing yields, and ensuring a regular wood supply;
- To provide participants with the skills to plan, cost and implement a legal and safe thinning operation within their community woodlands;
- To support NWMCCW volunteers to develop the thinning trials undertaken in West Ardhu.

The course will introduce the different types of thinning, placing them in the context of continuous cover forestry approaches to silviculture. At the stand scale (ie in a restricted working area of the forest), there will be an opportunity to work in small groups to plan a conifer thinning, select and mark trees for removal, and estimate the volume removed. There will be practical sessions focusing on small-scale motormanual (chainsaw) felling and different types of mechanized extraction (winch & forwarder). Participants will also get the opportunity to consider planning thinnings at the forest management unit scale and to identify potential sites for further thinning. Participants will also learn the basics of how to assess sawlog timber quality in standing trees. There will be a mixture of presentations from forestry experts, practical site visits and exercises, and open discussion, all in a very practical two days!



**Training and various presentations & demonstrations will be carried out by:**

- Dr Jens Haufe, Learning & Development, Forestry Commission.
- Grant Holroyd, Knoydart Forest Trust
- Jake Willis, Community Woodland Association
- Ian Hepburn, Development Manager, North West Mull Community Woodland Co Ltd
- Matthew Reade, Director, North West Mull Community Woodland Co Ltd
- Helen Watt, Woodland Officer, Forestry Commission Scotland
- Robin Sedgwick, Crannich Farm

**PROGRAMME OF EVENTS:**

**Friday 20 February**

- 1800 Registration & collect delegate packs at Dervaig Church Hall
- Introduction to North-west Mull Community Woodland Company projects.
- Presentation by Ian Hepburn, Development Manager.
- 2000 Dinner at Bellachroy Hotel, Dervaig for off island participants and trainers.

**Saturday 21 February**

- 0900 Welcome
- Dr Jens Haufe** (Forestry Commission Learning & Development)
- Continuous cover forest management: what is it?
- Setting silvicultural objectives: transformation to simple and complex structures
- Stand appraisal
- 1030 Tea coffee
- 1100 **Dr Jens Haufe**
- Approaches to thinning: pros and cons
- Helen Watt** (Woodland Officer, Forestry Commission Scotland)
- Legal requirements
- 1230 Lunch at Dervaig Church Hall
- Feedback wall – share a learning point from the morning session
- 1330 Tractor-trailer and tractor-winch extraction demos
- Grant Holroyd** (Knoydart Forest Trust)
- Grading logs
- Dr Jens Haufe, Grant Holroyd, Jake Will** (CWA)
- Practical thinning exercise: selecting, marking and estimating volume removed
- 1700 Afternoon session finishes
- 1930 Dinner at Bellachroy Hotel for all delegates
- Networking Session for all delegates and trainers

## Sunday 22 February

0930 **Jake Willis and Matthew Reade** (NWMCWC)

- Alpine tractor and woodmizer demo, West Ardhu

### **Grant Holroyd**

- Pros and cons of small machines for extraction and processing
- Standing timber visual quality assessment exercise  
1245 Lunch at Calgary Beach

### **Jake Willis and Dr Jens Haufe**

- Site visit to Langamull to discuss forest planning
- Forest management unit level exercise on CCF  
1500 Tea & coffee. Final round-up of key learning points & feedback.  
1545 Depart for 1625 Fishnish-Lochaline and 1700 Craignure-Oban.

### Saturday Morning:

Classroom based session held in Dervaig Church Hall (NWMCWC temporary head quarters)

Dr Jens Haufe led the presentations covering:

Continuous cover forest management: Q: what is it? A: Continuous and Uninterrupted maintenance of the forest.

### Pros and Cons of CCF

PROS	CONS
better sustainability	higher level of skills and knowledge required
higher stability	not equally suitable for all species
potentially higher diversity	stability requirements may clash with volume production and/or timber quality
target diameter harvesting	transition period CF ⇒ CCF
balanced cash flow	temporary decrease in harvested volume
growing capital maintained at all times	limited options for transformation due to low stability
lower risk	longer production period
greater flexibility	
lower costs of stand establishment, tending	

**Apart from favourable conditions, what else do you need for CCF?**

- a clear strategy and detailed programmes
- infrastructure (e.g. access, permanent extraction racks etc.)
- instruments which put policy into practice (e.g. grants)
- skilled labour and team work (communication, feedback)
- information and training
- sound theoretical basis:
  - ecology of species
  - local site conditions
- suitable tools (inventory and monitoring systems, F tree concept, stability indicators, harvesting and regeneration systems)

**Why thinning?**

- steer species composition
- select and promote trees with desirable qualities
- adjust stand density to the requirements of individual trees
- regarding growing space, light, nutrients etc.
- develop desired tree/stand qualities (e.g. individual tree stability,
- vertical stand structure
- establish and promote natural regeneration
  - optimise stand volume production
  - How does thinning work?
  - How much maths is needed?
  - What makes a thinning?
  - Thinning and wind risk
  - Getting things right
- Setting silvicultural objectives: transformation to simple and complex structures
- Stand appraisal
- Approaches to thinning: pros and cons

**Helen Watt** briefly discussed the legal responsibilities relating to felling and thinning licences. Guidance and application forms are available: <http://www.forestry.gov.uk/forestry/infd-649ecg>

**Risk Assessment**

In advance of any forest operations a risk assessment must be carried out. In advance of this weekend's course the attached Risk Assessment Form was created.

**Saturday Afternoon:**

Participants assembled in a compartment of 25-year old Sitka spruce adjacent an access road in the West Ardhu community woodland. NWMWC volunteers had recently started thinning a stand of a

couple of hectares. This offered participants the chance to consider a range of approaches to thinning, including selective thinning, line thinning and group clearfelling, as well as bench felling for faster, more ergonomic snedding. The reason for having several approaches within a small stand is that the area had been used for a number of chainsaw courses with different trainers advocating different methods. The produce had also been cross-cut into a range of sizes on site, which provided another discussion point regarding extraction and the importance of knowing what machinery would be used to get the timber to roadside when planning the thinning operation at the outset.

To illustrate the extraction issue, the afternoon session included a machinery demo:

- a 4WD agricultural tractor hitched to a 15T timber trailer and crane: this was operated by Mull-based woodchip processor Robin Sedgewick; the combination was not ideal for such a wet site and in fact Robin had previously warned that extraction would be preferable in dry weather or using a driven forwarding trailer (unfortunately not available on Mull);
- a 4WD agricultural tractor with a PTO driven 3.5T winch: this was operated by Jake Willis on behalf of owner Morvern Community Woodlands; the relatively inexpensive winch (£1100) was used for whole tree extraction to roadside and illustrated the advantages of line thinning (for a straight line pull) with tractor-mounted winches for small-scale thinnings, where bringing in a dedicated forwarder to pick timber up from the racks is not economically viable.
- A 1.6T tirror winch: this was operated by participants to demonstrate the value of speed if an operation is going to be in any way economic. Manual winching or carrying produce to the ends of racks only make sense for specific high value logs or individual windblown trees. Various other petrol winches such as the Culpey, Capstan and chainsaw winch were discussed, noting they have advantages of tiffors but set up time and cable/rope speed reduce their value for larger volumes of low value thinnings.

In parallel with the extraction demo, Dr Jens Haufe covered a number of the concepts presented in the morning session, discussing approaches to tree selection, while Grant Holroyd talked about grading logs at roadside for different end uses and also demonstrated how Knoydart Forest Trust use a chainsaw to ring-bark selected trees as a way of drying thinnings standing.

The final part of the outdoor session was spent on a tariffing exercise. Dr Jens Haufe introduced the use of circular plots as (0.01 hectare in this case) as a means of evaluating the volume of timber per hectare then marking a crown thinning and, using a relascope, estimating the percentage that would be removed in each thinning cycle, based on the marginal thinning intensity (70% of the mean annual increment taken annually). He explained the use of diameter tapes, clinometers and relascopes before participants carried out their own plots and top height measurements, following Forestry Commission 'blue bible' guidelines.

The results of the three plots were not representative given the limited data, participants lack of expertise with a relascope, and the poor light conditions. However, they gave participants an indication of the amount of timber in the stand (e.g. 300-500 cubic metres) and the amount to mark for thinning at year 25, year 30, and so on, and put across the need to do some fairly basic mensuration prior to starting a thinning operation. A point made subsequently by one of the

participants was that marking thinnings for chainsaw felling and winching along racks may by necessity be a little less selective than the ideal presented in the exercise, on account of needing clear lines to fell into. In this instance, thinning in a fish scale pattern is appropriate if the same plot-based mensuration is applied first and lines are chosen to favour future crown development and weed out sub-dominant trees.

### Sunday Morning:



Participants gathered in a different part of West Ardhru community woodland, where NWMCWC are planning a forest school shelter and barbecue area. Grant Holroyd led the morning session, introducing a number of practical forestry concepts through a question-answer approach using surrounding examples to illustrate the concepts. This initiated a lively discussion, with input from Dr Jens Haufe and others. The discussion included:

- **Timber quality:** what are the pros and cons of edge trees from a timber perspective? How do we identify a spruce from a fir? Is Douglas Fir a real fir? How can you tell a sycamore or any other Acer in winter? What timber qualities does spruce have? What standard lengths does the market want? What do the qualities of individual trees within the stand, e.g. kinks at given heights, tell us about stand history? How and when do you prune hardwoods? Is Sitka spruce the best species for this flat fertile site?



- **Archaeology:** it is important to know what is there before felling; our forefathers usually chose the drier, better sites for houses, as evidenced by the larger spruces growing out from the ruins.
- **Windblow:** influence of soil depth and iron pans on rooting; one of the reasons why ploughing was abandoned is the limiting effect of the furrow on root development and hence stability; the general principle of leaving windblow alone where possible to act as a buffer against further blow.

Grant then led a discussion around the Woodmizer LT40 bandsaw mill, owned by NWMCWC and several local company members and operated for the demo by Matthew Reade. The participants considered the potential markets for timber on the island (e.g. firewood stores, agri sheds), discussed efficient working practices (e.g. you only want to handle each piece of wood once as it comes off the mill), considered how to use the slabs for firewood or cladding, and the value of having a good, preferably covered worksite with ready access to stacked logs.



Jake Willis gave a further demonstration of the Carraro alpine 48 HP tractor winching some larger 4.8 metre logs over half a tonne in weight with ease. Grant led a final discussion for the morning on the pros and cons of different forestry machinery, including quads and trailers, alpine tractors, and larger agri tractors in forestry situations. The alpine tractor has a number of advantages, including cost (£8000+ new); weight (at 1400 kg, the Carraro can be towed to site behind most larger 4x4s); manoeuvrability (thanks to articulation, though modern rigid tractors also have very tight turning circles); high power/size ratio for winching/chipping/etc.; and the ease of jumping on and off as with a quadbike. The disadvantages compared with large agricultural tractors used in forestry were poor ground clearance and limited off road capability and loss of traction on muddy ground, particularly when used for uphill extraction with a timber trailer. The discussion also covered whether to buy machinery or hire it in, with the general feeling that hiring in a machine with an operator is the most sensible option, where possible.



The participants and trainers had lunch on a windswept Calgary beach and finished the outdoor sessions with a brief visit to Langamull community woodland to discuss NWMCWC's plans for harvesting and roading. Participants found it useful to see a mature stand many years beyond the thinning window and to consider the challenges faced by NWMCWC to get road access and get the timber to market before large-scale windblow sets in.

**List of Delegates/ Trainers:**

First Name	Surname	Group or Organisation
Tom	Addy	NWMCWC Director
Chris	Baker	NWMCWC Director
Basil	Barton	NWMCWC member
Andy	Bunn	Dunnet Forestry Trust
Michelle	Cowe	NWMCWC Administrator
Adam	Dawson	NWMCWC Director
Blair	Duncanson	Craignish Community Company
Ann	Evans	NWMCWC Director
Janet	Evans	NWMCWC member
Dr Jens	Haufe ( Trainer)	Forestry Commission Scotland
Ian	Hepburn	NWMCWC Development Manager
Grant	Holroyd ( Trainer)	Knoydart Forest Trust
Jill	Hooper	ABC Community Group
Jamie	Mc Intyre	Sunart Oakwoods Initiative& CLU
John	Morrison	NWMCWC Director
Colin	Morrison	NWMCWC Director
Andy	Mortley	NWMCWC Director
Peter	Pinnington	NWMCWC member
Peter	Pritchard	ABC Community Group
Tony	Proud	NWMCWC Director
Matthew	Reade	NWMCWC Director
Andy	Robinson	NWMCWC member

Gary	Servant	ABC Community Group
Aly	Taylor	NWMCWC Director
Heather	Waller	NWMCWC member & Forest Schools
Helen	Watt (Trainer)	Forestry Commission Scotland
Brian	Wiles	Craignish Community Company
Jake	Willis (Trainer)	CWA
Ania	Zwozdiak	Craignish Community Company

**Course Feedback** as attached.

Report of the course sent to Oban Times:

### **Community working together for sustainable forest future**

Recently a group of all ages and abilities went back to school in the forest. Learning why and how to thin a forest, how to get the cut trees out and how to turn them into useful building timber. These timbers will be used to build a shelter in the woods to establish a Forest School for local children.

The North West Mull Community Woodland Company (NWMCWC) hosted the weekend long course in partnership with the Community Woodlands Association (CWA), which attracted over 25 participants from Mull and other community woodlands from as far afield as Thurso.

Ian Hepburn (Development manager NWMCWC) was overwhelmed by the turnout, commenting, "How encouraging it is to see so many directors and members of the company attempting an understanding of forest management, and taking such a hands on approach." Saturday morning was spent in Dervaig Church hall, benefiting from the expertise of Dr Jens Haufe (Forestry Commission Learning & Development). He led the group through the complex mathematics and mysterious acronyms that can make forest science seem as impenetrable as an unthinned spruce forest. The wet afternoon passed quickly in the forest learning about; measuring trees, which ones to select for thinning and watching winches and cranes extracting the timber. When well implemented, thinning leaves fewer good quality trees which will grow more and, crucially on the west coast of Scotland, remain more stable in the long run. It can also provides income from the harvested trees, before the end of the forest rotation.

On Sunday morning Matthew Reade demonstrated the use of the Woodmizer; a portable bandsaw that converts low value logs into valuable timber. Its name is based on its frugality, a narrow blade minimises sawdust waste and being portable you can take the saw to the trees. This reduces transport costs, compaction and carbon footprints; all the wood waste can be left in the forest to rot down and feed the soil. Matthew said, "this saw is essential for supplying timber locally, and the sustainable management of our woodlands. It is also available for hire so that other woodland managers can benefit from producing their own timber."



Matthew demonstrates use of the woodmizer

The Forest School that will benefit from the donated timber is part of a rapidly expanding national network that takes an innovative educational approach to outdoor play and learning. Aiming to encourage and inspire individuals of any age through positive outdoor experiences.

This course brought together a diverse group with a shared purpose, and exemplified a community who are trying to “meet the needs of the present without compromising the ability of future generations to meet their own needs.” (Brundtland Report 1987)

The course was funded by The Community Woodland’s Association, Scottish Government Skills Development Scheme, Robertson Trust and Hugh Fraser Foundation. North West Mull Community Woodland would welcome enquiries relating to hire of their woodmizer by email:

[michelle@nwmullwoodland.co.uk](mailto:michelle@nwmullwoodland.co.uk)

or telephone 01688400600 [www.nwmullwoodland.co.uk](http://www.nwmullwoodland.co.uk)

### **Acknowledgements**

Thanks to staff, Directors and members of NWMWCW for their attendance, help and support. Diane Campbell & Jake Willis of CWA for all their help in making this event happen. And To Robin Sedgwick of Crannich Farm for coming along with his tractor & trailer to extract timber. Thanks also to the trainers Dr Jens Haufe of Forestry Commission, Helen Watt of Forestry Commission Scotland & Grant Holroyd of Knoydart Forest Trust and to Matthew Reade and Aly Taylor again for additional felling in advance of the course and preparation & siting of the woodmizer. And to Donald Kennedy of Organic Trees for his felling work prior to the course. Thanks to all the delegates who travelled from all over Scotland and those living locally. Without the funding received from the Scottish Government Skills Development Scheme, Robertson Trust, and Hugh Fraser Foundation, HIE & Community Land Unit the course would not have been possible. So thank you to all the funders involved and lastly but not least thank you to the Community Woodlands Association.

