



NORTH WEST MULL COMMUNITY WOODLAND CO LTD

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

**20th- 22nd February 2009 at Dervaig Church Hall
& West Arduh 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 20th, 21st & 22nd 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 NWMCWC 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 (NWMWC)**

- 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 (NWMWC 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. NWMCWC 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 tirfor 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 tirfors 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 Ardhu community woodland, where NWMWC 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 NWMWC'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 NWMWC 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	NWMWC Director
Chris	Baker	NWMWC Director
Basil	Barton	NWMWC member
Andy	Bunn	Dunnet Forestry Trust
Michelle	Cowe	NWMWC Administrator
Adam	Dawson	NWMWC Director
Blair	Duncanson	Craignish Community Company
Ann	Evans	NWMWC Director
Janet	Evans	NWMWC member
Dr Jens	Haufe (Trainer)	Forestry Commission Scotland
Ian	Hepburn	NWMWC Development Manager
Grant	Holroyd (Trainer)	Knoydart Forest Trust
Jill	Hooper	ABC Community Group
Jamie	Mc Intyre	Sunart Oakwoods Initiative& CLU
John	Morrison	NWMWC Director
Colin	Morrison	NWMWC Director
Andy	Mortley	NWMWC Director
Peter	Pinnington	NWMWC member
Peter	Pritchard	ABC Community Group
Tony	Proud	NWMWC Director
Matthew	Reade	NWMWC Director
Andy	Robinson	NWMWC 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

or telephone 01688400600 www.nwmullwoodland.co.uk

Acknowledgements

Thanks to staff, Directors and members of NWMWC 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.

Feedback from delegates attending NWMCWC Essential Forestry Skills: Planning & Carrying Out Woodland Thinnings

	CWA	Web	My group	CES	Work
How did you hear about this event	3	0	13	0	0

	V Poor	Poor	Fair	Good	V Good
Location	0	0	1	3	12
Organisation	0	0	1	4	11
Catering	0	0	1	4	11
Facilities	0	0	1	4	11

	Yes	Partly	No
Did the event deliver your expectations	15	1	0

How could this be rectified

The schedule could have had less dead time	1

Why did you take part / what benefits did you gain

to understand the logic and process of thinning	7
it provided an insight into the many strategic decisions we need to make	1
the course was relevant to NWMCWC are where we are at present	1
Education in silviculture & forest management	6
Networking & Encouragement	10
learning about opportunities for community groups to manage commercial soft woods	1
Sharing experiences	6
The importance of planning	4
Knowledge of extraction & processing	1
To gain experience to utilise in own forest	1
CCF may be an alternative to clear fell	1
More able to make informed decisions	1

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What will you do with the experience/skills gained

apply them to own project	1
contribute to the debate on the strategic decision making within group	2
revisit FDP consider different options	1

Feedback from delegates attending NWMCWC Essential Forestry Skills: Planning & Carrying Out Woodland Thinnings

put into practise practical skills	6
improve my skills in order to take a more practical role in the group	1
Communicate with group and plan the project	1
Share expertise learned with group	1
Maintain links made this weekend	1

Yes	No
16	0

Would you recommend such an event to others

If yes, why do feel it would be beneficial

the realities of large scale softwood forestry can be understood	
topics covered can be tailored to suit	
a good learning opportunity for non foresters	
could provide legal & practical learning & planning projects	
sharing of knowledge & skills	

If no, what reasons would you give

No replies

What should CWA / NWMCWC do next in relation to this course?

Practise as a group in the forest	
A woodmizer course	
A chainsaw course	
Support other communities to promote the benefits of community ownership	
Assist with sharing links with other groups	
Further training in woodland management	
Annual gathering and ceilidh	

Community involvement in PAWS on National Forest Estate Clunes 2010?

Other comments

Excellent networking opportunity	
Was a pleasure to have 3 trainers that are passionate about their work. Thank you	
Very best of luck in the future and hope it all works out! Willing to help if I can.	
I have thoroughly enjoyed learning so much & to see an operation in practice.	

NWMWC – EVENT RISK ASSESSMENT

Title	Training Event			Date of visit:	20, 21 and 22 Feb 2009	Time:0900-1700
Location:	West Ardhu and Langamull Forests, Dervaig, Isle of Mull			Number in group:	
NWMWC staff present:	Michelle Cowe & Ian Hepburn			Pre-visit site check:	20 Feb 2009 9.30 am	
Grid Reference	NM 429 520			Safety supervisor: Demo stewards:	Ian Hepburn & Michelle Cowe	First aider: Grant Holroyd & Heather Waller

The Hazard	Location of Hazard	Who	Level of Risk	Controls	Implementation/Monitoring
1. Live phone line and telegraph poles	On other side of road from worksite	Operator	Med	<ul style="list-style-type: none"> Operators have identified location of line prior to commencing work No tree work or stacking within 1 tree length plus the vicinity zone as applies to powerlines – see AFAG 503, safe zone identified on site 	<ul style="list-style-type: none"> AFAG 503 read and safe working zone identified on the ground
2. Felling trees	Felling site	Operator	High	<ul style="list-style-type: none"> AFAG 301-34 read Trained and NPTC certificated operators Minimum 2 persons on site at all times Appropriate PPE worn Second person on site 2 tree lengths away or more than 2 times length of produce in case of snedding/cross-cut Warning signage to be used on site First aid kit with large wound dressing carried Use 2 banksmen for temporary road closure if felling within 2 tree lengths of the forest road 	<ul style="list-style-type: none"> Supervisor to check certification, PPE, signage, first aid kit prior to commencing work Operators familiar with AFAG 301-304
3. Use of Woodmizer	Restricted part of site	Operator	High	<ul style="list-style-type: none"> Trained operator to use equipment Appropriate operator PPE: gloves, ear protection, steel toe-capped boots. Signage to be used on site. <p>For public demonstration:</p>	<ul style="list-style-type: none"> PPE in place Stewards brief and cordon in place prior to demonstration Signage in place

NWMWC – EVENT RISK ASSESSMENT

		All	Med	<ul style="list-style-type: none"> • Danger zone cordoned off with red-white tape • Ensure steward maintains the public outside danger zone while saw is operating. • Switch off saw and stop operations if any person crosses the cordon 	
4. Use of forestry tractors and implements	Restricted part of site	Operator	High	<ul style="list-style-type: none"> • AFAG 501, 502, 503 read • Trained operator • Appropriate PPE: steel toecaps, gloves (for winch work), helmet, ear protection. • Ensure stewards have appropriate PPE and are outside danger zone while tractor is operating. • Signage to be used on site (at all points of entry to operating areas). • Timber stacks no more than 2m high; in designated areas; signage 'do not climb on timber stacks'. • Tractor & implements properly maintained • Weather conditions suitable for work • Follow PUWER and LOLER Regulations and appropriate AFAG Guides for equipment used • Planned extraction routes. ROPS. • Designated storage areas for fuel/ oil; spill kits; fire extinguishers • Stop work if person or vehicle enters risk zone – defined as 	<ul style="list-style-type: none"> • PPE in place. • Risk Zones established (15 m+ with most forestry cranes, check crane specifications) • Stewards ensuring the public outwith Risk Zones
5. Slips, trips and falls	Restricted part of site	All	M	<ul style="list-style-type: none"> • Check appropriate level of footwear worn • Some low level branches and roots to be aware of. 	<ul style="list-style-type: none"> • Ensure all participants are wearing appropriate footwear. Explain about forest environment etc in introductory talk. • First aid kit in place.
6. Bad weather	Whole site	All	M	<ul style="list-style-type: none"> • Consider cancellation in very severe weather. 	Ensure all have appropriate footwear and clothing – ultimately parent's or guardian's responsibility
7. Traffic in and on approach to car park	Car park	All	M	<ul style="list-style-type: none"> • No events within car park 	<ul style="list-style-type: none"> • Ensure signage in place prior to any public event.
8. Volume of participants	Whole site	All	M	Community Woodlands steward to direct traffic if car volume requires it. Community Woodlands committee to keep eye on this.	
Telephone numbers (office hours) NWMWC Office: 01688400600 Doctor: 01688302013 Or Dunaros Hospital: 01680300392			Emergency services telephone numbers and mobile phone carried. Full first aid kit on site at car park.		

Assessment by: MICHELLE COWE, Signed:

Date: Copied to NWMWC Chairperson, Colin Morrison, Signed: Date :.....

NWMCWC – EVENT RISK ASSESSMENT