

CWA SKILLS DEVELOPMENT SCHEME

Essential Forestry Skills : Sawlog Extraction & Processing in Small Woodlands.

Hosted by Kirkhill and Bunchrew Community Trust

Introduction.

Kirkhill & Bunchrew Community Trust have been managing Upper Reelig Wood with the agreement of FCS for 10 years. For the last two years they have aspired to progress to extracting timber sized trees and processing these on site. The skills development scheme has been an outstanding opportunity to acquire the skills for this advance. With the new skills acquired through the course KBCT is confident that it can now manage the woodland in a financially self-sustaining way with income from the sale of sawn timber.

Delivery of the course was a co-operative effort involving all members of the KBCT Woodland Group which was a significant benefit towards enhanced group cohesion.

Networking between delegates was a valuable additional benefit of the course.

Key Learning Points.

- The importance of good planning and group engagement to deliver such a training event.
- Methods of extracting sawlogs with a Tractor/Winch combination and Iron Horse.
- Methods of moving sawlogs with hand tools.
- Methods of milling logs moved with hand tools so that they can be processed under the canopy by the stump with the Lucas sawmill.
- The comparison of the strengths and weaknesses of the Lucas mill, the Woodmizer mill and the Alaskan chainsaw mill.
- The volume of timber handled by the mills in a full days work before the course day.
- The requirements for sawn timber by architects and furniture makers.
- The behaviour of sawn timber.
- The behaviour of timber as it dries.
- Methods of drying timber to yield a good quality product.
- The health and safety implications of felling, handling and milling timber.
- Methods of assessing risk and planning to minimise this.

Summary of Presentations

Neil Sutherland – Architect. Timber required by Architect.

Neil explained that the species available for construction in the Highlands were Spruce (70%), Scots Pine (15%), Douglas Fir / Larch (2%).

The common species are good for carcassing and may need to be used in larger dimensions where their mechanical properties are inferior. Better quality species such as Douglas Fir can be used in smaller sections.

Douglas Fir is valued for its dimensional stability and Larch is durable and hence particularly useful for cladding.

Douglas Fir and hardwoods are valuable for flooring and finishings.

Alastair Munro – Furniture maker. Timber required by Furniture maker.

Alastair listed the tree species of principal interest to furniture makers – Oak, Ash, Sycamore, Elm, Scots Laburnum, Gean, Beech, and Scots Pine, Douglas Fir, Larch.

Most timber is through and through sawn but some makers prefer quarter sawn material for its better dimensional stability despite its increased cost of production.

Stable knots are acceptable and some loose knots can be stabilised with glue. Some makers prefer waney edged boards for aesthetic reasons.

Wide boards lead to least wastage and lengths of 2-3 metres are preferred. Average thicknesses required are 35mm, 60mm, and 85mm.

Correct moisture content is vital for furniture kept in centrally heated houses – 8-10%.

Ivor Davies. Principles of milling, stacking and drying timber.

Ivor strongly emphasised the vital importance of achieving the correct moisture content for the purpose for which the timber is intended.

Moisture content is found with a meter that measures the electrical resistance between two points parallel to the grain. Accuracy is very poor at over 24% and below 10% moisture content and is reliable to plus or minus 3% between these. As timber dries water first leaves from within the cells to reach the fibre saturation point at about 30% then as more water leaves the timber alters its dimensions. Air dried timber reaches about 17/18%. Internal joinery needs 10-16%, outdoor cladding 12-18% and finishings in a heated room 6-10%. Failure to achieve correct moisture content leads to disastrous warping, shrinking or expansion.

Air drying is achieved with careful stacking off the ground with stickers between boards. Further drying requires a kiln.

To avoid staining of pale woods they should be felled in winter.

Brian Weaver – economics of small scale timber production.

Brian began by discussing the definition of a social enterprise. This is an imprecise term but broadly involves a business that returns the profit to the essentially charitable purpose for which it is run.

He explained that there is a trend in government towards encouraging the voluntary sector to generate their own income rather than rely on grants. Future grants are likely to be assessed on whether they will enhance the ability of the applicant to become financially self sustaining. A community woodland organisation must develop good entrepreneurial skills to profit by sale of timber. Products should be sold at the full commercial rate. Felling and selling processed timber adds very considerable value to the timber resource in woods.

Annie Griffiths - Health and Safety issues

Annie outlined the importance of assessing the risks to volunteers in carrying out practical procedures in the wood. The accident statistics show that woodland work has significant levels of death and serious injury. She outlined the regulatory framework surrounding safe working practice and suggested how the level of protection needs to be adjusted against the probability and severity of possible accidents.

The importance of realistic risk assessment were discussed and ways of increasing volunteer engagement in the process were considered - both by members taking formal responsibility for undertaking the assessment, and also by them actively working under and supporting its guidance.

Annie described some of the extra health and safety challenges facing community groups undertaking woodland work, particularly when working in those areas with high public usage and encouraged groups working together to develop robust, enabling and realistic guidelines.

Machinery Demonstrations

Alaskan Chainsaw Mill

Alan MacIntosh showed how a small investment leads to a useful mill when a 80/90cc. saw is to hand. This set up is mainly useful for planking logs inaccessible for extraction. It will also cut curved material which is overall too wide for other mills and it will cut very long material in excess of 6 metres which is the usual limit for mobile mills.

Woodmizer Sawmill

James Nairn showed how the woodmizer will cut wide boards rapidly with a narrow kerf. The automated method of turning and positioning logs lead to a high productivity. The Woodmizer and Lucas operators both emphasised the enhanced productivity achieved by lining up logs on bearers and supply of two people to take sawn timber and backs off the mill.

Lucas Mill

Colin Parsons operated the Lucas under the canopy where the woodmizer could not

reach. The logs in this case had been moved into place with cant hooks eliminating the need for log extraction machinery. The Lucas mainly cuts up to 8 inch boards and beams. It has an adaptor to cut wide boards but it does this slowly.

Iron Horse Forwarder.

David Shepherd demonstrated the value of this machine for extracting thinnings and it is possible to move sawlogs in a labour intensive way with it. It can carry about two thirds of a ton.

Tractor / Winch.

David Shepherd and Annie Griffiths showed the value of a 48 hp. compact tractor as a means of extracting logs of up to at least 4.9 metres length and 55cm. dbh. The winch with a 70 metre wire greatly increases the scope for extracting logs selected from the canopy.

Cant Hooks.

David Shepherd and Alan MacIntosh demonstrated how large logs can easily be moved with large cant hooks.

Resources for Future Reference

Forest research Technical Development Branch has published useful information notes on :

- Lucas Sawmill
- Woodmizer Sawmill
- Iron Horse Forwarder
- Compact Tractors and Winches.

Stobart Davies publish the moderately priced book-
The Conversion & Seasoning of Wood by William H. Brown.

Forestry Commission publish:

Sustainable Construction Timber – sourcing and specifying local timber by Ivor Davies
[http://www.forestry.gov.uk/pdf/fcfc152.pdf/\\$FILE/fcfc152.pdf](http://www.forestry.gov.uk/pdf/fcfc152.pdf/$FILE/fcfc152.pdf)

Essential Forestry Skills: Sawlog Extraction & Processing in Small Woodlands

Friday 19th March 2010

Background

KBCT manage a 14 Ha area of mixed broadleaf and conifer woodland at Upper Reelig to the West of Inverness. The woodland is part of the National Forest Estate and managed by the Trust in agreement with the Forestry Commission Scotland. The Trust manages the woodland for the benefit of the local community and to a range of biodiversity, landscape, recreational and economic objectives.

Course Objectives

To discuss and demonstrate how sawlogs can be handled and processed at and near the felling site to produce sawn timber for sale.

A practical based day aimed at:

Members of the CWA managing woodlands who work or are interested in working in a labour intensive way with small scale forest machinery. Machinery being demonstrated will include an Iron Horse, compact tractor/winch, Woodmizer, Lucas and Alaskan chainsaw mills.

Visiting Speakers/ Trainers:

Annie Griffiths – Chair KBCT Woodland Group	Neil Sutherland – Architect
Alasdair Munro – Furniture Maker	Ivor Davies – Timber Technologist
Brian Weaver – CEO, Highlands & Islands Social Enterprise Zone	David Shepherd – Tractor/Winch & Iron Horse Operator
Colin Parsons – Lucas Operator	James Nairn – Woodmizer Operator
Alan MacIntosh – Alaskan Mill Operator	

The Course will cover:

- What the end user of the processed timber is looking for.
- How to move large logs around within the woodland.
- The processing of logs in woodland with mobile milling machinery.
- Stacking and drying timber.
- Generating income as a social enterprise.

Please return your completed booking form to Annie Griffiths as soon as possible and by no later than **Monday 1st March 2010**.

Numbers are limited to 20 and will be allocated on a first-come, first-served basis. The course is open for CWA members only and limited to two people from each woodland member group.

Programme

Venue – the Canteen, Inchmore, by Inverness.

Friday 19th March

9.00 – 9.30	Tea, coffee & registration.	
9.30 – 9.40	Annie Griffiths	Introduction
9.40 – 10.20	Neil Sutherland	Timber required by Architect
10.20 – 10.40	Alasdair Munro	Timber required by Furniture Maker
10.40 – 10.55	Tea & coffee break	
10.55 – 11.55	Ivor Davies	Principles of milling, stacking & drying
11.55 – 12.25	Brian Weaver	Economics of small scale sawn timber production
12.25 – 12.45	Annie Griffiths	Risk Assessment & Safety
12.45 – 13.30	Lunch	
13.30 – 14.00	Travel to Upper Reelig Community Wood. Warm and waterproof clothing together with stout walking boots are essential.	
14.00 – 16.30	Log handling , milling and stacking demonstrations	
16.30 – 17.00	Discussion, tea & coffee in wood	
17.00	Depart	

Joining Instructions

The morning session will take place in the Old School Canteen, Inchmore about 7 miles West of Inverness on the A862 towards Beauly. The afternoon session is 4 miles away at Upper Reelig Community Wood. Details of location and accommodation will be sent to applicants.

Expenses:

Delegates expenses for travel and any necessary accommodation (those travelling long distances) are refundable as set out in booking form below.

This event is supported by the Scottish Government Skills Development Scheme, Robertson Trust, Hugh Fraser Foundation, Forestry Commission Scotland and the HIE Community Land Unit.

BOOKING FORM

Name(s):
CWA Member Group / Organisation:
Designation (if any e.g. director, chair, job role):
Address:
E-Mail:
Telephone:
Are you attending as a member of a CWA Group: Yes/No?

<p>Are you able to offer other participants a lift? Yes/No From</p> <p>Are you looking for a lift to/from the event? Yes/No From</p> <p>Note that travel and any necessary accommodation expenses of CWA members will be reimbursed. Please endeavour to travel share or use public transport where possible.</p> <p>Please estimate your mileage cost (£0.225/mile) or train/bus cost here: £</p>

Lunch, tea & coffees will be provided. For catering purposes please let us know if you have any special dietary requirements:

Please also advise if you have any visual, physical, language or other requirements:

PLEASE RETURN this form by 1st March 2010 to:
Annie Griffiths, Windy Ridge, Kirkhill, Inverness IV5 7PW. Or by email:
craggach@doctors.org.uk
Tel 01463 831600 with any queries.

Neil Sutherland.

Neil leads a firm of architects that design and build timber buildings. He runs an associated business sourcing and milling local timber.

Alasdair Munro.

Alasdair is an amateur furniture maker who sources his timber, has it milled with mobile mills and dries it himself.

Ivor Davies.

Ivor has had a varied career initially training with John Makepeace the furniture maker. He worked with Highland Birchwoods promoting native broadleaf silviculture for timber production. He is now a research fellow at Napier University where he has developed timber cladding suitable for the Scottish climate.

Brian Weaver.

After a conventional business career Brian became a partner in a small Highland sawmill. He later helped develop a credit union at Alness. He is now CEO of HIE Social Enterprise Zone.

Alan MacIntosh.

Alan is a log builder, timber framer and all round woodsman.

James Nairn.

James undertakes general treework and operates a Woodmizer from his base near Ullapool.

Colin Parsons.

A long time CWA supporter, Colin operates a Lucas mill from Achmore by Stromeferry.

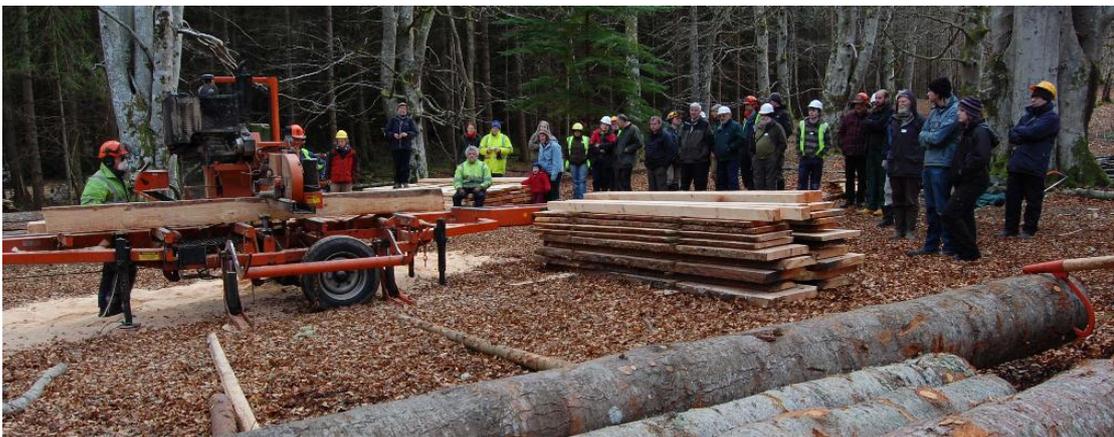
David Shepherd and Annie Griffiths

David and Annie live in and manage their 40ha. wood and are also long time members of the Upper Reelig Community Wood Group.

**Essential Forestry Skills: Sawlog Extraction & Processing
in Small Woodlands
Friday 19th March 2010**

List of Delegates

NAME	REPRESENTING
Shona Amos	FCS – Inverness Forest District
Jim Barr	Abriachan Forest Trust
Anthony Carpenter	Laide and Aultbea Community Wood
Ged Church	KBCT Woodland Group
Bernie Church	KBCT Woodland Group
Samuel Desuignes	French Forestry Student with CWA
Brian Duff	FCS – Inverness Forest District
Alizee Guihem	French Forestry Student with CWA
Renate Jephcott	KBCT Woodland Group
Thomas Kilbride	Applecross Community company
Rob Kinghorn	KBCT Woodland Group
David McGown	The Auchencairn Initiative
Jamie McIntyre	Sunart Oakwoods Initiative
Darren Mackay	The Embo Trust
Donald Maclean	North Highland Forest Trust
Donald Martin	KBCT Woodland Group
Jim Monahan	Woodland Trust Ledmore and Migdale
David Munro	The Embo Trust
Nick Murray	Laide and Aultbea Community Wood
Tom Paterson	KBCT Woodland Group
Donald Oliphant	Raasay House Community
Steve Robertson	North Highland Forest Trust
David Shepherd	KBCT Woodland Group
Jenny Sowter	The Auchencairn Initiative
Alastair Stewart	Sunart Oakwoods Initiative
David Westgarth	Raasay House Community Company
Dean Wiggin	Eigg Community
Chris Williams	Woodland Trust Ledmore and Migdale
Jake Willis	CWA
Antoni Zawadzki	Ladyurd Community Woodland
MILLERS	
Alan Mackintosh	KBCT Woodland Group
James Nairn	
Colin Parsons	



Photos by: Renate Jephcott, Colin Parsons and Annie Griffiths