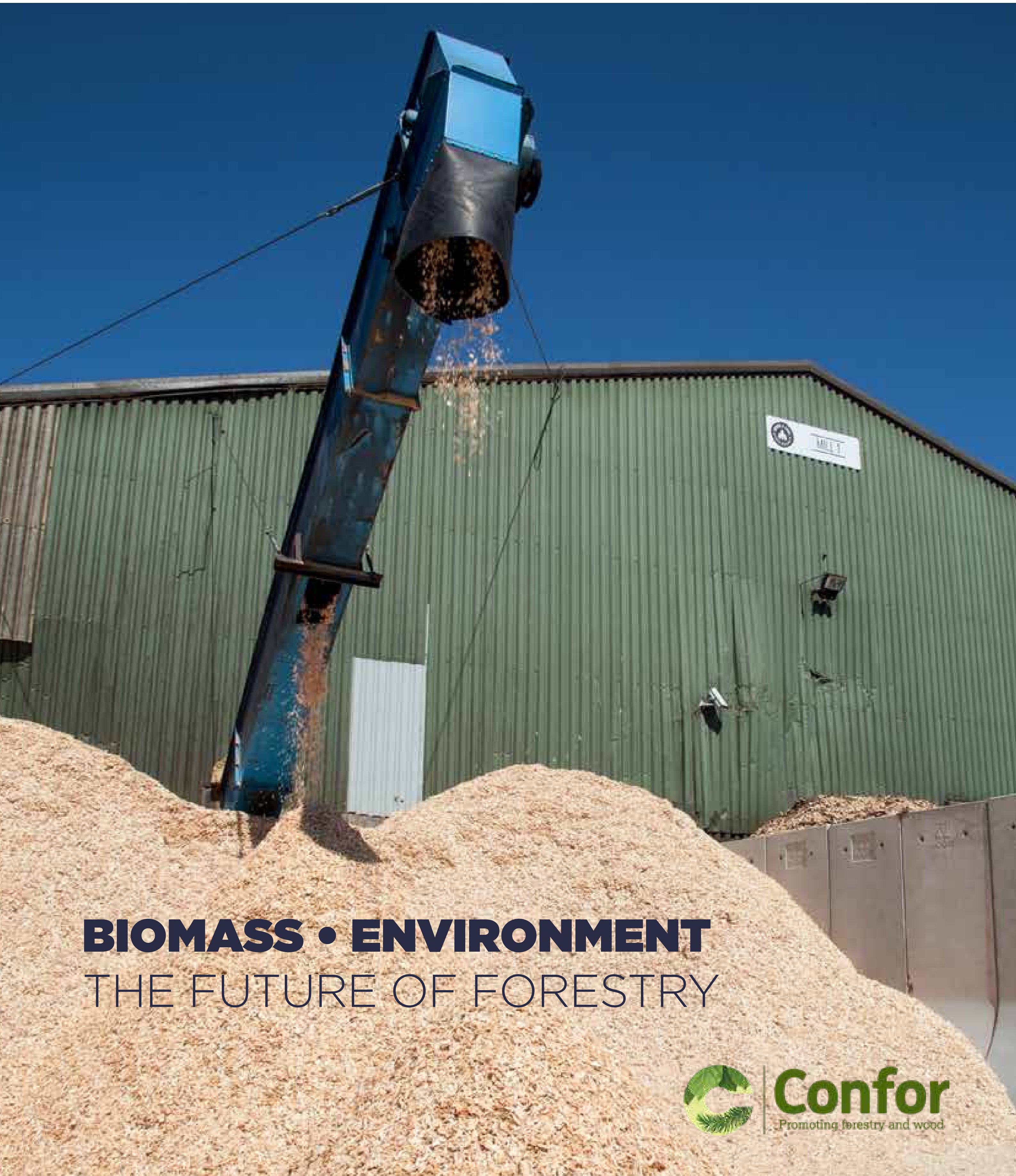
FORESTRY & TIMBER NEWS

June 2018 Issue 87



BIOMASS • ENVIRONMENT
THE FUTURE OF FORESTRY

Confor
Promoting forestry and wood

Confor is a membership organisation that promotes sustainable forestry and wood-using businesses.

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Past issues and articles can be accessed online at **www.confor.org.uk/news/ftn-magazine**

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COVER BIOMASS AT P IRVING & SONS LTD SAWMILLS

PHOTO: S KAISER / CONFOR

On message

STUART GOODALL CHIEF EXECUTIVE, CONFOR

Throughout my time with Confor, I've been repeatedly urged to do more to tackle misinformation about forestry in the media, especially negativity towards conifers.

Our response has been to significantly up our game in sending media-friendly news to various outlets and utilising social media, while all the time linking back to the Confor website which provides not just a wealth of information, but also presents an image of a modern, serious sector.

When launched, the Confor website was shortlisted for an award, as was our campaign around the last Westminster election. Heartening recognition, though I'd rather have actually won those awards!

We also undertake research and prepare reports to underpin the messages we make about the importance of the sector and to help tackle the still widespread misinformation that exists about productive forestry and wood processing. In the coming months we aim to work more with members to amplify these messages.

Other repeated calls from members include requests for market and price information, and for more relevant research and funding for research.

It would be easy to respond and say, "I share your desire, your frustrations, but there just isn't the resources in people and money in Confor to make a step-change". Instead I'd rather seek out ways in which we can make that difference.

I've spoken before about the need for the sector to make the most of the resources in our various representative bodies and to recognise that if we are serious about changing things we need to be serious about the resources we put into it – influencing politicians, officials and the media is a big, big task and other bodies throw far, far more resources into it than we do.

I hope we will make real progress this year in working together better to promote the sector, but without major injections of funds from member businesses how can we fund a step-change in our activities?

Earlier this year I took a cheap flight to Melbourne to visit my daughter, and while I was there I decided to give her some peace from her dull father by visiting local industry bodies and companies. One in particular struck me.

Forest and Wood Products Australia (FWPA) is a not-for-profit company that provides integrated research and development services to the Australian forest and wood products industry. Funded by a statutory levy on timber growers, wood-users and timber importers, it provides high quality, current statistics and market information, supports leading research and promotes the use of wood.

After being given a full overview of its activities and outputs I spent two fascinating hours being shown all the statistical data that FWPA collected and how it shared that information with businesses. I felt like a little boy in a sweet shop with legs too short to reach the sweetie jars.

From the people I spoke to, it's clear that FWPA is highly respected by the industry. My regional counterparts in representative bodies in the state of Victoria welcomed its activities in supporting the sector, even if they were a little envious of the funding it received through the levy system.

I presumed that the levy was an old thing, like the levy boards in the UK, but I was surprised to learn that the Forest Growers Levy dates back to only 2007.

Of course, Australia isn't unique in having a levy system, and it is not a mechanism that is universally welcomed and supported. But, and there's always a but! If we don't do something radical, then we will resign ourselves to incremental improvement.

Is that good enough?

Let's talk about all land use

The UK government has been consulting on policy proposals for how to replace the Common Agricultural Policy (CAP) after Brexit. **Eleanor Harris** reports on Confor's response.

Since before the Brexit vote, Confor has been engaged in discussion with the sector, politicians, and other stakeholders. We have produced analyses of the implications of Brexit for the forestry and timber sector regarding funding, trade, environmental regulations, labour, plant health and land. These can be found on our website along with our policy papers *A Common Countryside Policy* and *Plant Health and Brexit* on our website.

Confor is engaging in detailed discussions around the UK on what might replace the CAP after Brexit. In particular, we issued a detailed response to the UK Government's major Health and Harmony consultation on the subject. Our focus has been to stress that the debate must be about all land uses, not just agriculture. This was reflected in our response, which was prepared after gathering feedback from members, and in a Twitter campaign using the hashtag #woodforpublicgood.

The issue was also discussed at the most recent meeting of the All-Party Parliamentary Group on Forestry, attended by senior Defra officials Guy Horsington and Fiona Harrison.

Confor's consultation response, one of 44,000 received by Defra, has been shared with stakeholders from the forestry sector, politics and a wide range of farming and environmental organisations. It is the latest and most detailed Confor contribution to the Brexit debate. We have produced analyses of the implications of Brexit for the forestry and timber sector regarding funding, trade, environmental regulations, labour, plant health and land. These can all be found on our website in the News section, under the Brexit heading. The consultation response is also in our Resources section, under both Publications and Consultations.

Confor continues to engage with the widest possible range of stakeholders to ensure the forestry and wood voice is heard as the consultation responses are analysed and future policy takes shape.

Confor welcomes

- The proposal to phase out Direct Payments, which disadvantage forestry
- The commitment to excellence in plant health standards
- The commitment to increased productivity and competitiveness in the countryside
- The principles of 'public money for public goods' and 'polluter pays'

Confor asks for...

1 An appropriately named bill

Department for Environment Food & Rural Affairs

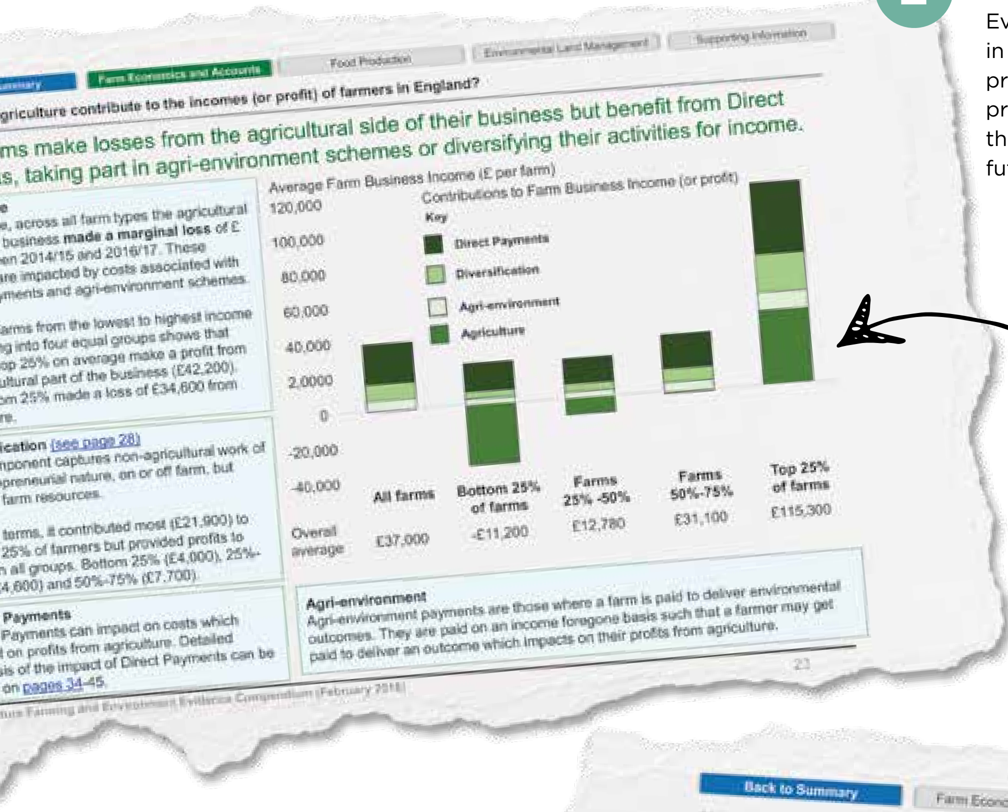
Health and Harmony: the future for food, farming and the environment in a Green Brexit

February 2018

A new statutory framework

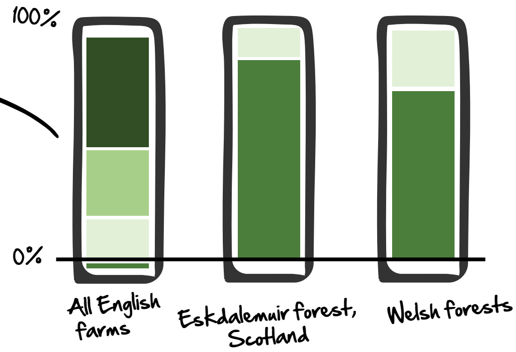
27. The farming industry needs a new statutory framework to allow us to deliver many of the reforms set out in this paper. We will introduce ~~an Agriculture Bill~~ that breaks from the CAP, providing us with the ability to set out a domestic policy that will stand the test of time.

3

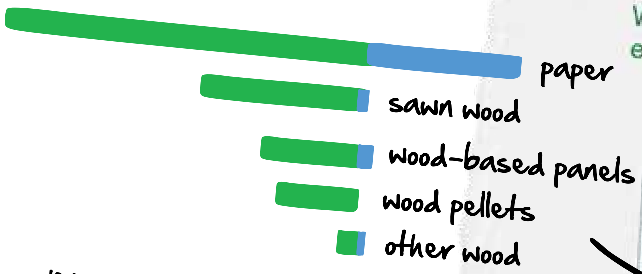


2 Defra evidence compendium

Evidence on forestry and timber, for example in any detailed comparisons of productivity, profitability, employment, trade and professionalism, must be included alongside the other crops and livestock data when future policy decisions are made.



Source of income by percentage, for all English farms (taken from the Defra report), compared to two studies of forestry in Scotland and Wales



If timber products are added into Defra's graph it becomes apparent that the top categories are not fresh fruit and veg but fresh fruit and paper. We also import more sawn wood, wood-based panels and wood pellets than any sort of food other than fruit, vegetables and cheese

Policy must be based on an integrated analysis of current and potential delivery of public goods (carbon balance, pollution, biodiversity, landscape, recreation, culture and community) and look beyond farming to include forestry. Many of the public goods provided by modern forestry, in particular carbon capture, are intrinsic to the production of timber. Provision of these public goods must not be disincentivised by a farm-focused policy which provides payment only for 'additional' public goods. Join the conversation on twitter: #Wood4PublicGood

4 Land use policy must be linked to other policies

5

As many of the decisions taken in England will impact the whole UK, the consultation needs to take place in the devolved administrations as well.

What are others saying in response to the consultation?

Royal Forestry Society
"Although references to forestry in this consultation are welcome, the almost exclusive focus of the consultation on the future of agriculture, belies the evidence that many of the opportunities to meet the government's rural land use policy objectives lie in a larger, more profitable and resilient forestry sector."

Institute of Chartered Foresters
"Most of the wider post-planting benefits that society gains from a forestry programme in the UK are financed from commercial activity and charitable donations. For example, consumers are assured that wood used in the UK comes from sustainable sources through certification schemes developed by international bodies such as FSC and PEFC."

CLA
"The command paper makes no reference to commercial forestry and the potential contribution this could make to remote rural areas. If effectively incentivised and supported with advice there is huge potential for responsible commercial afforestation to compensate for reduced agricultural incomes."

Woodland Trust
"The Woodland Trust strongly welcomes the clear indication that future payments will need to be much more focused on the payment of public money for the delivery and care of public goods. This is an unprecedented opportunity to break down the barriers that have artificially divided farming and forestry for so long, and bring these mutually beneficial areas together through integrated thinking and delivery."

Uplands Alliance
"The Uplands are too often perceived as a contested area [but] the four workshops we held exposed substantial common ground between diverse stakeholders. While farming is the predominate form of land management currently covering 70% of the uplands it is not the only type of land management. Forestry, water provision, carbon stewardship, management for wild game and conservation interests are also important land uses."

What happens next?

The UK government will analyse the consultation responses over the summer, with a view to bringing forward legislation in the autumn.
Meanwhile, Confor will be feeding in to a range of related discussions:

- The Welsh Government is holding a series of stakeholder meetings to discuss land use policy in Wales.
- In Scotland, the future policy framework for farming and forestry will depend on the implementation of the Forestry and Land Management (Scotland) Act recently passed by the Scottish Parliament. It is essential that the new structures facilitate integrated land-use policymaking.
- The Committee on Climate Change are preparing a report on the Health and Harmony proposals over the summer.
- Defra have launched a new consultation on a proposed Environmental Principles and Governance Bill, to ensure environmental protections are not weakened as we leave the EU. Whether future environmental regulation UK-wide or devolved is one of the questions for discussion.
- Confor will be closely engaged in all these discussions over the coming months, to ensure that Brexit does not result in forestry and timber being further disadvantaged in rural policy. Please get in touch with your National Manager or with Eleanor Harris if you would like to find out more or if you have issues you think we should raise.

Join the conversation on twitter with the Defra and Confor hashtags: #FutureFarming and #Wood4PublicGood.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Scottish politicians experience forestry close up

Fergus Ewing with joint James Jones & Sons Managing Directors, Tom Bruce Jones (left) and Ian Pirie (right) at James Jones & Sons in Lockerbie

The positive political climate towards forestry and wood processing in Scotland has been reaffirmed by a series of high-profile visits to Confor members.

Confor met Fergus Ewing MSP, Cabinet Secretary for Rural Economy and Connectivity, in late May to discuss how the new forestry legislation in Scotland will take shape - as it continues its efforts to ensure the Forestry and Land Management Bill supports the modern success of the industry in Scotland.

Mr Ewing recently visited James Jones & Sons plant at Lockerbie during a series of engagements in the south-west. The state-of-the-art site has benefited from high levels of investment and Mr Ewing met joint MDs Tom Bruce Jones and Ian Pirie to discuss the current success of the firm and the wider forestry sector, and plans for future growth.

Further support for forestry and wood processing in Scotland came from Nicola Sturgeon, the First Minister, who unveiled a new manufacturing line at Norbord's manufacturing site at Dalcross, Inverness. She noted that the £95 million expansion was one of the largest single investments made in Scotland, in any industry - and said it demonstrated the vibrancy of the Scottish forestry sector.

Karl Morris, Managing Director of Norbord Europe said the event was "a fantastic celebration of our investment and commitment to Inverness" and added: "It was a pleasure to welcome the First Minister to witness first-hand the positive impact the project is having on the community. The new line will help ensure we continue to be a leader in OSB production by meeting our customers' increasing demand for the product."

Another MSP visiting the Highlands was John Finnie, a Green MSP and member of the Scottish Parliament's Rural Economy and Connectivity committee. Confor arranged a visit to BSW's mill at Fort William to make the link between the modern wood processing sector and Scotland's environmental objectives, including climate change targets.

Mr Finnie said after the visit: "The forestry and timber sector is a bedrock of our rural economy and has a unique character – because more economic activity means more environmental benefit."

Confor also arranged a visit to James Jones' Aboyne sawmill, which recently announced a £5 million investment, by Richard Lyle MSP.

Stuart Goodall, Chief Executive of Confor, said: "These visits are crucial to show politicians the modern, hi-tech and high-value business of forestry and wood processing - and they never fail to be impressed by the quality of the operations and their significance to rural communities."

Karl Morris, Norbord, with Nicola Sturgeon

Confor speaks for sector as timber supply crisis grips

Fast-rising timber prices in the UK have created opportunities and challenges for the forestry and wood-using industry – and Confor has been in demand to explain the complexities of the story to a wide range of different media.

Forestry Commission statistics showed an increase in the price of standing timber of 28.2% from March 2017 to March 2018. Softwood sawlogs increased in price by 20.8% in the six months to March 2018.

Confor said the price spikes reflected a booming wood processing industry and highlighted the need to increase tree planting significantly – to deliver more timber into markets and avoid reliance on imports.

"We are already the world's second largest net importer of timber after China but the UK Government is still missing its modest tree planting targets," said Andrew Heald, Confor's Technical Director, who was interviewed by *Farmers Weekly* and BBC Scotland's *Good Morning Scotland* and *Out of Doors* programmes. The story was also widely picked up across the forestry, farming and general media.

He was able to explain that Confor was working with members and governments across the UK to identify ways to bring more timber to market, stressing that it was crucial that the major growers, including the Forestry Commission and Natural Resources Wales, maximised every opportunity to do this.

Mr Heald said that prices were even higher in some regional hotspots, including Wales and Dumfries & Galloway in southern Scotland – and called for a long-term approach to forestry to secure future supply.

"This is a complex issue for the industry," he said. "While high timber prices are good news for the UK's forest owners, they create real challenges for wood processors who are also having to compete with cheap im-

Continued on p15

Move to establish cross party forestry group for Wales

Early in May Confor organised an introductory meeting with a view to establishing a Cross Party Group for woodlands, forestry and timber. The event was sponsored by Simon Thomas AM and was held in TÐ Hywel, Cardiff Bay by kind permission of the Welsh Assembly.

The purpose of Assembly Cross Party Groups (CPG) is to provide a forum for assembly members from different parties to consider and discuss shared interests in particular subjects. We thought that, as woodland, forestry and timber is a sector that crosses many different policy areas and requires an interaction with a wider range of stakeholders than many other sectors, a CPG provided an opportunity to do that.

So, early evening on 16 May saw Dr Eleanor Harris, Confor policy researcher, Gary Newman of Woodknowledge Wales and myself arriving at Ty Hywel (albeit a little early), to set things up.

Confor's Eleanor Harris gave a historic perspective of what benefits governments want to achieve for their citizens and brought that up to date, linking with the WB&FGA saying governments are still trying to achieve these things. Confor Wales manager Martin Bishop summarised the status of the forestry and woodlands sector at present, touching on supply and demand. Gary Newman of Woodknowledge Wales gave an inspirational presentation of what could be achieved by timber in construction, again linking to WB&FGA and climate change mitigation.

It was unusual to have such a diverse range of participants gathered together, which in addition to the commercial forestry sector and NRW, included Coed Cymru and Llais Y Goedwig (representing community woodlands), Welsh Water, UK Climate Change Committee, Cardiff Metropolitan University, Institute of Welsh Affairs and many representatives from Welsh Government portfolios like Climate Change, Environment & Rural affairs, local housing and Forestry Policy unit.

There was overwhelming support for the concept of a CPG on woodlands, forestry and timber to create links with other devolved administrations across Wales and beyond and the meeting concluded with a resolution to move forward with that.

CONFOR ACTIVITY MAP

FUTURE EVENTS

Royal Highland Show, 21-24 June, Edinburgh
Forestry Day at RWS, 24 July, Llanelwedd
APF, 20–22 September, Ragley

England regional meetings

East England members field day (TBC)
North members field day, Lowther Estate (TBC)
South East members field day (TBC)
Marches members field day (TBC

SFTT regional meetings

North-east 26 September 9 (Aberdeenshire)
South 24 October (Lockerbie)
Central 31 October (Stirling)

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Continued from p11

port. A steady supply of round timber is essential for saw millers and processors to plan their operations and to have confidence to continue to invest in mills and factories."

Mr Heald highlighted the recent Norbord announcement of a £95m investment in its board factory in Inverness. He said: "Even before this, processors in Scotland alone were investing £50m-plus a year in their sites – but that investment will only continue while there is confidence in supply. Confor is working with the industry and government to try to work through the current supply crisis. However, what we need above all else is a structured approach to long-term planting and that means more tree planting.

"Scotland is increasing planting rates but the rest of the UK is lagging behind and the supply crisis will only get worse in the years and decades to come unless we tackle this problem now. These statistics highlight the need for forestry and wood processing to be a much more central focus of the rural economy after Brexit.

Mr Heald said many farmers and landowners were realising the benefits of planting part of their land with trees - to provide shelter for livestock, firewood in the medium term, and a cash crop and a more balanced business in the longer term. "For those who already have trees, but have maybe not managed them well - or who have timber in hard-to-access locations - now is a great time to have that asset valued and look at realising a great price. When you have done that, you can re-plant the land and then consider extending the area covered by trees."

Mr Heald explained in his *Farmers Weekly* interview that the size at which a woodland would become a viable proposition for timber was very location specific. "You could have a small woodland of 4-5ha, which is near a road and easy to work, but if it is down a narrow track then you might need 10-15ha," he said.

He also advised farmers who wanted to cut and sell timber that they would need a felling license and suggested that they contact a professional forester through the Institute of Chartered Foresters.

UKWAS4 unveiled

UKWAS4 has been finally signed off by both FSC International and PEFC International. The revised standard went live on 1 April and some foresters have already been audited against it, although there is a formal transition period of several months from UKWAS3. The new standard has been written and designed to be used by forest managers and laid out in a more logical order. The UKWAS website has also had a complete overhaul, and the new standard has been formatted to make it more easily viewed and used on a tablet. A fully downloadable and printable version is also available.

http://ukwas.org.uk/

See p29 for full story

Royal Highland Show

Edinburgh, 21 – 24 June

Confor will be sharing a joint forestry industry tent with Forestry Commission Scotland, Institute of Chartered Foresters, and Central Scotland Green Network. The aim of the tent is to tell farmers and landowners about the benefits of planting trees, and to provide them with all the information they need to plan a forest and apply for grants. It will also raise the profile of the multiple benefits of both forestry as a natural resource and timber as a sustainable material. Confor staff will be in the tent during the week: please do drop in and see us.

www.royalhighlandshow.org

Royal Welsh Show 2018

Llanelwedd, 23 – 26 July

Planning for the show started back at the end of 2017 when we booked our stand space and the marquee. This year the marquee will be a little bigger as we are hosting more events and presentations for Confor, the woodlands and forestry sector and for the wider show.

As ever Confor will be at the show for all four days staffing the stand and attending the many conferences and seminars organised by others to represent the sector. Stuart Goodall, Andrew Heald, Eleanor Harris and Martin Bishop will all be there and we would be delighted to see you at any time throughout the show. Please call in and send your colleagues and friends around, we love a busy stand.

www.rwas.wales/royal-welsh-show

What's happening?

Monday, 23 July

- 3.15pm: Stick makers award ceremony

Tuesday, 24 July

- 12pm: Forestry day. We will have our usual round of speakers and guests, followed by the 'forest buffet' kindly sponsored by John Clegg & Co.
- 3pm: Woodlands awards ceremony
- 7pm: Stall holders' hospitality event with the awards ceremony for the best stand at the show

Wednesday, 25 July

- 11am: Landowner's event, aiming to encourage farmers to plant more trees

Thursday, 26 July

- 11am: Schools photographic competition awards ceremony
- Tbc: Presentation by Forest Research on its current and future programme

APF 2018

Ragley, 20 – 22 September8

Confor's flagship show, the APF Exhibition, is the UK's largest forestry, woodland, arboriculture, fencing and biomass show.

Remember, Confor members enter for free! Don't forget to bring your membership card to the event. For any questions regarding your card, please contact

liz@confor.org.uk

Check out the event's Facebook page (APF 2018) to stay up-to-date and see who will be attending.

For more information on the event visit

www.apfexhibition.co.uk or contact

info@apfexhibition.co.uk

GET IN TOUCH

APF Preview

If you are exhibiting at the APF and will organise an event or launch a product, please get in touch for the APF preview in FTN August issue.

>> See p19 for details of Confor panel discussions at APF and RWS

CAN YOU HELP?

Can you inspire the next generation of foresters?

What better place than APF to introduce children to our industry, with you, the professionals, showing them what happens in a modern working forest and bringing it all to life. Those who have volunteered in the past can, I am sure, vouch for the enjoyable time they had, as well as answering those tricky questions!

There will be several hundred children coming from a number of local schools, hopefully both primary and secondary, due to attend the show over the Thursday and Friday. Each group will be accompanied by a teacher/ adult who is entirely responsible for the children. We are looking for volunteers to accompany each group to explain and interpret what the group is seeing at each stop. There will also be learning resources from the Forestry Commission Rangers for schools to take back to the classroom.

From experience the tours take 2-3 hours to complete and generally leave between 9.30 and 10.30. More information on briefing times, suggested routes, an introductory talk to each group / school on forestry and what to expect on the tour, as well as some health and safety issues to bear in mind, will all be dealt with in the run up to the date.

I hope that many of you are able to come to the APF 2018 at Ragley, and I would be delighted if you can spare some time to inspire the next generation in forestry and all its aspects.

If you are interested in volunteering to take a group around the show please call 0131 240 1419 (please leave a message) or email **fiona@confor.org.uk**.

If you know of anyone else who is going to the Exhibition please pass this on to them as a prospective volunteer.

Don't forget that Confor members get free entry into APF on production of your current membership card. If you need a ticket however please let me know and I can arrange free tickets for volunteers.

Fiona Angier

Confor panel discussions at APF and Royal Welsh Show

Confor is organising two high-profile panel discussions to be held at RWS and APF 2018. We will keep you up to date on speakers and exact timings in the next few weeks.

PANEL DISCUSSION 1
FAIRPLAY FOR FORESTRY

Royal Welsh Show: Tuesday, 24 July
APF: Thursday, 20 September (morning)

A common theme emerging from the responses to Defra's *Health and harmony* consultation is a desire for integrated land use, with fairer recognition and reward for land managers that deliver public goods. This integration and desire for 'fairness' raises a number of interesting questions which need to be addressed in any future land use bill or strategy.

How can we ensure that in the future there is a level playing field for land managers, and that for example farmers that plant trees do not lose agricultural support payments?

If public money is spent on public goods for example carbon sequestration – should we pay the same for a tonne of CO_2 stored in the soil, in woodland or in emissions avoided.

How do we break down the silos between farming, environment and forestry, should we start at college and teach students standard units in land management and only specialize once everyone has a common understanding of the basics?

There is understandable concern about future food security and that the UK should produce more of the food that we consume and be less reliant on imports. Should the same thinking apply to forest products? The UK is the 2nd largest net importer of forest products in the world, should we take greater responsibility for our forest footprint or simply rely on forest-focused countries to supply what we need?

These issues and others will become more increasingly important, and hopefully Defra's thinking more clear as 2018 unfolds.

PANEL DISCUSSION 2
FUTURE FORESTRY AND THE BIOECONOMY

Royal Welsh Show: Wednesday, 25 July
APF: Friday, 21 September (morning)

"Anything that you get from a barrel of oil, you can get from a tree."
The largest Cross Laminated Timber building in the world was recently completed in London. Scientists have created a new 'wood' material using timber nano fibres which is stronger than steel and can stop a bullet.

Are we entering a new timber age? What does this mean for traditional wood using industries, and what new opportunities are on the horizon? How do we manage our existing forests and plant new ones to meet these new markets?

'The most effective way to do it, is to do it'

Over 330 professionals descended on the Edinburgh International Conference Centre on 2-3 May, for the Institute of Chartered Foresters' flagship national conference *Innovation for Change*. **Stef Kaiser** reports

The future is here! Futurist and inspirational speaker **Mark Stevenson** dug out a quote that says it all: "Reality is that which, when you stop believing it, doesn't go away."

Fergus Ewing MSP opened the flagship conference and delegates heard from an exceptional selection of both UK and international speakers on a wide range of subjects setting out what the future may hold and how the forestry sector can prepare for it. Examples of key topics discussed were advances in bioscience, automation in machine technology or emerging technologies for forestry professionals.

Several speakers highlighted the need for the forestry sector to address the issue of adapting skills sets. A change in attitude is the first step to initiate this shift. We need to embrace technological innovation as an enabler to success rather than reject it as disruptive. Our sector needs to accept that completely new skills will be needed in addition to traditional forestry expertise. Foresters' natural talent for long-term planning was highlighted as an advantage when adapting to future uncertainties in the light of climate change, technological innovation and other shifts. **Dr Elizabeth Barron-Majerik** of Inverness College stressed that it is now that we need to shape our future workforce. Inverness College is organising events for P5 children to communicate a positive image of forestry to young people and empower them to become leaders of change.

A number of very meaningful questions were put forward to the panellists. The issue of rural connectivity as a barrier to the **Internet of Things** and cloud-based technologies was raised. Worries about the impact of technology on employments were expressed. The barrier of public perception and fear of change was widely discussed, and the challenge of translating innovative lab results into realistic solutions for forest managers was highlighted.

The event left attendees seemingly inspired and driven to start "thinking outside of the box". However, one of the main challenges of the technology-driven future that was presented on the day, was not further discussed: how to be mindful of the dangers that increased automation and machine decision-making will bring in terms of data mining and security.

"

I am looking for employees and I need mainly programmers with an interest in forestry.
Jez Ralph, Timber Strategies, Confor member and conference attendee

What technology is here to stay?

Futurist **Fiona Lickorish** highlights some trends that seem to be sticking and their use in forestry.

UAVs (Unmanned autonomous vehicles)
The experimental use of UAVs in forestry for precision mapping and measurement, biodiversity and sustainable planning is growing as costs are reduced.

Artificial intelligence and machine learning
When employed in conjunction with large datasets and outputs from UAVs, these have the potential to analyse and 'learn', using algorithms to might identify and pin-point geographically, tree disease or death and forest fires.

Robotics
Forestry robotics may provide a cost-effective increase to productivity and improve safety.

New forest-based materials
With growing pressure to reduce plastic use, new industries using forest-based products are becoming more important.

CRISPR
CRISPR a defence mechanism found in bacteria, is now being used as a new flexible editing tool that allows scientists to edit genomes with unprecedented precision

innovation for change
transformation
NING

Challenges of developing autonomous equipment in forestry operations

John Pineau of FP Innovations (Ontario, Canada) is convinced that autonomous equipment, connected via the Internet of Things is a realistic solution to the challenges of labour shortage, health and safety and the need for advanced decision-making in forestry operations. However, our sector brings a unique set of barriers to implementation of this kind of innovation

1 Harsh environments for sensitive robots

Muddy, soft and uneven ground, slopes, ground obstruction, heavy vibrations, snow, rain, dust, temperature variation. Need for high-tech but heavy-duty sensors. In the case of autonomous trucks, sensors are not designed for forest roads.

2 Connectivity

Data collectors might need to rely on satellite as cell phone coverage is not realistic in most rural areas.

3 Image recognition for artificial intelligence

The forest is a challenging environment for image recognition as trees can be very different even if of same species.

4 Developing an 'ecosystem' around robotics

There is a need to develop a pool of skilled people to operate robots, manage robot operations, build forest robots and service new types of machines. How can this happen simultaneously?

5 Investment barriers

From a manufacturer's perspective, forest machines are, compared to agricultural machines, a small market. Manufacturers don't have huge incentives to invest in forestry-specific innovation. Contractors mostly own no more than a few machines, often using them for decades to recover the investment. These small businesses don't have the capacity to upgrade their machines stock to incorporate autonomous components.

What's happening ...in the lab?

Increasingly tight environmental regulations and pressure from consumers have pushed research in the field of biopesticides and new strategies for pest control. Results from innovation in genetics in biotechnology and genetics are showing in the field of plant health resilience, accelerated tree breeding and species improvement. UK Sitka spruce is a research target due to an interest in making the species more suitable for the modification of home grown timber.

Drivers for innovation

Can technology help optimise several conflicting aspects?

- Pressure to increase productivity and reduce import dependency
- Shortage of labour
- Climate change and resource scarcity
- Increasing pressure to move towards circular economy
- Changing legislation (eg environmental)
- Harsh environments (health and safety)

Challenges for innovation

- Perception: fear-of-change mindset
- Investment requirement – big barrier for smaller companies
- Required shift in skill sets
- Predicting future industry, customer and regulation requirements

...and in technology?

Innovations in technology focus on increasing efficiency in systems. Remote sensing systems and machine-mounted sensors and scanners are ever more accurate in measuring the world around us, be it single trees or whole forests. Sensors can be mounted on satellites, drones or harvesters and can send pre-processed data to inform foresters tasks and pass on information downstream the supply chain. The objective is to optimise decision-making in forest operations, basing it on accurate data that are produced considering external factors, such as current processor demand or environmental regulations. Drone technology is in everyone's mouth and is already being used by companies for rapid assessments and other uses. BioCarbon Engineering suggests using drones to plant trees based on data driven path planning.
Other innovations are multispectral Lidar for 3-dimensional forest health mapping or harvester-mounted tree scanners to optimise logging decisions for future processing.

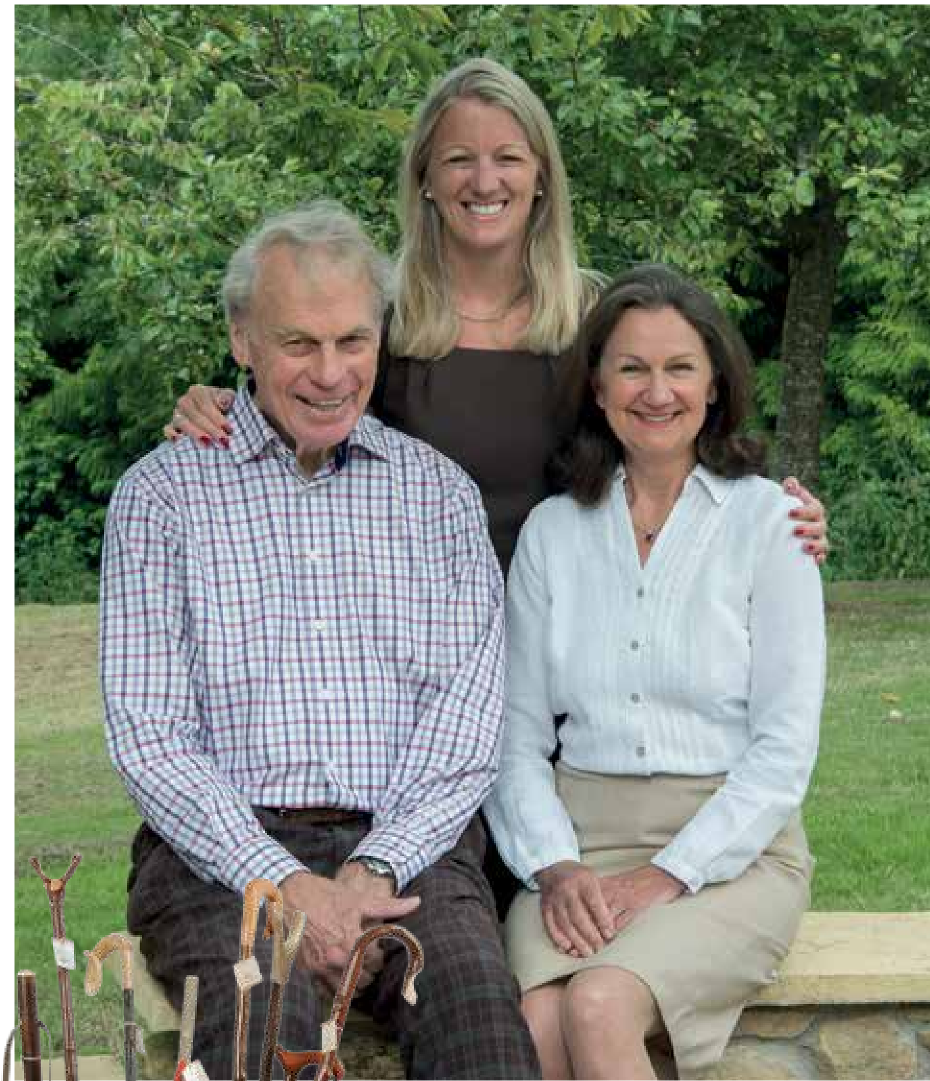
Read more about what's happening in technology on page 26.

FTN WEB RESOURCES

Find links to all conference presentations, in particular related to topics and speakers highlighted in bold. **www.confor.org.uk/ftnweb**

Sticking with it

Stef Kaiser meets the family behind Classic Canes, a family business which has turned 33ha of lowland forestry in the South West into a successful business.

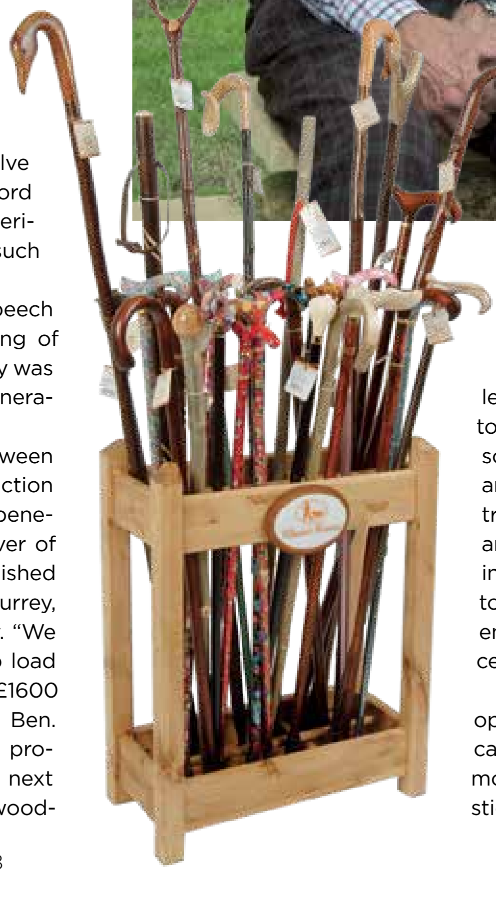


Ben and Diana Porter with daughter Charlotte Gillan

Classic Canes Limited is a family business producing high-quality walking sticks. Based in Somerset, Ben and Diana Porter set up the business 35 years ago on their estate in Hinton St George, where their family home, company offices, workshops and warehouses are located. Daughter Charlotte Gillan is now the company's managing director. The surrounding woodlands produce the raw material for their internationally sought-after countryside sticks.

Ben Porter is what I would call a seasoned entrepreneur who grew up in Africa and has worked as a trader in 88 country, mainly in the Far East.

In 1978, an interesting business opportunity presented itself to purchase undermanaged woodlands in England and sell them on after a few years of professional management. In partnership with a trusted friend and forester, he gained interest in forest trading. Ben and Diana purchased Warren House and Warren Woods, which would quickly become the birthplace of Classic Canes Ltd. Ben's innate entrepreneurial spirit, his year-long experience in commodity trading and his overseas inspiration for vertical integration were key ingredients for the start of a business which would evolve into a globally renowned business in record time. Diana brought a wealth of sales experience to Classic Canes, gained working for such household names as Lyons and Avis.



Warren Woods was a woodland under beech and ash standards with some underplanting of western red cedar. In areas where the canopy was missing there was exceptional natural regeneration of ash.

The main management choice lay between converting the woodland to conifer production or, alternatively, working out a system to benefit from the already established natural cover of hardwoods. At the time there was an established walking stick manufacturing business in Surrey, and they were in desperate need of supply. "We cut some of our sticks, took a first pick up load full down to the factory and got £350 (over £1600 in 2018) paid there and then", remembers Ben. We committed to a short-term rotation to produce walking stick material and spent the next five years learning the art of coppicing and woodland management.

Deer interference was a big initial challenge. The roe deer would come from miles to get their share of tasty young sprouts. The solution was to let the ash grow to 20 feet and 2-3 inches in diameter and cut off the trees at shoulder height to put the coppicing area out of the reach of keen deer. The 2-3 inches diameter of the original tree allowed to cut one-inch sticks with a lump of the parent stick - which could conveniently be processed into the handle of the walking stick.

The coppicing system was initially developed and refined for ash, but any hardwood can be used to produce walking sticks. The more emphasis on the individuality of the stick, the better it sells under the Classic

Canes brand. Ash dieback poses a serious threat to the present system so priority is currently given to other species that can be coppiced such as hazel, crab apple or thorns.

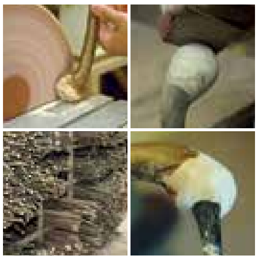
A vertically integrated business

With secure demand from the Surrey factory, coppicing production scaled up pretty quickly. However, relying on one single client is risky. The Porters decided to buy back the finished stick from the factory and in 1982 Diana set up a wholesale distribution business in the West Country, now also including products from other manufacturers in their portfolio. She started to sell the sticks to retailers across the region, getting an excellent response, most likely as a result of her personal approach and the company's pioneering marketing skills. Within a few years, Classic Canes was supplying upwards of a thousand retail outlets in Britain and today, they export to more than forty countries. In due course the old factory in Surrey closed down and Ben and Diana were forced to take ownership of the production process as well – which turned out to be a recipe for success. It was the Porter's son Johnny who set up the workshops on site to allow Classic Canes to produce their own rustic walking sticks. Daughter Charlotte joined the family business to deal with all marketing aspects, subsequently taking the business to another level.

Making small woodlands pay

The key to managing small woodlands is to add value to low quality products. It is possible to make a good operating profit from hardwoods by managing a coppice with standards system. The wood growing stage is strategically significant but ownership or management of the processing and marketing stage is absolutely fundamental. It is difficult to show a profit on a forestry operation up to the point where the round sticks/logs leave the woodland at road side – break-even can be considered a success! A rather better profit is available from the processing/manufacturing stage where quality is more important than low costs. There is a further source of profit in the marketing operation where it is important to have really good staff to develop and expand the business. The work of Charlotte Gillan has made a big impact in that aspect. Having ownership over the whole production and marketing process allows a business to respond to markets and adjust and optimise accordingly.

Above: Ben and Diana Porter in 1989
Below: Shaping, sanding and varnishing a knobstick; sticks in the drying room



Trust as a competitive advantage

The Porters and their coppicing woodlands are the story that gives the Classic Canes brand its distinct character. The company can prove that their rustic sticks are sourced and processed on site. The provenance and production of each product, and the people involved, are explained on the website and catalogue, to create a positive connection between end product and material source.

"We also sell wholesale collections which are not produced here. However, it is the countryside sticks that shape our brand and create loyal customers. All our product ranges benefit from this image", explains Charlotte.

Classic Canes has gone with the times. The website is a result of excellent marketing work and the brand has a strong social media presence. "Instagram is ideal to show pictures of the story behind our product and connect with new and existing customers. Social media is often the first point of contact with new customers, especially from overseas.

classiccanes
classic_canes

Making coppicing work

The ideal spacing for ash was found to be 3 feet with one good standard selected every 30 feet to be developed by high pruning for quality sawlogs.

- 3 x 3 ft spacing = 4500 ash plants/acre
- three years from coppicing to produce a harvestable stick (one inch diameter, 4-5 ft long)
- Phased 3-year rotation = 1500 sticks / acre / year.

The daily cost of a forester working with hand tools works out at about half the price of the stick material which he can cut in a day.

Say it With Wood promotes use of biochar

Biochar has many exciting benefits - put simply it acts as both a sponge and a buffer. The particles absorb water, liquids and nutrients which are then accessible to plants over time. Due to its open structure it has a large surface area, acting as a host for beneficial mycorrhiza. These attributes support plant health and growth by allowing the efficient processing of nutrients. The charcoal stays working effectively in the soil for hundreds of years, with the added benefit of locking carbon away.

As part of their work to promote the use of this fantastic material, Say it with Wood will be holding workshops through the summer, with local horticulturalist Laura Russell demonstrating the ways crushed charcoal and biochar can be used in the garden and on farms.

The first will be at the Say it with Wood stand (RC1) at the RHS Malvern Spring Festival (10-13 May), and then at Hellens Garden Festival (9th + 10th June) and the Cotswold Show (7th + 8th July). Further workshops are planned at the Say it with Wood HQ in Much Cowarne focusing on using charcoal on farms.

For more information,contact Laura **info@sayitwithwood.co.uk** or telephone 0795834583. **www.sayitwithwood.co.uk**

Scotland's Biomass Advice Service set to continue

Forestry Commission Scotland has renewed its commitment to supporting the biomass sector with a further year of funding for the Wood Fuel Support Service.

The Support Service was launched in 2008 as the Regional Biomass Advice Network, and provided a range of support to those installing and supplying wood fired boilers. In recent years the core of the service has been to offer an online information resource and newsletter, and provide a free email advice service. The service is part of Forestry Commission Scotland's commitment to ensuring that woodfuel continues to play a key part in meeting the Scottish Government's renewable heat target.

The Usewoodfuel website was overhauled in 2017 to reflect the changes in the market since the RHI was introduced, and contains information for woodfuel suppliers, customers, and biomass system installers. The parallel email advice service is managed by the team at re:heat, and provides responses to queries on all aspects of woodfuel production and use.

Re:heat took over the running of the service in June 2017, and was awarded a 12 month extension in May 2018.

www.Reheat.uk.com
www.usewoodfuel.co.uk

Savills awards outstanding student

A student at the Scottish School of Forestry at Inverness College UHI has been awarded a top prize from real estate firm Savills in recognition of his impressive academic achievement in the area of estate management. Jonathan Hawick (31), who is in the third year of the University of the Highlands and Islands' BSc (Hons) in Forest Management, won the Savills Forestry and Sustainability Award after producing an outstanding land management plan as part of his degree. Jonathan combines study whilst working part-time for Forestry Commission Scotland.

www.inverness.uhi.ac.uk/ssf
www.savills.com

(from left to right: Amanda Bryan, FCS Commissioner, Jonathan Hawick, Tom Black, Savills forestry manager).

Lockhart Garratt marks 20th anniversary with eventing sponsorship

The environmental and planning and forestry consultancy has announced sponsorship of three specially commissioned cross country fences as part of their 20th anniversary celebrations. The sponsorship includes the design and build of the fences used at the Horseheath British Eventing Horse Trials. The trials are held twice yearly in Cambridgeshire on land owned by the Thurlow Estate in Suffolk.

Lockhart Garratt has grown to become one of England's largest independent forestry and environmental planning consultancies. The company offers a range of consultancy services including arboriculture, land and forestry management as well as ecological and environmental consultancy services.

www.lockhart-garratt.co.uk

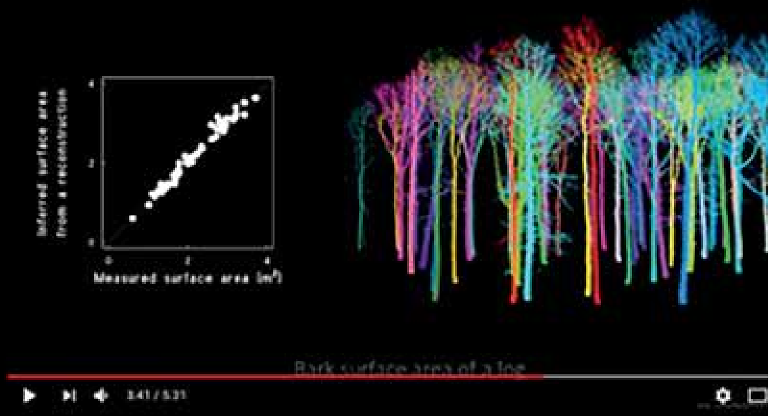

specialists

3D animation on 'weighing trees' using terrestrial LiDAR

Forest Research, Tampere University of Technology and Université Grenoble Alpes have been working together to optimise measurements from forest sample plots using terrestrial LiDAR in order to produce more accurate, more detailed, timely and harmonised information that can be fed into national and international forest information systems. An animation / simulation shows details of the data processing chain for tree volume and biomass assessments in a visual way.

FTN WEB RESOURCES

Watch the full animation
www.confor.org.uk/ftnweb



Utilising technology: Drones in Forestry

Tilhill Forestry has produced a first short video as part of a series on technology, ecology, safety, forestry and harvesting.
#Dronesinforestry #tilhill #Forestry

FTN WEB RESOURCES

Watch and share the video
www.confor.org.uk/ftnweb

Forest HQ: Decision forestry at your fingertips

"On average a 20% of value of a forest is lost at harvesting time", according to Prof Glen Murphy (OSU). The operator has to assess a tree from his cabin and the felling decision he makes has a big impact on how efficiently the tree is cut. Scanners can help for advanced, consistent and more efficient decision-making and Internet of Things based integrated systems can help streamline the production process, creating strong links between harvesters, hauliers and processors.

Irish tech company Treemetrics provides forest management technology to enable forester owners, managers and consultants to enhance the profitability and sustainability of their forests. The Forest HQ platform is a pioneering "Internet of Trees" technology which connects forests and data seamlessly to deliver a global view of a forest in one central place. Using state-of-the-art satellite and drone technology, remote sensors, wireless connectivity, data integration, it will help foresters make better decisions and optimise log production to enhance forest value.
www.treemetrics.com

FTN WEB RESOURCES

Download the Treemetrics presentation for the ICF conference 2018 "Innovation for Change"
www.confor.org.uk/ftnweb

MOTI: One-stop app for forest mensuration

Christian Rosset of Bern University presented a new mobile phone app at the ICF conference 2018 "Innovation for Change". MOTI takes advantage of Smartphone technology for the simple and convenient capturing of key variables concerning the condition of forests. The Android application is specifically designed for forestry professionals to capture in an easy, cost effective and reliable manner the key tree or forest variables with automatic calculation of the error range of the estimations. MOTI thus provides the solid basis for decision-making directly in the forest. MOTI can operate offline and the interface is available in German, French and English.
www.moti.ch
Download on Google Play Store or Apple Store

Virtual forests: a true VR experience

The virtual forest – developed by Metsä Group, Tieto and CTRL Reality – is a true VR experience which can simulate different forest management methods and their impact on income and the landscape.
www.youtube.com/watch?v=oBC9FzmGKKE

In pursuit of a standard

Confor's technical director **Andrew Heald** reports on the latest UK Woodland Assurance Standard

At the Confor Woodland Show at Longleat in September 2015, I produced a series of A1 posters showing the requirements for the fourth version of the UK Woodland Assurance Standard. This was part of a lengthy consultation exercise, and as a Director of UKWAS and part of the revision working group I was keen to get as many comments as possible.

The majority of people, thought the revised standard was an improvement, and at the end of the show we had only a handful of comments and suggestions. These were passed back to the Steering Group, and included in the updated draft. Our objective was to make the standard easier to use for Forest Mangers, and as part of that we changed the order of the requirements into a style that would make sense when thinking about and planning forestry operations.

Following further work and a third round of public consultation, the working group had completed their task and the draft was approved by the UKWAS Steering Group in April 2016. The next step was to have the draft standard approved by FSC International and PEFC International.

We knew that this could be a lengthy process but we anticipated approval in late 2016 and worst case scenario in early spring 2017. However despite consultation and communication with FSC International Staff, UKWAS was rejected by the Policy Standards Committee in October 2016. The main reason given was that we had failed to address a sufficient number of FSC International Generic Indicators. Unfortunately there is no right of appeal to the PSC, and any communication has to be via the staff members who had recommend that UKWAS should be approved.

In retrospect our timing was not great, we were only the second national standard to be assessed against the IGIs and there was a lack of clear guidance for the PSC to follow. UKWAS is also unique in that it is recognised by both FSC and PEFC, and there was a perception that we had somehow "dumbed down" the standard to achieve this.

Following much shuttle diplomacy, some heated tele conferences and great deal more hard work by the UKWAS revision working group, we made a number of minor changes and resubmitted the standard in December 2016 and this time received a conditional approval. These conditions took further work and eight months to sign off; thankfully PEFC International were able to review UKWAS quickly and on April 1st UKWAS 2 was "live".

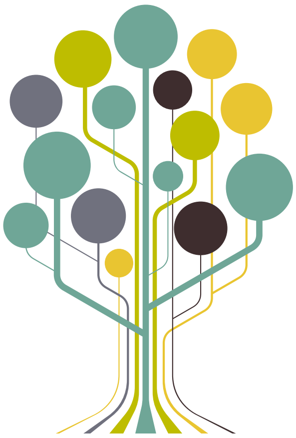
One of the positive outcomes from this lengthy process, was the development of a strong team spirit within the revision working group which included representatives from RSPB, Woodland Trust, Scottish Woodlands, Tillhill and of course Owen Davies from FSC UK, Alun Watkins from PEFC UK and Peter Wilson of UKWAS

> One of the positive outcomes from this lengthy process, was the development of a strong team spirit within the revision working group

The nearly two-year delay has resulted in some minor changes to the standard, but in reality I think these will have negligible impact on actual forest management in the UK. The UKWAS steering group has written to FSC International to highlight these issues and how this lengthy delay was perceived by many in the UK forestry

I think that the UKWAS approach in writing the standard to make it easier for forest managers to use, has helped show FSC International that the standard can be written in a more "user friendly" style without losing any "rigour". I also think that by focussing on only a few of the IGIs we've shown the way forward for a more "risk adjusted" approach. To make the most of the new standard, we have also redesigned the UKWAS website and how the standard is formatted to make it easier to use on a tablet, a fully downloadable version is also available.

Time will tell if have been successful in our revision and redesign of UKWAS4 and the website, and we would welcome any feedback from managers or auditors. UKWAS4 will have a lifespan of five years, and hopefully the review process which will be begin in 2022 will only require minor changes.



Don't underestimate the power of pictures, says **Stefanie Kaiser** in the third of FTN's series of guidance articles,

THE FTN GUIDE TO DIGITAL COMMUNICATION

A picture is worth a 1000 words

Digital communications now means visual communications. Our brains reportedly process visuals 60,000 times more quickly than text. It's the first impression that counts. I'd dare to say that most people are – to some extent - visually oriented. They will pay much better attention to what you are trying to communicate than they would if they were exclusively reading words on a page. A good image to open a post or presentation can catch your audience's attention and actually get them to read and reflect on your messages. An image needs to reflect the identity and qualities of your business, never work against it.

For this purpose, I personally start any communications strategy with a tag cloud that describes my business. The example below represents how we perceive the modern forestry sector and how we want others to perceive it. I have used this tag cloud on its own or to find photos, infographics, videos or animations that make people feel this way about forestry. Because an audience that has a positive attitude towards our sector will be receptive to listen to our messages.

In particular social media is world of fast and short-lived messages. Our attention span is getting shorter by the day. To get your message across, catching attention is key. Why do some posts get shared 1000s of times and others don't? We can't always post pictures of cute kittens but we can do our best to use photos and visuals for our benefit.

Don't use lots of visuals just for the sake of it. Create or choose graphic content that reaches people's emotions – something that your audience can relate to or something that they find impacting. Just to give you some ideas:

Eye-catching images

In particular for political messages, try to choose an eye-catching but meaningful image to attract attention. Stock images can be useful but need to be chosen wisely. Find a visually sensitive person in your team and let them choose the images. Test within your team what associations the picture evokes. You might be surprised at the outcome!

Be yourself

People will find it hard to relate to your business or brand if it doesn't have a human face. This is especially true for the forestry sector! The public often only sees impersonal trees or machines – not good for engagement! Photos showing people ("like you and me") give the audience something they can personally relate to and will help you build trust and credibility for your business or campaign.

The young founders of Tomorrow's Forests Ltd are great at this. I love what they do (see, they've tapped into my emotions). They regularly post pictures of themselves and their planting squads – a good mix of personal pics giving insight into their everyday routines and important messages about their business activities and the sector in general. And some awesome videos of actual sprint planting going on! I felt positively about the company from the first time I saw the posts –well done Liz and Nick!

"A Great photo from our amazing forewoman Sasha Klein. "Another day done." @tomorrowsforests

Forestry on Twitter

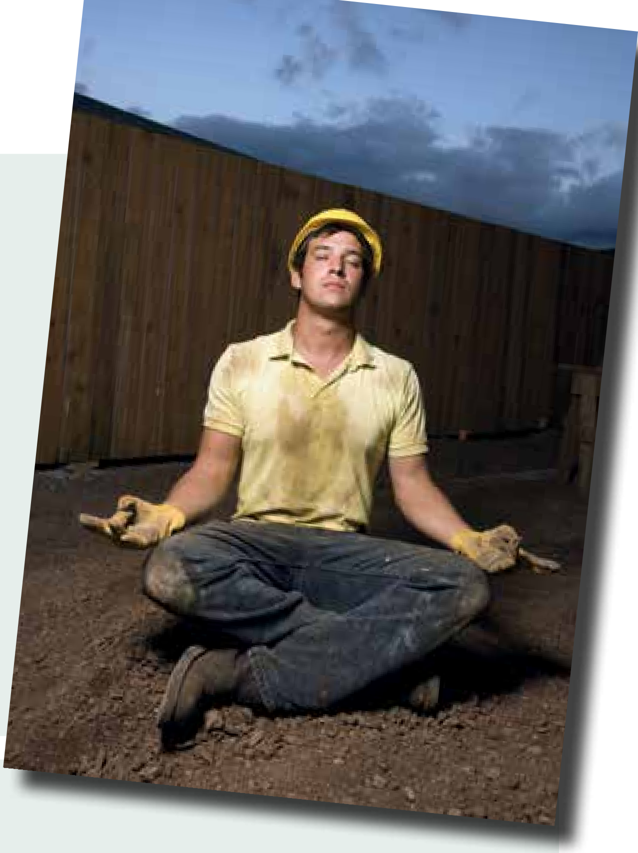
Changing perceptions

Imagine a strong, manly trucker talks to you about his new passion for and how it helps him perform his job. You are slightly entertained at first, but as he talks about it quite naturally, it starts to make sense to you and you take in his ideas with great interest.

The same can be done in digital communications. Replace the guy by a meaningful image and combine with a message you want to get across.

Look at the picture on the right. What is your first reaction? Be honest. Now imagine a forest operator or haulier uses a similar picture of himself on his business Facebook page and talks about how he unwinds after an incredibly productive day, maybe including some details of the job he was working on. Everyone will focus on the yoga pose. He wouldn't even need to talk about occupational health in his post – he normalises the idea of tough workers looking after themselves in order to keep performing in their jobs.

A simple picture with an unexpected twist got the audience engaged and changed perceptions! Now that I got you listening, please read the article on occupational health for hauliers (p63).



Infographics

As most of us are visually wired and constantly being overloaded with information, infographics and infographic animations are often used as short-cuts to communicate otherwise complicated data: they are a great tool for tackling entrenched public perceptions, where the "the shorter the better" is key to success.

In FTN, for example, we have increased the use of small infographics (and word art) and make those elements available for download on our website. They are a good way of sharing the key messages contained in the more detailed articles – via social media or in your presentations.

Eva Schoof, Plan Vivo foundation, Edinburgh
"I think a lot of information is easier absorbed visually. The bounce rate of users on our website is pretty high on very text-heavy pages. You probably have a higher chance of catching people's interest (and perhaps money) if you can make a good visual impression 'at first sight'."

Pedro Bravo, 'green marketing' entrepreneur
"I would say visual is direct, sometimes you don't need much more info or explanation (although there are visual works that really make you think)."

Tam Treanor, BeeBionica, Edinburgh
"Allowing people to digest information with their senses makes it more fun and stimulating for them. Visuals are great for communicating to large audiences digitally since they can be published and shared so easily and consumed anywhere anytime. In the future, sensorial information such as touch, sound, vision and possibly even smell may become more commonly translated over digital devices, information will become ever more compelling to engage with."

FTN WEB RESOURCES

Read more about visual communication and changing perceptions in a dedicated FTN feature (August 2016)

Watch the Confor animation "Animating Forestry"

www.confor.org.uk/ftnweb

This electic selection from the world of trees and timber on social media was brought to you by @eleanormharris

Demonstrating climate change adaptation in Alice Holt Forest

Our climate is changing but what are we doing to understand how we can adjust our woodland management practices to better prepare our woodlands to cope? asks **Dr Gail Atkinson** (Forest Research)

At Alice Holt Forest three new demonstration areas have been set up to show climate change adaptation measures in a woodland typical of the south east of England. The impacts of the chosen adaptation measures are being monitored and their performance will inform how the future management of the woodland is modified to cope with the changes ahead and sustain the desired flow of products and services.

Why were the demonstration areas established?

Alice Holt Forest contains a mix of broadleaf tree species and coniferous woodland which supports the provision of many important benefits, including timber production, habitat for wildlife and recreational activities, for example the Forest Park receives in excess of 450,000 day visitors each year.

The future climate for the area is expected to include hotter, drier summers along with more frequent extreme weather events, such as droughts. The likelihood of a drought occurring is projected to increase between 10% and 50% by the 2080s. Many tree species are susceptible to drought but it is repeat drought episodes and longer, more intense droughts that have been found to increase tree mortality in many UK species. More frequent severe droughts could lead to significant loss of tree growth, biodiversity and ecosystem services such as carbon storage at Alice Holt and more widely.

Indeed, in the south east of England the effects of climate change are already being felt. Oak, for example, now comes into leaf nearly a month earlier than it did in the 1950s. Less than 70 miles away from Alice Holt Forest, a beech woodland has suffered a partial stand collapse, attributable in part, to the increasing intensity and frequency of droughts.

The demonstration areas have been chosen and designed to show examples of where adaptive management and planning for future conditions can reduce the impact of the changing climate. They are located near to Forest Research's Alice Holt Lodge and the Forestry Commission England's Alice Holt Forest Park, and one of the areas contains a long-term research plot (offering potential for baseline data and comparisons). More widely, the woodland contains an array of historic research trials, some dating back to 1943.

How were the demonstration areas set up?

Forest Research and Forestry Commission England were keen to show a range of different adaptation measures, tailored to reflect the risks and opportunities specific to different woodland types in the south east of England. The areas and measures were chosen following a review of the management objectives for Alice Holt, projected changes in climate, soil type, current management and analysis of the potential of over 50 different tree species under future climate conditions using the Ecological Site Classification Model (ESC) (version 4) (www.forestry.gov.uk/esc). The Forestry Commission publication Successful Underplanting (Kerr and Haufe, 2016) was used to inform decisions about the shade tolerance, planting density and spacing of trees.

Policy and conservation requirements for the public forest estate and a review of the 18 specific adaptation 'themes' listed in the UKFS were also considered. The new areas were then selected and incorporated into the latest Forest Design Plan for Alice Holt (2016-2026) and subjected to the Forest Design Planning Process which includes public and statutory consultation.

How can I visit the demonstration areas?

A self-guided 'Climate Change Adaptation Trail' takes in the first two new demonstration areas and will open this August. Other points of interest along the trail include historic research trials and the Alice Holt Arboretum, which are today of fresh interest to those considering how to build resilience in woodlands to environmental change.

#AdaptAH

RESOURCES

Download self-guided trail guide from Forest Research website **bit.ly/2gZoWXF**
For hard copies or audio files contact at **adaptah@forestry.gsi.gov.uk**

Above left: Mature beech demonstration area of underplanting with UK oak and oak of more southerly provenance

Above right: Matt Wilkinson fitting a girth band to monitor tree growth on Corsican Pine, ahead of operations to create one of the new demonstration areas

What forest management actions are being demonstrated?

Underplanting with a species pair

In one area, a stand of mature Corsican pine growing on a sandy soil has been thinned and under planted with two broadleaved species, in support of restoration objectives. In one area, representing the 'woodland present', beech will account for 70% of the planting and hornbeam will account for 30%. In the other area, representing 'woodland future', the planting ratio is the opposite, so that hornbeam dominates the planting. This area is set up to show that whilst some species are expected to perform better in hotter, drier conditions compared to others, current species such as beech, need not be absent, just account for a lower percentage of the stand composition. Hornbeam is expected to perform better than beech in the future because it has a higher drought tolerance. The measures increase structural and species diversity of the stand and initiate the transition from clear fell to alternative continuous cover systems.

In this area we will monitor beat-up rates, tree growth and soils, to better understand the effectiveness of this method of adaptation. We will also monitor how the mature stand is affected by any high wind events.

Different thinning intensities

In the second area, young Corsican pine has been thinned to two different intensities. Hotter, drier summers will increase competition for water but there should be less drought stress evident in trees where heavier thinning has been undertaken. It is hoped this will also reduce the incidence of Dothistroma (ITALIC) needle blight due to increased airflow through the stand.

In this area we will monitor soil water availability and tree growth to see how the trees respond to increasing drought stress.

Underplanting with different provenances

The third area is located near the new trail in Alice Holt Forest Park. It is situated under mature beech woodland to show natural beech regeneration in comparison to underplanting with oak of native origin and also from a more southerly provenance. Tree provenances from a more southerly climate, matched to the projected future climate for Alice Holt may perform better in future. However, we need to find out more about how trees will cope with the changes and grow under different conditions, such as new rainfall patterns on soils in this area.

A mixture of provenances should provide some insurance against the range of possible future climate conditions and widen the genetic base to enhance the long-term adaptive capacity of the developing stand. Following thinning operations to increase light levels, trees of local provenance and trees from further south have been planted. We anticipate the new planting will, in time, show a contrast in the growth and performance of local provenance with those from further south. This demonstration area should therefore highlight impacts of provenance selection, whether positive, for example through improved growth and survival, or negative, such as through increased susceptibility to late spring frost or pest outbreaks.

In this area we will monitor beat up rates, tree growth rates and the regeneration of beech. We will compare the success of trees of local origin with those from further south.

Trafficability model testing

Shaun Mochan, **Jari Ala-Ilomaki** and **Ian Stewart** report on a project evaluating ground damage of forest operations

The aim of the ongoing EFFORTE project is to establish a basis and to develop methodologies to predict trafficability of given forest stands or perennial extraction routes prior to forest operations in the most common sensitive situations. The project's role is to evaluate the soil compaction risk of forest operations by considering soil type and conditions, machinery properties, forest stand structures and climate.

The recommendations that are the ultimate output and deliverables to the forest industry are based on predictions of soil deformation of forest operations under given soil conditions, estimates of soil recovery potential under given climate and forest stands including mechanical stresses induced by forest machines.

Model testing in Scotland was completed in June 2018 at a location in Aberdeenshire. The methodology used to test the Finnish model is described right. Elements such as water maps have not been added at this time to better understand the full complexity of harvesting and silviculture in relation to soil compaction and damage during and after harvesting.

The wheeling test enabled us to initially test the soil structure with the assistance of Dr. Dave Braidwood at North highland College, UHI. Soil sampling within the pre-prepared tracked area shown below. A 40m long route was marked out to give precise indications of where the wheels on the harvester and forwarder would fall given the exact dimensions of the wheels at 710mm.

Initial conclusions

The initial conclusions to the project testing indicate a successful comparison with soil type and machine damage. Integrated databases such as the ones SODRA in Sweden use for each of their contract machines allows harvester and forwarder operators to fully understand the best pathway to harvest and retrieve wood. These techniques are also allowing future silvicultural practices to be better understood for future management regimes.

Shaun Mochan is UK Coordinator, Woodilee Consultancy Ltd, Jari Ala-Ilomaki is with Finnish Research LUKE and Ian Stewart is Industrial Partner with James Jones and Sons Ltd

www.luke.fi/efforte

FTN WEB RESOURCES

Download a presentation including all graphs of the wheeling tests

www.confor.org.uk/ftnweb

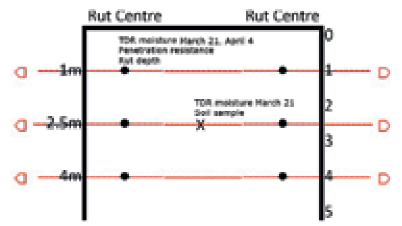
METHODOLOGY

1 Soil samples and soil moisture were taken to understand the parameters of the soil structure. Penetration tests (TDR) were also undertaken within each 5mx5m block created to comprehensively study each area of the test site. These TDR were taken twice, once before the test and after the initial harvester had made one pass along the length of the track.

2 Bulk density and grain size was measured to map the structure of the soil at each location, 1, 2.5 and 4m within each 5m block.
The project, courtesy of James jones and Sons Ltd, supplied a John Deere harvester 1270E, 8-wheeled with no chains or tracks and weighing 24tonnes and a John Deere forwarder 1110G 8-wheeled with no chain and tracks.

Test Track

40m in length • Eight 5m x 5m blocks



3 The harvester made one pass with the forwarder making five passes loaded with various tonnages:

- 1st pass: 29.63t
- 2nd pass: 28.33t
- 3rd pass: 28.03t
- 4th pass: 31.13t
- 5th pass: 29.43t

Both machines were travelling on Nokian Forest King TRS 2 710/45-26.5 with inflation pressure 552 kPa.

4 We measured the rut depth using two methods, a simple wooden constructed hurdle placed over each wheel mark after each pass to measure the depth marking each specific point to enable exact repeatability. We also used optical measurement to build a picture of the slope and rut depths after each pass.

The images were taken from east and west side at same location point after five forwarder passes.

Big data and amateur naturalists: recording wildlife in the woods

We know that our forests are rich in wildlife, but how do we communicate that message? asks **Eleanor Harris**

A study in 2003 found over 600 different species in upland Sitka spruce.[1] This year, a European study found that non-native plantations were able to support far richer communities of birds than previously thought.[2] Yet studies like these provide only glimpses and are resource-intensive.

The answer could be 'citizen science': crowd-sourcing big data by engaging thousands of people to submit records, which can then be used for all kinds of research.

The 2016 *State of Nature Report*[3], regarded by governments and conservation organisations as the most authoritative report on Britain's biodiversity, was made possible thanks to citizen science data: 7.5 million volunteer hours' worth of it.

But inevitably, this data is richest in places where people like to collect it, near cities and in nature reserves. The places not known for their biodiversity – such as commercial forests – are likely to be under-recorded, so their biodiversity is under-valued, and support for forestry amongst politicians and society is reduced.

Confor members can help to change that, by getting involved in a wide variety of projects. The boxes on the right will give you ideas, catering for every level of expertise and time commitment.

Or if all that makes you want to hide quietly in the woods with a notebook and pencil, fear not. The good old amateur naturalist can make the best contribution to citizen science of all, by simply enjoying nature in all its beauty and variety and recording everything they can. The **iRecord** website and app developed by the Biological Records Centre lets you submit records of everything you identify. Your data is then available to scientists for all kinds of research, and you can also see your own records over time as an online nature notebook.

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1 J. Humphrey et al, *Biodiversity in Planted Forests*, 2003.
2 J. Rodríguez-Pérez, 'Mature non-native plantations complement native forests in bird communities: canopy and understorey effects on avian habitat preferences', *Forestry: An International Journal of Forest Research*, vol.91, 2018.
3 https://www.rspb.org.uk/our-work/stateofnature2016

FTN WEB RESOURCES

Links to all the resources mentioned in text in bold **www.confor.org.uk/ftnweb**

INVERTEBRATES

The national decline of pollinators in farmland has become a national concern. Open areas and forest margins can be excellent places to spend fifteen minutes doing a **FIT Count** (Flower Timed Insect Count) to help improve data on pollinator populations. Another lunch-break activity is the **Big Butterfly Count** between 20 July and 12 August. For a wide range of other pollinator monitoring activities, explore the **Polli:nation** projects run by the Open Air Laboratories (OPAL).

Specialist woodland invertebrates are under-studied, fascinating and important, and many are the focus of special studies. If you have seen a **Stag-beetle**, the People's Trust for Endangered Species would like to hear from you. If you are lucky enough to have a forest which lights up at night with **Glow worms**, please tell Robin Stagell, whose UK Glow Worm Survey has run since 1990. Buglife is seeking records of **Wood ants**, which play an important role in the ecology of conifer forests, transporting nutrients and regulating pests. Buglife are also interested in **Longhorn beetles**, a colourful woodland family of around 20,000 species worldwide, of which around 60 are known in the UK.

If you would like to organise a group event, why not throw a **moth party** between 14-16 June. The National Moth Night website has all kinds of resources to help, and there are prizes to be won!

BIRDS

Birdsong is one of the best indicators of a nature-rich forest. Birds are a sure sign of insects, and therefore plants, fungi, deadwood, healthy soil, clean water: a strong ecosystem. The British Trust for Ornithology has bird surveys for every level of interest and expertise, and you can download the **BirdTrack** app to submit records. Look out for woodland species of particular interest including **Nightingales, Woodcock,** and **Owls**.

HABITATS

Water is one of the most carefully regulated aspects of forest management, and recording species such Caddis-fly larvae is one of the best ways to find out how clean it is and therefore whether management practices are working well. Messing about in water is also one of the best ways to explore forest ecology with children. The **Riverfly Partnership** can provide a one-day workshop to train you to monitor rivers and streams. Forest ponds are often important wildlife sites, and the OPAL **Water Survey** provides all the resources you need to find out how healthy yours is.

Air quality can also be monitored very effectively by surveying lichens growing on trees. The OPAL **Air Survey** provides all the information you need.

Top left: Speckled Wood butterfly
Top right: Surveying Wood ants at Aberfoyle

Environmental impact assessment: a torturous process in Wales

by **Andrew Sowerby**

The Maes Mynach story begins with an undermanaged 72ha cattle farm near Cynghordy with a mixture of improved and semi-natural grassland, bracken banks and a small area of wetland habitat. The farm is in an enclosed valley surrounded almost entirely by conifer plantation. Following its acquisition by a forestry investor in late 2015 an initial 24ha of afforestation was carried out under the Glastir Woodland Creation (GWC) scheme that winter. A large section of the proposals had to be postponed due to the late timing of Welsh Government confirming GWC eligibility (October) surpassing the opportunity to pre-spray the large tract of the farm that was dominated by bracken.

During this time Natural Resources Wales (NRW) were consulted within the context of GWC and EIA (which at that time were conducted as two separate processes) and the EIA determination deemed that proposals did not require NRW consent.

The following year a GWC application and EIA decision were applied for the remaining areas, with the exception of 7ha of semi-natural grassland habitat and a small retention adjoining the farmstead. Discussions advanced with the GWC verification team, who had been taking advice from the NRW natural resource management team. They maintained that they were unable to proceed with the application until a phase 1 vegetation survey was undertaken to quantify the priority habitat. This was conducted during summer 2016 in line with NRW guidance for engaging ecologists and the results submitted. A significant time elapsed with NRW failing to provide any feedback and in December a meeting was called by Pryor & Rickett Silviculture with senior NRW staff to agree a way forward. At this point it came to light that NRW had denied processing the EIA determination, despite clear requests to proceed with this as a standalone project, and that the ecological survey had been disregarded. The meeting concluded that the proposals conformed to UKFS and Environment (Wales) Act and a compromise was made to secure GWC approval for a further 10ha of predominately bracken bank containing a small proportion of priority habitat. It followed that the remaining area of the project required EIA consent. In March 2017 the first afforestation Environmental Statement in Wales was initiated.

Semi natural habitat

During the scoping meeting with NRW we reviewed all the characteristics of the afforestation project and identified semi natural habitat as the only focal issue. NRW insisted that a phase 2 habitat survey would be necessary on approximately half of the remaining project area. This was carried out and the findings incorporated into the Environmental Statement, which was submitted to NRW in July and published for public consultation. At this stage the Senior Regulations Manager noted his concern about different views on the scheme within NRW and that he needed to escalate the Environmental Statement to the NRW 'Resilience Board'.

A clear resistance from NRW to engage in any further dialogue proved a hindrance and by mid-October, with all the necessary elements of the Environmental Statement complete, NRW's permitting team were continuously prompted for a date when a decision on consent would be forthcoming. NRW failed to meet a series of self-imposed deadlines, during which time the permitting officer admitted that the natural resource management team were submitting an ''evidence review.'' The Environmental Statement being presented to the Resilience Board morphed into the appointment of five senior staff to review our work, comment on the evidence and advise the Permitting Team on how they should process the EIA decision. On obtaining the Evidence Review from NRW, it was apparent that all of the evidence and analysis that supported afforestation was acknowledged yet the report recommended that consent should not be given. A rebuttal of the Evidence Review was submitted to the permitting officer in December and further deadlines for arriving at their decision were agreed and missed. A formal complaint was raised in relation to meeting deadlines and the absence of any reference to the detail of the Phase 2 Ecological Survey.

We received a decision on 28 February that consented to afforestation.

Getting consent for Maes Mynach demonstrates deep uncertainty in relation to afforestation and land use change in Wales. NRW does not appear to have a clear approach to assessing afforestation that affects semi-natural habitat, resulting in risk averse decisions that fail to meet the principles of sustainable management of natural resources. When you couple this with Welsh Government's ambitious afforestation targets, that currently have no confirmed funding for 2019, how the forestry industry in Wales is expected to remain positive in the face of so many unanswered questions is a big challenge.

FTN WEB RESOURCES

Read the full report at
www.confor.org.uk/ftnweb

Why it makes sense to import biomass

Matthew J Rivers gives a forester's view

Drax is probably the largest single-site wood user in the world, consuming 6.8 million tonnes of wood pellets in 2017; that's equivalent to over 14 million cubic metres of roundwood. While insignificant in the context of the total global wood products industry, this scale makes Drax a focal point for the bio-energy debate, but the Drax supply chain is often poorly understood. Drax has been working to improve this, providing greater transparency and context with the launch of ForestScope[1], which provides insights into our supply chains and details of every consignment of fibre received by a Drax pellet mill.

The only way to sustainably meet such large-scale demand is to source from regions with vast fibre baskets and abundant surplus fibre which has been the driving force in establishing the Drax supply chain in places other than the UK. For instance in 2017, 59% of Drax's pellets came from the US South and with good reason; the forest resource in the region is on a grand scale, with 84 million ha of working forest. This forest resource has been growing at an impressive rate. Since the 1950s the standing volume has more than doubled to 8.4 billion cubic metres, despite an increase in harvesting over that period of around 57%. Independent research and analysis[2] shows that healthy demand for wood products is directly correlated to investment in forest productivity, increased growth and as a result, carbon sequestration too.

Added to this backdrop of massive surplus (average annual growth exceeds removals by 176 million cubic metres) is the re-structuring of the traditional forest products market. Many pulp and panel board mills closed across the US south over the last two decades as demand for their products declined. The forest owners were left with no viable markets for thinnings and low grade roundwood. As an alternative market the wood pellet sector has played a part in ensuring the economic health of forest investment and that forests are managed and remain as forests.

"This economy of scale means that Drax can achieve supply chain GHG savings of more than 80% compared to coal.

drax

Another common concern about the biomass sector is the Greenhouse Gas (GHG) footprint. How can it make sense to ship biomass from half way around the world? The scale of the operations is the simple answer. The raw wood fibre is dried, ground and pelletised near the forest in dedicated plants each producing some 500K tonnes of pellets. It is then shipped in panama-sized (60,000 tonne) vessels. The pellets are delivered to the old coal ports of Tyne, Immingham and Liverpool and transported from there in a purpose-built fleet of trains to the power station. This economy of scale means that Drax can achieve supply chain GHG savings of more than 80% compared to coal. All elements of the supply chain emissions are collected and reported[3] according to Ofgem guidelines.

Compliance with the Renewables Obligation requires UK biomass users to adhere to exacting standards of sustainability, auditing and verification. Forest Management (FM) certified woodlands can go a long way to ensuring compliance. However, in many regions, particularly the US South, FM certification is not widespread due to low demand from traditional markets and it doesn't include the essential GHG data. To ensure that only sustainable biomass is being used from these supply regions Drax follows a robust sustainability assurance process, including regional risk assessments, bio-diversity mapping, track and trace, third party auditing and the development of a bioenergy specific certification standard that builds on the criteria and values of FM certification. More than 90% of Drax's suppliers are now Sustainable Biomass Program[4] certified. The rest meet Ofgem's strict sustainability rules through similar processes.

Biomass plays a vital role in the UK energy system – Drax is the largest single-site renewable power producer in the UK and the biggest decarbonisation project in Europe. It produced 15% of the UK's renewable power in 2017 – enough for four million households. Technologies like wind and solar are excellent for reducing our carbon emissions and are an important part of the energy mix, but they are intermittent and so need other technologies to support their deployment. Biomass is the only reliable and flexible renewable which can provide the grid with the full range of support services, the need for which is expected to increase as more intermittent renewables come online.

Biomass use for energy should clearly not be unconstrained but sustainable biomass can be an integral and essential component of a robust and resilient renewables portfolio both now and in the future.

Thinned tract in Arkansas

REFERENCES

1 http://forestscope.info/

2 www.forest2market.com/hubfs/2016_Website/Documents/20170726_Forest2Market_Historical_Perspective_US_South.pdf

3 www.drax.com/sustainability/sourcing/

4 https://sbp-cert.org/

RHI – market impacts past, present and future

Neil Harrison looks back on the biomass heating sector and assesses its future

The non-domestic Renewable Heat Incentive has been the driving force in the biomass heat sector since 2011, and has raised the number of commercial systems from around 2600 in 2010/11 by an additional 16,739 boilers. These systems represent a staggering 3560MW of installed boiler capacity, which have generated close to 16,000 GWh of heat to date, and consumed the equivalent of at least 7.8m green tonnes of timber in the process – about 1m green tonnes per year.

While this barrage of stats is impressive, albeit probably a little concerning for some, not all that fuel will have been virgin material from UK forests – a portion will be imported pellet, some will be waste wood, and agricultural and other biomass residues will also have played a part. Overall, biomass has outperformed every other RHI-eligible technology by a country mile. The next-best performing technology – ground and water source heat pumps – have so far managed just over 1000 installations.

This is a fantastic achievement for the UK biomass industry, not to mention an important new market for the forestry sector, but delivery has actually fallen some way short of the original intent of the RHI, a fact which was highlighted in the National Audit Office report issued in February. With an original business case for 513,000 installations by 2020 made by government in 2012, the RHI (domestic and non-domestic) had only delivered 79,960 by the end of March 2018 – forcing BEIS to reduce its 2020 ambitions for the RHI by 65%.

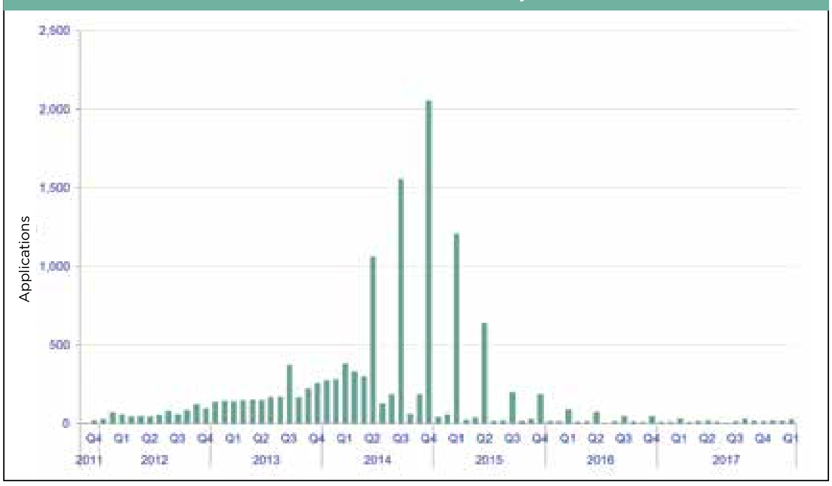
The graph of monthly small biomass boiler (<200kW) installations under the RHI *(right)* tells the story of the installer base, which has contracted dramatically in the last 18 months, and now resembles the industry pre-RHI. March 2018 saw just 33 “medium” systems and two “small” systems accredited for example, and when you compare this with 2000+ small biomass boilers installed in December 2014, the implications for the installer base are clear.

Where is the RHI headed next?

And what type of growth can we expect in the demand for biomass fuel? I won’t dwell on the changes to the eligibility of chip drying, covered by AMP’s Peter Solly (page 45). More changes are now afoot for the RHI, and following the levelling of the biomass tariff across all boiler sizes and the raising of the Tier 1 breakpoint to 3066 hours in September 2017, a raft of new changes were passed by both Houses

of Parliament in May. Only some of these apply to the biomass sector, the most important being the introduction of tariff guarantees. This is a complex process which allows developers of larger projects >>

RHI installation rates for small biomass boilers, Nov 2011 – Dec 2017



>> to lock into tariff rates at financial close, rather than the previous regime, which required the developer to take a punt on an installation in the hope that it's completed and registered before a tariff drop undermined the economics of the whole project.

The new mechanism is by no means perfect, and its implications for the market are not yet clear, but the intention of the changes are to ensure that larger projects will become more attractive and bring them forward to development, which in theory it should. Our own business is certainly seeing a dramatic increase in the size of projects we're being asked to develop for customers, as well as a reassuring number of systems where the RHI is not the primary driver.

Larger industrial process loads, particularly in sectors where carbon reduction targets are set, are likely to be key growth areas, but with just under three years to run for new applications to the RHI before it closes and no news yet on what is likely to follow on in terms of support from 2021, there is likely to be a rush of larger schemes in the next 12-18 months.

Projects of the type which are now coming forward – long run hours on boilers of 5MW and above – will start to present single-point customers for 10,000 tonnes or more of fuel, which arguably gives a much better market opportunity for forestry than dozens of small boilers spread across a wide area. The real challenge will be for developers to realise these larger projects in the limited time available, as installations at this scale will typically have a 2-3 year development timeline, and the window narrows with each day that passes.

Neil Harrison is a director of re:heat, Confor North England Committee member and Chairman of the Wood Heat Association, the main trade body for the biomass heat sector.

IN MY OPINION **NEIL HARRISON**

"The high capital cost of biomass systems means that public support of some kind is key to making projects happen"

It's safe to say that prior to 2011, the biomass heat sector was struggling. The RHI was intended to act like a booster shot, putting a floor in the market and removing the boom and bust of cyclical grant programmes that had characterised the sector for the previous decade. With around £1bn on offer for the first phase of the scheme, and generous tariffs to support biomass systems, it looked too good to be true. In many ways is has been, and I've often referred to the RHI as the best thing and the worst thing ever to happen to the biomass sector.

The high capital cost of biomass systems means that public support of some kind is key to making projects happen, and even very mature markets on the continent still subsidise their biomass sectors to some extent. The difference between the RHI and schemes on the continent is that continental schemes include a quality element, where applicants must meet performance, efficiency and quality criteria in order to qualify for the subsidy, and installers must be experienced, trained and registered.

Contrast that with the RHI, where there are no barriers to enter to the sector as an installer, applications for subsidy are made after a system has been sold, installed and commissioned, and no quality or efficiency criteria are applied. The tariff degression mechanism exacerbated problems in 2014 and 2015, driving huge spikes in the number of systems as customers and installers rushed to secure the higher payments. The combined effect has been a significant number of inefficient, oversized and inappropriately designed biomass systems, and it's small wonder that the sector has been struggling with its reputation after the boom of the RHI.

Wood drying – threats and opportunities with the new RHI regulations

by **Peter Solly MICFor**

Drying woodchip using biomass heat has become very popular over the last few years, with many farms, estates and contractors installing drying systems under the Renewable Heat Incentive (RHI). Until now, drying woodchip and other products has been an "eligible use" for biomass heat, thus receiving the RHI payments.

New regulations are coming into force which will limit the use of biomass heat for drying woodchip, and also affect drying sites operating in the waste processing and management sector. These regulations will have a fundamental impact on how woodchip drying works – both for existing drying sites and potential new ones.

New woodchip drying

In essence, only systems which are already accredited for drying will be able to claim RHI payments for drying. No new applications for drying sites or amendments to existing boiler systems to add a drier onto the system will be allowed, unless the biomass drying is replacing a drying process which has been in place over the last 2-3 years using fossil fuels. These changes will apply to all new drying sites that aim to accredit after 29 January 2018 with the exception of those projects that can provide evidence that the project was definitely underway by that date (ie planning permission received or proof of payment for equipment). This means that in practical terms, the number of woodchip drying sites is now fixed and there won't be any more coming on stream.

Changes for existing woodchip drying sites

The new regulations also have a much tighter oversight on the "eligible use" of heat for existing accredited installations. All heat used for drying will need to be used efficiently. Because producing heat and claiming the RHI can be profitable, there have been cases of people over-drying, or repeatedly drying the same product – or even venting the heat to the atmosphere. This will now no longer be possible.

We see this as excellent news: using heat inefficiently is clearly a nonsense and makes no practical sense were it not for the anomaly of the RHI income. All those working to build a long-term, sustainable and viable wood fuel sector will support the change. Inefficient use of heat simply to 'game' the RHI system is not the way for a credible industry to develop.

The RHI regulations that apply in England, Scotland and Wales give OFGEM the power to retrospectively re-claim RHI payments where eligible use can't be effectively demonstrated and also to prosecute for fraud in extreme examples. There are already cases of this happening which haven't been well publicised but demonstrate that OFGEM have both the teeth and the willingness to use them where appropriate.

Opportunities for the sector

In certain parts of the country there are a large over-supply of accredited woodchip drying sites. Now that new biomass drying will not be allowed, there is a big opportunity for these existing sites. However, at the same time, there is a threat, in that they will need to demonstrate they are drying effectively – and in practical terms this means having customers they can sell their dry woodchip to. There is a big risk that without enough customers, the drying sites will not be able to claim the RHI revenue they expected to be able to when they installed the system, because they won't have anything to dry; and tougher enforcement from OFGEM will ensure that it will not be sensible to operate inefficiently. We expect to see a fundamental change to how many of these drying sites are operated.

All of this creates opportunities for collaboration between the grower or harvesting contractor, the drying site, and the company with the end user contracts to supply woodchip to heating systems. Each of these three parties has something the other two parties need, and by collaborating each party can maximise the profitability of their sector.

Harvesting contractors and estates supplying small roundwood to local drying sites will maximise the delivered in price while minimising haulage cost. Drying sites will need customers which can take a high volume of woodchip; and being the 'retailer' of fuel (which is what dry woodchip is) is complex and about much more than delivering a lorry load of woodchip. For most drying sites, the biggest opportunity is likely to be in partnering with specialist energy suppliers who can take large volumes of dry woodchip, and underpin a secure "eligible use" of heat for the long term.

Peter Solly MICFor was Managing Director of Forest Fuels for 8 years. Forest Fuels is a woodchip & wood pellet supplier to end user customers, operating nationally from a network of local depots, many of which it has run in partnership with local drying sites for several years. In 2016 it became part of AMP plc, where Peter now works.

German research is helping to throw light on the efficiency of wood chip

Evaluation of rapid moisture content determination systems for wood chips

Accurate moisture content determination of wood chips is crucial during fuel production and distribution. However, the standardized method, ie oven drying according to EN ISO 18134-2, consumes both time and labor. Thus, newly developed gravimetric or electric methods may be suitable alternatives for moisture content determination.

Nine manual devices, ie two infrared driers, three capacitive devices, three electrical conductivity devices and one time domain reflectrometer (TDR) were tested at Technology and Support Center (TFZ) in Straubing, Germany. Measurements were done with five different wood chip assortments, ie with wood chips from conifer and deciduous forest residues, with energy roundwood of Norway spruce and European beech and with short rotation coppice of European poplar at moisture content levels from 10 to 55 w-%.

Mean instrument deviation ranged from 0.1 w-% (33.5 w-% standard deviation) to 4.0 w-% (34.7 w-%, see Figure 1). Highest accuracy was achieved with the Satorius MA35 infrared dryer. However, both tested infrared dryers use very small sample sizes. Since fuel quality of wood chips is usually very heterogeneous in large shipments, less accurate but more rapid instruments that allow for larger sample sizes or a higher number of samples within a short period of time could lead to overall higher accuracy for the assessment of a whole lot.

Precision of electric devices was lower compared to infrared driers. Thereby, instrument accuracy depended on the wood chip assortment and the moisture content range. If possible, electric devices should be calibrated to the selected fuel.

Overall, the high accuracy of the reference method could not be met by any of the rapid determination devices. Thus, these instruments are only partly suitable for fuel sales. However, all devices are deemed suitable for internal quality management systems or for rough assessment of fuel quality at heating plants, e. g. to test whether or not a wood chip shipment should be rejected due to exceeding moisture contents.

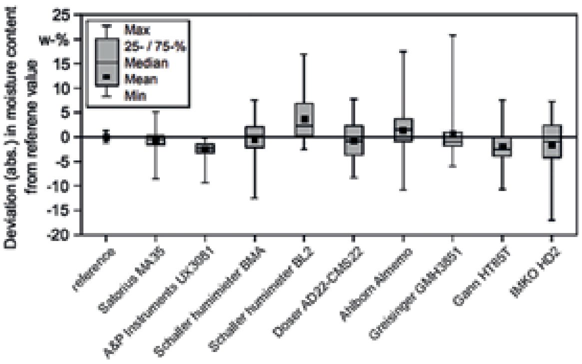


Figure 1 Measuring deviations from the reference value for the manual rapid moisture content determination systems

Short rotation coppice (poplar) in Germany during winter

Fuel quality and combustion behavior of wood chips from short rotation coppice

Fuel quality and combustion behavior of wood chips from short rotation coppice (SRC) was investigated in two Bavarian research projects. Thereby, fuel quality of SRC was similar to the quality of forest residue wood chips regarding ash content or particle size distribution. However, samples had higher moisture contents and were enriched in combustion critical chemical elements such as sodium, cadmium, zinc or aerosol forming elements (e. g. potassium).

Technical drying of the fuels reduced moisture content efficiently. In contrast, natural drying in unchipped storage piles at field sites during one summer, i. e. a common agricultural practice in Germany, did not always lead to a reduction of moisture content < 30 w-% that is necessary for the use in >>

>> most small scale boilers (< 100 kW). Screening of fuels reduced ash content and the concentration of critical chemical elements. However, the reduction of sodium and chloride was low while the reduction of aerosol forming elements was more pronounced.

Combustions trials with SRC chips were performed using a 50 kW tilting grate boiler (HDG compact 50). Emissions of CO, NOX and total particulate matter (TPM) were higher for SRC chips compared to coniferous wood chips (forest residues, energy roundwood). CO emissions increased with fuel moisture content. NOX and TPM increased with high concentrations of fuel sodium and aerosol forming elements, respectively. Soot formation as a consequence of incomplete combustion due to overall low energy densities of SRC was considered to add to the high CO and TPM emissions. Additionally, two case studies were performed using SRC chips in the 1.3 MW biomass heat plant at TFZ. Once again, NOX and TPM were higher compared to combustion of forest residues due to higher shares of critical chemical elements while CO emissions increased with high moisture contents. Thus, fuel quality management is recommended for the use of SRC in larger heat plants, as well.

In conclusion, SRC chips are a more challenging fuel for both small and medium sized boilers compared to wood chips from forest wood. New developments of primary and secondary boiler techniques (e. g. boiler design with consequent pre-gasification, electrostatic precipitators, etc.) might be necessary to ensure low emission combustion of SRC. Overall, SRC might be a more suitable fuel for larger biomass plants.

RESOURCES

The studies are published as TFZ reports No. 52 (above) and No. 56. German versions available at **www.tfz.bayern.de**.
For English versions, please contact TFZ.

CONTACT

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Investors 'missing a trick as forestry sector outperforms other assets'

Philippa Cliff *argues that* investors are missing out on healthy returns in the forestry sector, which has been boosted by tax incentives and increasing global demand for timber

Commercial forestry has been the top performing asset in the UK in the past 15 years, with the best woodlands generating returns in excess of 10% a year. Despite this impressive performance, there are actually very few investors active in the market. Woodland seems to be considered as an investment option only by a few people in the know. Timber is currently the fourth biggest UK import, but a weaker pound has pushed up import costs, fuelling an immediate rise in timber prices and increased demand for home-grown timber. Planting land is relatively inexpensive to acquire – in Scotland it is currently less than £5000/hectare despite experiencing a rapid rise in value in recent years. With payment rates of £3840/hectare for diverse conifers, £5520/hectare for commercial broadleaves, and £3200/hectare for native broadleaves, plus enhanced rates in target areas, growing trees can offer better prospects than sheep farming.

"The solid returns for investors are likely to continue in the medium to long-term because of three factors – firstly the growing biomass sector which uses wood as a biofuel, secondly, the global demand for timber, which is expected to increase by an additional 33% by 2050, and thirdly the Forestry Commission's Woodland Carbon Code, which allows forest owners to trade in woodland carbon units. Investors can also offset carbon emissions from other business interests against these carbon units, if they so wish."

In addition to the very attractive returns, the tax system is geared towards helping those who invest in woodland. No Income Tax or Capital Gains Tax is payable on the sale of timber and commercial forests are entitled to 100%. Business Property Relief from Inheritance Tax after two years of ownership.

We would advise prospective investors to take advice but to not be daunted by the prospect of investing in something that is unknown to them. This is a stable asset class and now is a good time to make the most of the planting grants and tax incentives available.

Philippa Cliff, is head of the forestry division at Galbraith, one of Scotland's leading rural management and property consultancies

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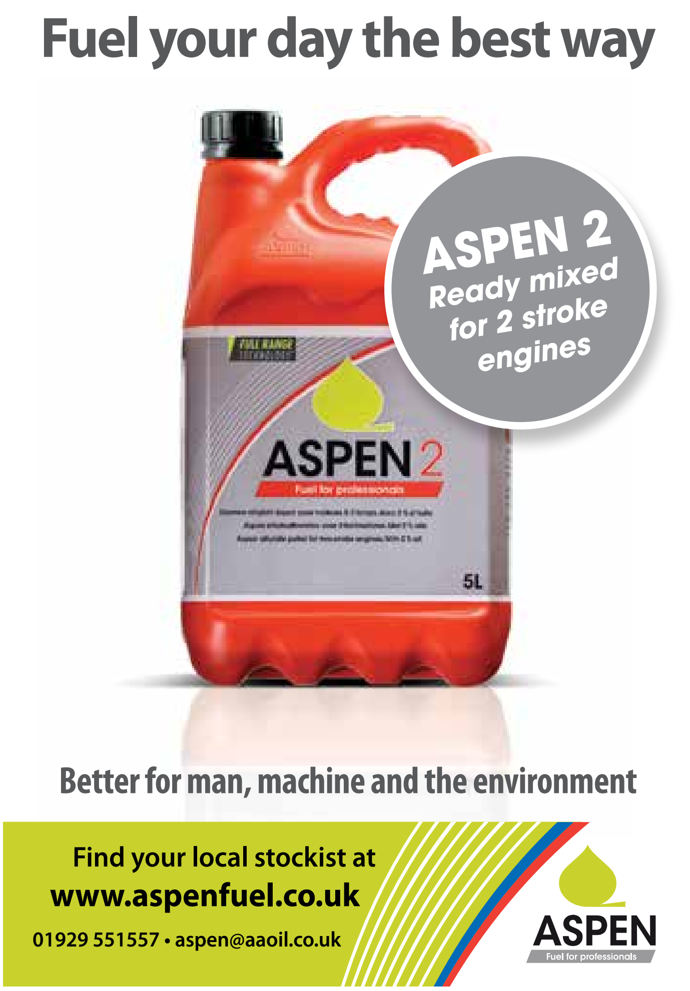

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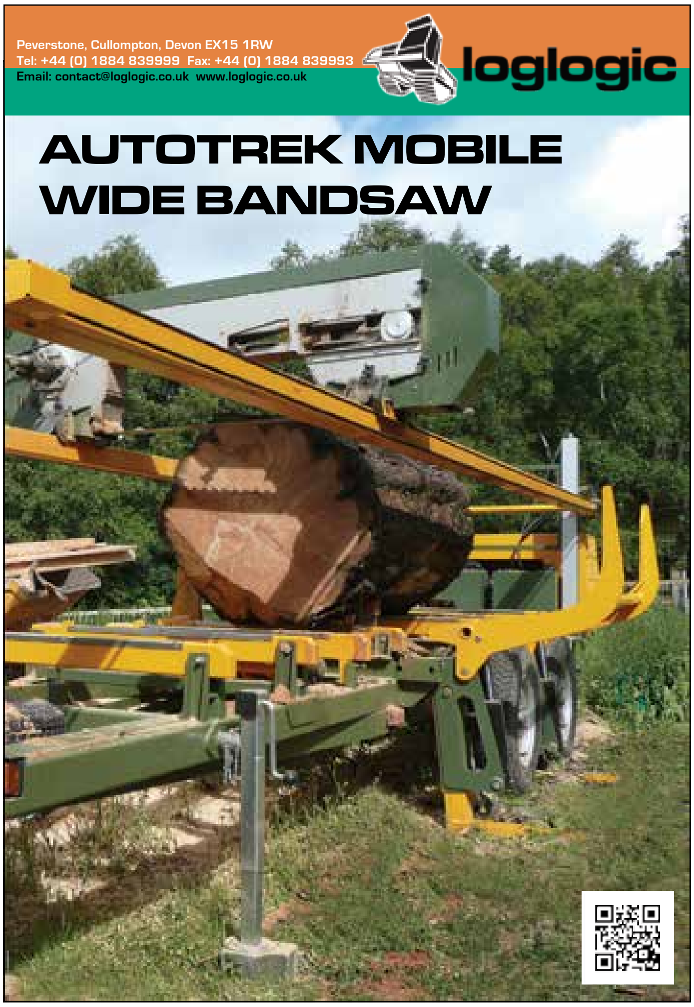

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A tale of two halves

TIMBER AUCTIONS MARKET REPORT

Oliver Combe
Timber Auctions

The last three months have seen frenzied activity in the UK timber market with standing and roadside timber prices continuing to reach new highs. Whilst the high prices have brought large amounts of timber to the market in the North, supplies in England and Wales remain very tight and there are serious concerns over continuing availability.

Domestic trends

After a slow start to the year demand has really picked up and most producers are now running flat out to try and keep up with demand. Stocks in the forest and yards are virtually non-existent and the supply chain is living hand to mouth and there are again signs that demand is increasing.

Lead times of two to four weeks are being quoted on key products and in some instances, mills will not offer prices as all the available product is already committed.

Whilst conditions for harvesting in the forest have improved, (better weather and longer daylight hours) most machines are working at full capacity and the haulage resource is severely stretched so it will take a while to actually build some stock in the supply chain.

Whilst availability in Scotland has improved significantly there is still very strong demand for all products.

There remain real challenges in England and Wales where the timber is not coming to the market in the quantities required and buyers are fighting to secure supplies at any cost.

There appears now to be a serious issue with the time being taken to issue felling licences. After a long period of time where four to eight weeks was the norm for thinning licences and 12 weeks for clearfell, agents are now reporting delays of 12 to 16 weeks for thinning licences and longer for clearfells.

This is particularly frustrating for growers who wish to capitalise on the current strength of the market but cannot get their felling approved.

Impact on the market

Prices in Scotland appear to be stabilising now with good quality spruce parcels continuing to achieve £50 to £60 per tonne standing, there is now a greater spread of prices but also an increase in the number of bidders as increasingly timber users see buying the tree as the key to securing supply.

The demand continues to spread across all sectors and robbing Peter to pay Paul seems to be the order of the day. Small roundwood users are pushing further down the tree to increase their supplies and cutting logs at 20cm top diameter whilst saw-mills are pushing down to 16cm and even lower in good crops to maximise log break out. The pallet mills, shavings markets and smaller biomass users that take the middle of the tree are increasingly being squeezed out.

The knock-on effect is that they still need to secure timber and start to look at other ways to buy it including the purchase of standing timber and also look for new supply partners.

Many smaller biomass markets who have traditionally relied on 'delivered' supplies are now struggling to get supplies and are having to look further afield and pay higher and higher prices to secure their requirements. The cold winter has increased consumption and the interruptions to supply have led to a general run down of stocks. So, whilst in a normal year we would be seeing a slow down in biomass demand in early summer this has not been the case in 2018.

In England and Wales, the shortage of supply has continued to drive prices upwards with recent sales in England and Wales topping £70 per tonne standing for good quality sawlog parcels and roadside small roundwood seeing prices of £50 per tonne at roadside in some areas.

These prices are exceptional but it is

£ per tonne delivered to customers in Wales, central and south England

Product	*Lower price*	*Upper price*	*Trend*
Log 18	£70.00	£90.00	= ↑
Bar 14	£55.00	£70.00	=
SRW	£45.00	£60.00	= ↑
Fencing	£50.00	£60.00	= ↑
H Wood firewood	£55.00	£65.00	↑

£ per tonne delivered to customers in north England and Scotland

Product	*Lower price*	*Upper price*	*Trend*
Log 18	£75.00	£85.00	=
Bar / pallet 14	£50.00	£65.00	=
SRW	£40.00	£50.00	= ↑
Fencing	£50.00	£55.00	= ↑
H Wood firewood	£45.00	£55.00	↑

These prices are for guidance purposes only and are based on historic market information.

Roadside hardwood prices (£ hft) May 2018

	Oak planking	Oak beam	Oak fencing	Oak cordwood	Export ash & beech	White ash sawlogs	Export sycamore	1st grade firewood
High price	£9.00	£8.00	£6.00	£1.40	£3.25	£5.00	£5.00	£2.00
Mid price	£8.00	£7.00	£5.00	£1.25	£2.75	£4.00	£4.00	£1.80
Low price	£7.00	£6.00	£4.50	£1.00	£2.00	£3.00	£3.00	£1.60

These prices are for guidance purposes only and are based on historic market information

questionable as to how sustainable they are. Most sawmills are struggling to reach an average selling price of £200 per m^3 for their sawn timber which would give them a break-even price of around £80m^3 delivered for sawlogs which supports standing timber prices of around £50 per tonne for good clear fell parcels. Whilst the biomass industry is heavily subsidised prices of over £50 per tonne delivered for small roundwood must be very marginal.

Hardwoods

Oak prices continue to strengthen across all grades and availability remains challenging. UK grown material is now in some instances at a premium to imported oak logs, is this a sign that buyers are putting extra value on provenance and character?

Whilst availability of ash has significantly increased the demand for ash is good from the exporters and beech is improving. Locally poplar demand has improved and there are also reports that the export demand for poplar is improving.

The firewood market will be interesting this year, most merchants have had strong sales over the last winter and have finally cleared the backlog of stock. They are now out looking to secure supplies, but in the Midlands and the north of England there is very limited stock and it is difficult to find good quality firewood parcels ready to work. This is further compounded by the fact that this year many of the harvesting gangs are fully committed on softwood jobs until late summer. In the short term it appears that supply of firewood will be constrained and prices will continue to increase.

Summary

There are now real concerns that timber prices are overheating and that it is a time for caution. Some recent prices are not sustainable and at some point, there will have to be a market correction. Hopefully supply will increase over summer, prices will stabilise, the need for panic buying will stop and we will be able to enjoy a golden summer and autumn.

GLOBAL TRENDS

Demand continues to outstrip supply

Global demand for timber continues to rise and competition for supplies is still driving prices upwards. Demand continues to outstrip available supplies.

US timber prices are at record highs with the benchmark 2x4 spruce, pine, fir hitting a new record price level of $598 in the first week of May, this was an increase of 6% on the previous week and 48% on the year.

Exceptionally high order intake, generally increased demand and backlogs of orders are putting mills under serious pressure, now production is increasing availability of haulage has become a major challenge.

As a rough comparison, this is equivalent to £250m^3 for UK C16 Kiln dried carcassing.

UK prices are not yet at this level but the producers have been robust in pushing price increases through over the last five months but are now sensing that they are nearing the upper limit. Most regions are reporting increasing prices as well as increasing harvesting activity although crucially stocks remain low. As we move into summer, supply from the forest should increase and demand will start to steady which should see stocks start to improve and global prices stabilise and settle.

UK continues move towards more alignment with wider European market

TIMBER MARKET REPORT
Harry Stevens
Timber Buying Director,
Tilhill Forestry

The market for standing timber continues to surprise long-term observers and participants with its seemingly ever upwards movement of the standing price that processors are having to pay.

Despite more standing parcels being offered to the market, processors would appear not to have filled their inventory's to a point where they are happy to back off from the 'frothy top' of the market.

Reflections on long-term trends in the sector suggest a gradual erosion of the distinct regional nature of the market, and indeed one where the British market is becoming more aligned with the wider European market. Processors are importing roundwood from mainland Europe and Ireland, whilst exports of saw logs, roundwood and co-products continue. Similarly, mill gate prices are more reflective of those seen in Europe.

Co-products

The co-product market which traditionally has been the least volatile part of the sector is now starting to see more activity, driven in part by the increases in small roundwood price, the need of the sawmillers to recover more value, and changes in the recycled market.

Whereas twelve months ago users of low grade recycled material were charging a gate fee for receiving 'C' grade material, they are now having to pay prices into double figures for some of their material. This is in response to a number of factors, including the increased number of wood burning plants, with in excess of a million tonnes of capacity coming on stream in the UK over this year, and Great Britain now being at 'peak' waste wood recoveries. The result is continued pressure on the new and traditional users of small round wood.

> All processors of round wood have pressures on them around raw material prices and security of supply

S Kaiser / Confor

When this is allied to a position where some users "simply cannot run out of wood" then this puts considerable stress onto buyers of these products.

Saw logs

The market for saw logs, whilst not quite seeing the above pressure, continues to rise. Perhaps uniquely in this business cycle the saw log price started to rise before the sawn price increased. This trend has continued with saw log prices moving strongly ahead, and sawn prices lagging behind. As a result, at least in part, some mills have had their production schedules dictated by log availability.

The traditional spring fencing surge has yet to really take off, presumably because of the late winter. This perhaps should be viewed as not a bad thing as there was little stock of sawn in the supply chain and an upsurge in demand would have created considerable shortages. We could, of course, still see this become a reality. Already, lead times of over a month are being quoted by some producers.

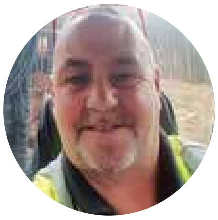
Pallet sector

The pallet sector has also seen considerable pressure with shortages of product for the major pallet producers. This has consequently reflected up the supply chain with pallet wood producers being badly squeezed as the biofuel users increasingly compete for their raw material.

In short, all processors of round wood have pressures on them around raw material prices and security of supply. The latter factor is causing considerable polarisation in the market and seeing an increasing trend where users of round timber are increasing harvesting themselves. Almost without exception they are at best only partially able to pass these costs on to their end users. This in the long term is not sustainable. The question is will we have a hard landing or a gradual plateauing of the market price?

All in all, it still remains a very good time to sell standing timber.

www.tilhill.com



With a buoyant market for firewood is buoyant and looking to stay that way for the foreseeable future, **Rab Easton** looks at some mid-sized firewood processors.

KEEPING THE HOME FI

In the 1980s, in addition to contracting in the forest, I had a lucrative firewood business. I had two pick-ups which were busy delivering firewood most of the winter - this was a boom time for the industry with most houses having open fires, wood burners and the occasional Rayburn.

Although coal was a popular source of fuel, most people liked to mix firewood with the coal as it produced more flames and created a nice fragrance when burning.

The nature of contracting meant you were always waiting for your money as the timber had to be hauled off site and sold to a sawmill before payment. However, firewood was different as most people paid "cash on delivery".

This was a great help with cash flow to a struggling young forestry contractor, but unfortunately the firewood bubble burst due to the demise of open fires when smokeless zones were introduced and oil and gas became the fuel of choice.

However, due to the increasing awareness regarding the environmental damage caused by fossil fuels, there has been a growing interest for using wood as a sustainable, renewable, low carbon alternative.

Carbon dioxide (CO_2) is a contributing factor to climate change, so anything that can be done which will help to reduce the amount of CO_2 in the atmosphere can help in tackling climate change.

Using fossil fuels such as coal, gas and oil releases

Left to right: Dalen 2054, Palax Combi Mk 2 C700 and Rabaud Xylog 390

Below: Posch S-375

RES BURNING

carbon into the air as CO_2. These resources took millions of years to create, but they are being used up within a few centuries and at a far quicker rate than the global carbon cycle can cope with. In contrast, burning wood is largely carbon neutral, with the CO_2 absorbed as young trees grow to compensate for that released by burning.

Trees planted for woodfuel can provide a never-ending, sustainable supply of wood; as long as trees are replaced as they are felled, the whole process is renewable.

The carbon dioxide released into the atmosphere by burning wood will be locked up again and stored by the new trees grown for the next crop. The only increase in atmospheric carbon dioxide would come from transport and processing. It is among the most climate-friendly forms of power available to us.

This has been great news for the firewood market and consequently there has been a huge increase in the development and sales of firewood processors.

There are firewood processors made to suit all types of uses and budgets from weekend hobby firewood merchants to firewood wholesalers supplying large supermarkets, garden centres and garages. There is an excellent range of quality reconditioned and almost new ex-demonstrator machines for sale and many of these are available with warranty.

We are looking at some mid-sized, professional, best-selling firewood processors that are capable of being used continuously.

Dalen 2054

Dalen is manufactured by the Lid Jarnindustri AS in Norway, who have been trading since 1948. In 1984 they invented the first firewood processor, the 1254 model, which is known as the mother of all processors. The 2054 can be operated by a tractor PTO (minimum 40hp) with single phase or three phase electric power options.

>>

>> A hydraulic in-feed delivers the logs to the chainsaw, which can cut them at intervals of 5cm from 15-40cm. The chainsaw can cut up to 44cm diameter with the 54cm bar and .404 harvester chain. Each time the saw is operated it lubricates the chain. It has an 11.3 tonne splitting force with standard knives of two or six-way splitting, with an option of four or ten-way splitting. The out-feed conveyor can be positioned or turned for easier loading.

An easy to use, high quality, efficient processor giving an effective system for firewood production.

www.marshalllogging.co.uk

Japa 355

Japa 355

Laitilan Rautarakenne, known as Japa in the UK, was established in 1977 by Jari and Jarmo Paavola in Laitilia in Finland. Their initial goal was to manufacture equipment which would make agricultural and forestry work easier.

The company is now owned by the Terra Patris Group and their products are exported to several different countries. This accounts for 75% of their production.

Fuelwood are the UK agents responsible for sales, servicing and spares with depots in the Midlands and Scotland.

This processor is simple to use and the fully hydraulic operating system can be driven by a tractor PTO, an electric motor or both. It has an in-feed conveyor, hydraulic chainsaw with a 0.375" or 0.325" 15" saw chain capable of cutting up to 35cm wide logs in adjustable lengths up to 60cm. It has a seven tonne splitting force with a 2/4 or optional six-way splitter and a 3.8m out-feed rotating conveyor belt for loading the logs into a trailer or sack. Furthermore, it has a safety interlocking one-piece guard which completely covers the cutting area and can be fully opened for maintenance.

It weighs 565kg for the tractor driven model or 595kg with the electric motor.

This processor can easily handle bent and awkward logs and comes with a full 12-month warranty.

www.fuelwood.co.uk

Palax Combi Mk 2 C700

Palax is another well-established Finish company which has been manufacturing forestry equipment for over 60 years. They have an extensive network of worldwide dealers and are available in over 30 countries.

This model can be powered three ways: by tractor driven PTO, Electric motor or a Honda petrol combustion engine. A combination of v-belts (the belts are self-tensioning, which reduces the strain on the transmission and extends the belts life) and hydraulics operate this processor. The cutting is performed by a circular saw blade which is able to cut up to 25cm. The reason for some of their processors using a circular saw is that although the cutting diameter is slightly smaller than a hydraulic chainsaw they produce less sawdust and are less susceptible to jamming. The metal blade cuts the wood quickly and requires significantly less maintenance; it can also be changed in seconds with the quick release system. Firewood lengths from 25cm to 60cm can be cut using this process.

The high-speed valve maximises the splitting speed and it can be fitted with a two, four or a six-way knife with a splitting force of 5.6 tonnes.

The conveyor is fitted with a lifting winch and a convenient chain lock. Getting the conveyor ready for operations or to transport on the tractor is quick and simple.

There is also a wheeled towing package which will convert it into a mobile, road legal and easily transported processor.

This is a safe, fast, productive firewood processor which requires minimal maintenance.

The UK distributors, Caledonian Forestry, are the global leader for Palax sales and have sold in excess of 1000 processors.

UK Sales www.caledonianforestryservices.co.uk
Ireland Sales www.oakleafforestry.com

Posch S-375

Posch processors are manufactured in Austria and have been involved in the firewood industry for almost 70 years. A lot of the components for the processors are manufactured "in house" by the company's skilled workforce. The 170 employees are committed and passionate about the work they do.

The S375 is an updated version of the tried and tested S360 Turbo model with some improvements. This has made it even more user friendly with a quicker operating speed whilst retaining the quality and reliability expected from Posch equipment. It is operated via a one-handed joystick.

This processor has a three-way power system, tractor PTO, Electric and combustion engine options.

The logs are fed into the circular saw via the hydraulic in-feed, which can process logs up to 37cm in diameter and they can be cut into 20-50 cm lengths.

The splitting force is 12 tonnes and logs can be split into two, four, six or eight pieces before being loaded into a trailer or sacks via the 4m long angled conveyor belt.

This processor is capable of 20m^3 of loose fire- >>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wood per hour, and with the turbo package this figure can increase to an extremely impressive 25m^3 per hour.

A wheeled, road legal option is available with this model.

Jas P Wilson have a network of engineers covering the UK and Ireland.
www.jaspwilson.co.uk

Rabaud Xylog 390

Claude Rabaud was a French farmer who started manufacturing in 1974. In 1980, his company moved to their current premises where 200 people are employed manufacturing over 8,000 machines each year. The company is currently managed by his two sons, Éric and Jérôme Rabaud.

There are two power options: a tractor PTO (35hp minimum at the PTO) or an 18.5kw electric motor with a PTO (available from Rabaud).

It has a hydraulic in-feed to the carbide tipped circular saw blade which will cut up to 39cm in diameter. Log lengths can be set to between 20 and 50cm at 5cm intervals. A splitting force of up to 13 tonnes is available with the option of two, four, six or eight pieces. There is a 4m conveyor, which can be adjusted for different heights with a hand winch for loading the firewood into waiting vessels.

A good, reliable, easy to use processor designed for professional use.
www.homeforestry.co.uk

There are many extra options available for all these processors to speed up production including log loading decks, bagging units, lifting loading tables, sawdust collectors, etc.

All of the processors explored above will cope with both hard and softwood firewood and can handle awkward and bent firewood safely. These models are made by long established manufacturers with excellent reputations for quality and reliability, so it is a question of which model or make best suits your needs and budget.

This is only a small selection of the manufacturers available.

Rab Easton is the editor of the bi-monthly Forest Machine Magazine. He is a second generation logger with over 40 years of hands on experience in timber harvesting. Rab's magazine is available both in print and online and he is very active on Twitter and Facebook.
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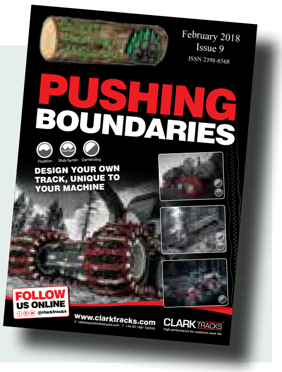


A significant step in the right direction for woodland owners

by **Guy Watt** (John Clegg's & Co)

Doug King-Smith bought a small wood in Devon on the edge of Dartmoor National Park called The Hillyfield. The property comprises 20ha, nine of which are woodland; the rest is pasture. The woods are a mix of broadleaves and conifers and are classified as ANW or ASNW. Having already picked up an understanding and experience of woodland management, Doug and his wife were interested in converting all the woods back to native broadleaved trees with the help of volunteers and adding as much value as possible to all the woodland produce. Doug and his wife and family lived about 9 miles away.

Like all good woodland owners Doug made enquiries with the Dartmoor National Park Authority (DNPA) about whether he would encounter any planning issues if he purchased the wood and proceeded in managing the wood using volunteers. No issues were raised.

The previous owner had mainly used the woods for shooting and had paid relatively little attention to their management. However, there was an old wooden hut on the property tucked away in a small quarry. Doug acquired an old lorry body for storing his tools in the quarry, a couple of caravans and a yurt where overseas volunteers could sleep from time to time, a large tent for catering, a tarpaulin to work under for adding value activities when it was wet and a couple of composting toilets.

> From Doug and Clare's point of view the DNPA seemed to have no understanding of what they were trying to achieve

With the help of Rupert Lane, who is a retired senior woodland officer with the DNPA, Doug submitted a Woodland Management plan to Forestry Commission England that was subsequently approved. Planning the long term management of the woods was and remains a challenge as there was a significant area of larch trees that had to be felled due to Phytophthora ramorum (ITALIC)

To add as much value as possible to all the woodland produce, Doug initially started producing firewood and he also bought a mobile saw. Both these operations need a covered area for drying. Doug constructed some simple wooden structures in the quarry.

Doug applied to the DNPA for planning permission to build two small wooden barns; one for storing his tools and equipment to replace the lorry body and another as a drying shed. What followed was an exchange of correspondence and a series of visits from DNPA staff spread over a period of almost 4 years. The DNPA considered the buildings unnecessary and said that Doug should sell any standing trees or logs to outside buyers. They also said that the use of volunteers and the occasional open days for the public was a change of land use and required planning permission. Subsequently Doug proposed putting up a covered workshop with basic accommodation for volunteers to replace the two old caravans on site.

From Doug and Clare's point of view the DNPA seemed to have no understanding of what they were trying to achieve, and the prospect of not being able to manage their wood became an increasing worry for them. Many small woodland owners would have given in at this point, but Doug and Clare felt sufficiently strongly that they were prepared to go on to a Planning Inquiry if necessary.

Knowing that going to a Planning Inquiry would be very costly for them, they set about raising £40,000 to pay for professionals, including a barrister, to support them in presenting their case. By organising fund raising events and using crowd funding, they managed to almost reach their target. Doug also enlisted a great deal of local support and help from well known countryside personalities and the local MP. While fund raising was taking place, the DNPA served two Enforcement Notices that required the removal of all structures and cessation of running 'training courses' on site.

The Planning Inquiry opened at the DNPA's office on 10th April. Four members of the public spoke in favour of Doug's plans. After the Inspector visited the site to see it for herself, the DNPA indicated that they were prepared to deem the buildings he wanted to be 'reasonably necessary' and they would be prepared to enter a Compromise Agreement. They were also prepared to allow two caravans on site, rather than allow any form of accommodation above the workshop, as the caravans would be covered by caravan legislation.

What is the importance of this case? It lies in the recognition that even in a National Park, value adding activities to timber can be deemed to be 'reasonably necessary' and small wooden barns required to support these activities also come under this definition. This is of particular significance to small woodland owners who want to bring their woods back into active management, but have been prevented from doing so by the attitude of the planning authorities.

www.thehillyfield.co.uk

Keeping timber hauliers safe in the forest

by **Neil Stoddart**, JST Services

The stereotypical logging truck driver is a super tough guy, he can of course handle the big rig, the rough roads, long hours, work in all weathers and still jump out the cab wearing only a faded V8 tee shirt and put co- workers into their place with an instant sharp witted tongue.

Whilst this vision sometimes isn't that far from the truth, todays drivers are a much-changed breed. Firstly there are both guy and gals out there in the forest, and these days they are all thoroughly professional and qualified drivers, but secondly, and alarmingly..... the species is now in decline.

The average age of many experienced teams is often into the fifties ... so to encourage young blood in, and also look after the hauliers we have, we need make the sector a safe and positive place to work. Here's a few simple pointers keep your drivers / haulage contractors safe and well.

Risk assessments

At JST, risk assessments start with 'Operational Management'. Establishing who is in charge of the works is paramount, both on site and at management levels. Clear definition of roles at the start is key. It's a cliché, but always remember the 6 Ps:

Proper Pre Planning avoids Piss Poor Performance

Risk Assessments should be simple, functional, have understanding and buy in. The hirer of the service or plant should ensure that even in a modest form, there has been an exchange information in both directions and that this gets to the driver. If there is something out of the ordinary, have an onsite discussion. Record it. Between all parties, there should be the necessary knowledge, skills, training and experience to devise a safe solution. These type of chats are now called Tool Box talks by the way.

Site safety

As a haulier, we can play our part on sites but remember drivers are entering the forest and worksite that is managed by others. Don't go into a forest without a clear site map that shows the hazards. This should have been completed by the Forest Works Manager and should get to the driver.

Roles and responsibilities - Drivers should know who the Site Safety Coordinator is, and by the way, Jimmy in the forwarder should clearly know in advance that he has actually been nominated for this role.

Surely we all know by now that we need good site hazard signage and goal posts etc as absolute basics. Adequate site welfare of course remains a grey area – who is going to pay for that then?, Forgetting the forest end for now, if facilities aren't good at the mill or dockyard, someone is contravening Workplace (Health, Safety and Welfare) Regulations 1992, ACOP L24, Regulations 20 & 21.

All vehicles in the forest, including site supervisors, should be carrying spill kits, fire extinguishers and provision for delivery of First Aid. Do you know where you are? Is there a phone signal, if not where is it ? has this been marked on site ? Basic Emergency planning can be undertaken simply with FISA 802 guide completed for every site. Lone working – most trucks are sat tracked these days and this technology has pushed this area forward greatly.

> The only thing worse than training your employees and watching them leave, is not training them and having them stay

I could write a book on forest roads that aren't fit for purpose. Weather plays a part, but continuing with haulage operations when we should really stop due to poor road condition is the single biggest site issue that logging drivers face, causing risk to life & limb both short term (incidents) and long term (wear and tear to tyres/brakes etc).

Let's not beat about the bush here, I suspect many Forest Works Managers don't realise that fail-

ure to include health and safety as a key business risk in roading decisions can have catastrophic results. Many high-profile safety cases (don't be mistaken - we're talking fines and jail here) over the years have been rooted in failures of manager leadership. Make the right decision and do the right thing with road maintenance!

Training

Skills development is often overlooked. Remember that the only thing worse than training your employees and watching them leave, is not training them and having them stay. It doesn't need to be onerous. We try and make driver CPC relevant, plan First Aid courses to be exciting, and undertake simple tool box talks. The world of 'online resource' for training is great. Most drivers have tablets laptops in the cab – why not sign off a course in the evening? The new FISA Haulage safety guide is excellent – get them into drivers' hands.

PPE

A borrowed viz vest covered in oil and grease isn't going to cut it these days.

Good clean PPE is the vanguard for your own professionalism, your business/ and how you treat staff. Keep it functional and simple. Go for quality kit. Check helmet dates, replace worn out stuff. If you think that it's a menace to have to wear Viz/Boots/ Helmet, wake up folks... because within 5 years you can add gloves and glasses to that list as a minimum requirement especially in mills and timber yards.

Stay safe out there!

Occupational health for timber hauliers (and other men)

This is a big subject. Did you know that one man in five dies before he's old enough to retire, two in five before the age of 75.

Makes you think, eh? But we're a tough breed up in the woods aren't we? Hmmm... except we all know someone who's suffering from this or that or worse. We wouldn't run expensive machinery without regular checks and proper servicing so as to increase the longevity and value of that asset. So please keep your engine tuned and serviced.

I know that in particular for lorry drivers, it's not always easy to eat healthily on the road. The ticking clock of the tachograph means that whilst the driver would probably prefer to take a 10-minute detour to the nice new craft deli in the next village for a salad and a flat white, the driving time left dictates it's going to be the chippy again. No one is going to risk six points and a fine for some lettuce no matter how nice the dressing. What an industry. Quite literally Food for Thought.

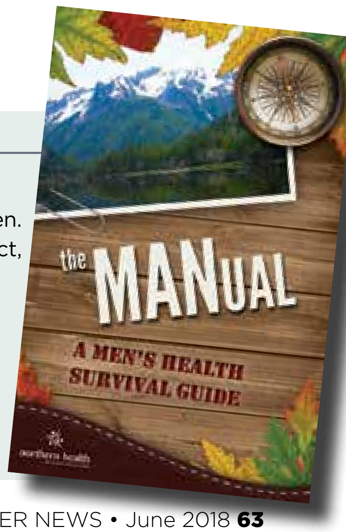
RESOURCES

Your new bibles

The Canadians really look after their tough men. We perhaps all need to drop the tough man act, read this type of information and follow it, it might buy a few more years...

The Manual – a men's health survival guide
www.men.northernhealth.ca

The Man Manuals (Men's Health Forum)
www.menshealthforum.org.uk/man-manuals



Sporting rates in Scotland are back

by **Jamie Farquhar**, national manager for Scotland, Confor

Few people if any will have welcomed the reintroduction of sporting rates, and that will include the regional assessors, who were set an almost impossible task to have appropriate entries in the valuation roll by this time last year. As a result, they were only able to issue valuation notices for about 10,700 properties for the 2017/18 rates year, whereas they believe there may be about 55,000 entries to make in total.

Assessors are now issuing the second tranche of notices, and there may be a third tranche later this year. Members are reminded that if they or their clients have received sporting rights valuation notices from their regional assessor, any appeal against that valuation must be made within six months of the notice, otherwise the opportunity to contest the valuation is lost until the next national revaluation (or possibly on a change of ownership/occupier).

And we suggest to members not to rely on any rates relief they may be able to currently claim under the Small Business Bonus Scheme (**www.mygov.scot/small-business-bonus-scheme-scotland**). This relief is subject to annual review, and last year was a focus of the Barclay Review on non-domestic rates – it may not be there in the future. Certainly claim whilst ye may, but we do not think it should be regarded as a reason not to appeal your assessment.

Appeal assessments

Confor believes it is important that forest owners and managers should appeal their assessments, as apart from anything else, uncontested valuations provide the assessors with evidence. The assessors did not have the time nor the resources to do a thorough job before they had to issue the first tranche of valuation notices. Disability allowances and regional/geographical differences have not been taken into account, nor have "factors relating to deer management" been addressed (as provided for in the legislation). These are all matters which could make a very material effect upon a sporting rights valuation. However, changes to your valuation assessment will now have to be sorted out through the rating appeals process, and it is unlikely that these will be heard for some considerable time.

The valuation method of a flat rate per hectare (£5/ha for woodlands) is a very blunt tool as it presently stands, and we believe that in time, and as various appeals are settled, many commercially managed forests – where deer control is the key element rather than sport – will be re-assessed to nominal and in some case nil value. We will monitor that process and advise you further as significant decisions are reached. Meanwhile we will continue a dialogue with the Scottish Assessors Association (SAA), and with Scottish Government (SG).

The SAA are independent of government, so if any progress could be made with obtaining any further relief or exemption from rates for (commercial) forestry, that would require legislative change. We know from Cabinet Secretary Fergus Ewing's comments in December to the Rural Economy & Connectivity Committee (REC) that forestry was not really the target for this new tax, and we will pursue this aspect.

Confor does not argue with the concept that sportings on lands amd heritages (including woodlands) must now be placed on the valuation roll. We simply seek a just and equitable valuation for forestry which properly reflects reality on the ground.

There has been one recent development in that SG has issued guidance to local authorities on the application of Unoccupied Property Relief for shootings and deer forests. Local authorities act as agents for central government in collecting non-domestic rates, and 'guidance' is just that and may not be mandatory on the local authority to implement. The SG guidance states relief should be applied where "no commercial shooting/stalking takes place". So that where no money is exchanged (regardless of whether the shooting/deer forests is owner occupied or in third party occupation) then these properties would qualify for the relief, which if applicable should be at 100%.

Notwithstanding any reliefs that may be available, the unsavoury fact is that these rates are a burden that must be paid until valuation appeals are settled. 2017/18 was a revaluation year and any appeals to subjects which were already on the Roll will be taken before those which have appeared on the Roll for the first time – and this includes all sporting rates. It may be another two years before your case can be considered.

> "Assessments must be appealed within six months of receipt, otherwise the opportunity is lost until the next revaluation.

Surefooted Audi is a smooth operator

Eamonn Wall samples Audi's A4 Allroad

The original Audi A4 Avant (or Estate) was a popular car among rural professionals and dwellers alike. The original 1.9 Tdi (130 bhp) Quattro remains one of my all time favourite cars but its lowered suspension meant it was really not ideal for taking off road, so I kept my Discovery.

So I was keen to sample the Allroad version with its four-wheel drive and raised suspension, thus lifting rather than lowering the suspension when combined with 4WD in the Allroad.

For a change I also decided to sample a petrol version rather than the more economical diesels, which come as 2-litre Tdi or the larger six-cylinder 3-litre Tdi. This petrol version has a 2-litre 252 bhp engine combined with an automatic gearbox.

The A4 Avant range kicks off with a 1.4-litre petrol (150 bhp) price at £29,255, the cheapest Allroad Avant is £38,415 and model tested here starts at £39,845. Quoted fuel consumption figures for the Allroad vary from 42mpg for the 252bhp petrol to 60mpg for the 2.0-litre Tdi and 50mpg for the 3.0-litre Tdi. In my hands the petrol averaged 33.7mpg and diesel would probably average 43mpg under spirited driving. So a rural dweller switching from diesel to petrol will incur a 10mpg or 25% increase in fuel consumption. The diesel does produce less CO_2 and saves the planet from overheating too quickly, whilst the petrol will minimise reduction in city air quality whilst the planet heats up more quickly.

Of course, petrol engines are lighter, quieter, cheaper to build, and with a wider power band, more fun to drive enthusiastically as they often like to spin at higher revs. Modern turbo charged petrols have plenty of low rev power often the other main advantage of diesel engines. Whilst in a diesel you rev out of power (maximum power is usually around 2100rpm) most not liking beyond 3000rpm, in a petrol the more you rev the more you get with a power band often 2000-5000rpm.

I jumped into the A4 Avant following a week driving a Volvo V90 Cross Country D5 automatic and the contrast with the A4 was interesting.

The A4 (perhaps being smaller) certainly felt lighter with excellent body control. The Volvo's ride was softer. The A4 is a lovely car to drive briskly, also smooth riding with good handling and good brakes. The engine was quiet and happy at 80mph ticking along at 2000rpm.

This new A4 Avant Allroad is a nice looking car and certainly better looking than the bland version it replaced. As with most Audi's these days, the dashboards are a scatter of screens and buttons and nowhere as well designed as the neat dash found in the Volvo V90 (similarly priced too).

The current popularity of SUVs means that Audi's best sellers are the Q5 and now even the smaller Q2 is its best seller. The A4 Avant however remains a popular choice and in this Allroad specification it is a rather nice car, even if its boot is perhaps a little small for some folk and its dashboard too complex. For us, forestry folk, diesel versions make most sense.

Eamonn Wall is a tree, woodland and forestry consultant, and director of Eamonn Wall and Co

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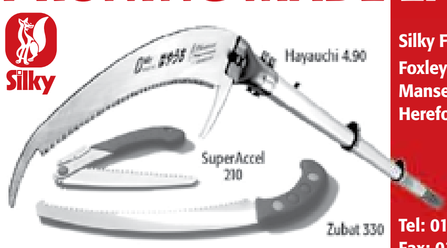

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PROFESSOR JULIAN EVANS OBE FICFor

In love with trees

My wife and I were walking along a narrow back lane between Egton Bridge and Grosmont in the North York Moors when we were surprised by an elf; or was it a fairy? Beautifully built into the base of an old oak tree was a small door. On it hung a notice, 'Gon out, bakson' – the elvish spelling even had some of the letters reversed, the 's' written 'z'-shaped. We didn't see the owner of this little home, not having time to wait (and wait and wait!) on the chilly late April morning, but it set us thinking about how we inculcate a sense of love and appreciation for trees and woodlands in the upcoming generation. And surely the mum or dad or grandparents who had constructed this magical home were on the right track: all kids can enjoy a secret, a 'somewhere special', just as at the bottom of this oak.

Reading Winnie-the-Pooh and his exploits and experiences in 100 acre wood or Beatrix Potter's tales is one way, but reading seems to be in decline as tablets and iPhones take over. Perhaps we should be more deliberate in passing on what has been so precious to many of us. And that leads to another lament: the declining interest in the outdoors more generally.

How many construct camps in their woods and even overnight in them, as a local GP and his boys have done in my own patch in recent years? Do we enjoy our woods for BBQs, picnics and family occasions? Have we used them for commemorative tree plantings – one for each child or grandchild perhaps – or named a tree in memory of someone or some special occasion? All these and other ways build bonds between generations and with trees and woodlands. My niece had, unbeknown to us, longed to plant her very own tree and that desire has now been fulfilled. In a tiny way she now has an interest in the woodland where it is growing. The Woodland Trust has, of course, long tapped into this sense of identity and 'ownership'.

Perhaps more formally, a family can go wildlife watching either directly, face-to-face as it were in a hide, or indirectly via cameras triggered by movement. The joy of seeing what's been picked up in the previous 24 hours or whole week is exciting. And then there is preparing an inventory of wild flowers as the seasons unfold, or of butterflies, or having a bat detector to track these aerial mammals of the dawn and dusk. Even just learning to identify common trees and shrubs stays for a lifetime: in winter black buds for ash, pointy ones for beech, green ones for sycamore and knobbly ones for oak is a good start.

More usefully in a utilitarian way, is enjoying one's wood for the produce it yields such as firewood for the stove, sticks and poles for the vegetable patch, or moss and ferns for flower arrangements. One could go on with food from the wood – rabbits, venison, even grey squirrel meat and using their exquisitely fine tail fur for fishing fly.

Perhaps readers can add their own experience about what works well. But for all small woodland owners, as well as those blessed with great forests, we can pass on the love we have for the countryside, and especially, its trees by simple things. You may have to wait a very long time to see the elf himself at the foot of his oak tree home; they are so elusive!

Opening a door to an appreciation for trees and woodland

FORESTRY IN PICTURES

Confor member Chris Hill discusses the finer points of H & S with John Cleese whilst in St Nevis checking his palm trees.
Sent by Tim Kirk

Note from the editor: FISA, please note that this is a staged picture and John is using a hedge trimmer. Therefore, please ignore John's inappropriate attire!

Want to see your picture here?
Forestry in Pictures is a regular feature in FTN. For every issue, we select the most impacting photograph sent by a reader. If you have a photo you would like to see published here, please send your file to Stefanie.kaiser@confor.org before 13 July 2018. Please include your name, brief description of yourself and the picture and a credit.

Photos should relate to forestry and timber and be of high-quality (minimum resolution 300dpi).

Exceptional pictures might be considered for the front cover of a future FTN issue.

By submitting a picture to Forestry in Pictures you give Confor permission to use the file for non-commercial purposes in Forestry and Timber News or the Confor website. Photos will always be credited.

COMING UP IN AUGUST – GET INVOLVED

In August, it's time for a big APF preview! Confor members, get in touch with stories about product launches or exciting activities you are organising for this year's show! Remember to get in touch with Fiona (p17) if you are interested in working with school groups at the APF.

As always, remember that we welcome any feedback or comments on the articles we publish. Simply send a letter to the editor, or suggest articles for future publication. We're interested in your thoughts about innovation in forestry (p20) – how is your business preparing for the future?

Don't forget to send us your company's news udpates.

A reminder that additional information and downloads on topics and articles throughout this issue is available online. FTN web resources is accessible from the Confor homepage or directly via **www.confor.org.uk/FTNweb**
Watch out for the mouse icon in this magazine!

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