Farm Woodland News

Farm Advisory Service

The newsletter for participants in Farm Woodlands Schemes • *Issue Number 33* **Autumn 2019**

Agroforesty Special

In this Edition

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Editorial

The nights are drawing in, the leaves are starting to turn, and anyone involved in woodland creation is getting ready for another big planting season.

Following a record year for new woodland planting in Scotland there's real momentum amongst landowners, forestry professionals, and politicians alike to continue increasing woodland cover. With the average size of a woodland scheme now 24 hectares, there's no doubt that trees on farms will continue to play an important role in hitting the ambitious targets. Scotland's target for the coming year is 12,000 hectares of new woodland with an extra £5 million recently pledged to achieve this.

The Scottish Government is supporting the whole supply chain. Spending on timber transport infrastructure will benefit both wood processors and rural communities. Funding for developing solutions to some of the main challenges in forestry is helping to make sure the forestry sector is sustainable and resilient (see Offcuts below). There's a drive to use more home-grown timber in construction because it's a sustainable alternative to high-carbon materials like concrete and steel.

In September the Scottish Government highlighted agroforestry as a practice it wants to see grow in the coming year. But what is agroforestry? Put simply, it's farming with trees and it's the main topic in this issue. We've provided a guide to the ways that integrating trees into farming can improve your business, from improving livestock health, to adding a new crop (without having to use more land). There are also first-hand accounts from farmers explaining how agroforestry has benefitted their farm. Two of these farmers were also winners at Scotland's Finest Woods Awards (page 16). The 'Tree Oscars' was held at The Royal Highland Show this summer and showcased the best of all types of woodlands, from community woods and forest schools, to farm woodlands and large commercial forests.

If you're thinking about planting trees, whatever the reason, there's never been a better time. Contact the Farm Advisory Service on 0300 323 0161 or advice@fas.scot for advice on grant funding and help getting started. Visit www.fas.scot free videos, podcasts and downloads.

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Off-cuts

Innovation Competitions to Benefit Tree Supply and Restock Sites

Demand for young trees in Scotland has more than doubled in the last decade. Scottish Government support, in the form of the Forestry Grant Scheme is successfully delivering ambitious national scale planting targets, while strong demand for timber is driving clearfell operations that need to be followed by replanting. Both these factors have placed pressure on forestry nurseries, with demand likely to continue to rise as planting targets increase further and the timber market remains buoyant. In August, Forestry and Land Scotland put out a call for innovative ideas and technologies that would help nurseries increase their yield of planting stock from the limited seed supply available. In conjunction with Scottish Enterprise, and Highlands and Islands Enterprise, the Scottish Government is offering to fully fund development of a profitable product that will improve the efficiency and capacity of tree nurseries.

The pine weevil *Hylobius abietis* is the focus of another innovation competition to develop new solutions to reduce the impact of this pest on restock sites. Five organisations, including Inverness College and Forest Research, received the first stage of funding in March, with prototype testing set to start in the upcoming planting season. The ideas being developed range from physical barriers, to remote monitoring systems, to an online tool to help plan felling to minimise opportunities for weevil attack. The aim is to support the research and development of these technologies and bring solutions to the market that will reduce mortality of young trees on restock sites and establish next rotation crops more quickly and efficiently.

£6.6 Million for Timber Transport Routes

Scottish Government funding for timber transport projects was announced by Cabinet Secretary for the Rural Economy Fergus Ewing MSP in August. The money will go towards improvements, such as strengthening the road surface, widening corners and providing passing places, on rural roads frequently used by timber lorries. There will also be additional support for shipping infrastructure, allowing more timber to be moved by sea, taking the equivalent of nearly 1 million lorry miles off the road network. Mr Ewing said: "Scotland's £1 billion forestry industry is going from strength to strength, producing millions of tonnes of high quality timber every year that will greatly benefit our rural economy.

"However, it is important that we do what we can to mitigate the impact on local communities of increased volumes of timber coming to market." The 34 successful projects will receive the funding from the Strategic Timber Transport Fund (STTF), which is managed by Scottish Forestry. The main regions to benefit are Argyll (£1.78 million), Perth and Kinross (£795,910), Highland (£527,600), and Scottish Borders (£710,705). Projects in Dumfries and Galloway, Ayrshire, Moray, Angus, Clackmannanshire, Stirling and Aberdeenshire were also awarded funds. ■

Farming with Trees

Stephen Adlard
SAC Consulting

Agroforestry – integrating trees into agricultural practices – can boost farm productivity, provide livestock welfare benefits, improve soil health, help manage water flows, enhance wildlife and contribute to mitigating climate change.

Woodland pasture and grazing, hedges, hedgerow trees, shelterbelts, and wooded riparian buffers are all forms of agroforestry and are commonplace in the Scottish landscape. However, there are real opportunities for further integration of trees to the benefit of farm businesses.

Historically, woodland grazing was commonplace in Scotland, although far fewer of these woodlands still exist today. Livestock benefit from shelter but a silvo-pastoral system can also extend the grazing season. The sheltered environment under the tree canopy allows spring grass to flush earlier. The trees also improve the soil structure and keep the soil drier, so grazing can continue for longer towards the end of the year. Such a woodland grazing system can reduce winter housing costs and improve livestock health.

Agroforestry also has enormous potential with chickens. The free-range hens that have tree cover are less stressed and are therefore more productive than those without trees. Incorporating woodlands for poultry also opens the door to sell premium priced products. Well-designed woodland planting around chicken sheds not only screens the building but can also help to mitigate ammonia emissions. A tool to help design such woodlands was mentioned in Issue 32. For more details of this system visit farmtreestoair.ceh.ac.uk

Hedgerows made up of the right tree and shrub species can add value rather than being purely a net cost to maintain.

> *"Edible species can supplement livestock nutrition by providing fodder or tree hay."*

Fruit or nut bearing hedges can present a diversification opportunity by adding a potential income stream without making large scale changes to land use.

Growing trees in rows between strips of arable crops can increase total production from that field. Because trees root deeper, they utilise water and nutrients otherwise unused by standard crops. The additional production of fruit trees, for example, can more than make up for the arable production from the ground given over to trees.

The Forestry Grant Scheme (FGS) offers an agroforestry grant for either a silvo-arable or silvo-pasture system. There is an initial capital payment for establishing individually protected trees at a density of either 200 or 400 trees per hectare, plus annual maintenance payments. Some farmers have found other approaches to achieve the benefits in their particular circumstances. If the land can be taken out of grazing initially, trees can be planted under a traditional forestry model at 2m spacing, then gradually thinned to achieve a spacing of 7-8m. Thinning can start when the woodland is about 12 years old, with removed trees providing a potential source of fuelwood. Once the tree canopy starts to be opened up a grass sword quickly develops and livestock can be allowed into the woodland once the trees are fully established. The trees left standing as the final crop should be pruned to improve their form and raise the canopy.

Contact the Farm Advisory Service (FAS) National Advice Hub on 0300 323 0161 or advice@fas.scot for help and advice on how you could introduce agroforestry to benefit your business. ■

Branching out into Agroforestry: Make Trees your Next Crop

Lyn White and Megan Welford
Soil Association Scotland

Agroforestry is an often-misunderstood term but, put simply, it means farming with trees. Farmers may worry that planting trees means giving up productive land and losing the basic payment but it doesn't. In fact, trees can improve a farm business in many ways.

Agroforestry: *Farming with trees. This can mean anything from shelter belts, and timber plantations, to hedgerows or fully integrated farming systems, where livestock and/or arable crops and trees are interdependent.*

Silvo-pasture: *Grazing animals under trees. The animals enrich the soil while the trees improve the soil's capacity to hold water and nutrients, while providing shelter and fodder for the animals.*

Silvo-arable: *Crops are grown beneath trees, often in rows which are wide enough apart for a tractor to tend to the crops without damaging the trees (known as alley-cropping). The trees shelter the crops, enrich the soil and increase the invertebrate life, including pollinators, above and below ground.*

5 Ways Trees can Improve your Farm Business:

Making the Most of What you've Got

There's no need to buy more land to branch out. Trees use the soil layers beneath those your standard crops use, and make better use of airspace above your farm, as well as sun and water. This is farming in 3D, what Nuffield scholar Stephen Briggs calls "cropping the extra dimension." Trees can also utilise unproductive, boggy ground.

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Save on Livestock Costs: Well-placed trees provide valuable shelter for livestock, and can reduce wind speeds by 30-50%. Keeping animals warm when it's cold and shaded when it's hot) improves their health and productivity. With good management, woodland grazing can extend the season, keeping your animals outside for longer and significantly reducing housing costs. Certain trees, such as willow and aspen, can also provide additional nutrition and health benefits as forage.

Protect your Arable Crops: Used in the right way, trees can protect and boost your arable yield. They can shield crops from winds and temperature changes, keep irrigation needs to a minimum, as well as prevent flooding, nitrogen loss and soil degradation.

Help your Environmental Credentials: Trees are a fantastic way to enhance biodiversity on your farm, provide habitat for wildlife, and intercept pollutants. They absorb carbon and turn it into timber, balancing out greenhouse gas emissions from other areas of your farm business. And what's good for the environment can be good for you – keeping nutrients where you need them and increasing natural pest and disease control.

Providing an Additional Income Source: High value timber provides you with a longer-term crop that can be an investment for the next generation. Trees can provide wood fuel to use on the farm or sell. Alley-cropping with fruit trees can add another income stream, for example apples, and creating diversification options like juice or cider production.

Getting started doesn't have to cost, and you keep your basic payment. There are a range of grants available from Scottish Forestry to cover both capital and maintenance costs. Grants are paid after the trees are planted so you may need a loan or overdraft facility to cover the upfront costs. Most banks are keen to support tree planting with the assurance of an agreed grant contract. The Woodland Trust can also provide help for smaller scale projects. Download the Soil Association's free Agroforestry Handbook here: http://bit.ly/agroforestryhandbook

Find out what agroforestry events are happing near you: www.soilassociation.org/our-work-in-scotland/farming-for-the-future/events/

Hear from three farmers working with Soil Association Scotland who are farming with trees…

Roger and Rachel Howison of Parkhill Farm, Newburgh, Fife (537 acres of mixed arable and livestock) are growing apples and barley together in a silvo-arable system.

"In 2011 my wife Rachel, who's Canadian, and our two kids Rafferty, 12, and Rose, 9, came back from Canada to farm at Parkhill. My dad Tommy was supposedly retiring but he's still out on the farm six days a week! We wanted to be traditional farmers but we also wanted to do things a bit differently. We wanted to try and grow a crop and make a product from it all here on the farm.

We were interested in apples because of the nearby Lindores Abbey – the oldest known distillery - where the French monks came over in the 1100s and grew barley for beer and whisky, and apples for cider. There were 650 apple trees already in Newburgh for just 2000 people so we knew apples grew well. It was Stephen Briggs' Nuffield report on agroforestry that really inspired us, and we went down to see what he was doing in the winter of 2016. We ran our idea by the Woodland Trust and put in a proposal for 750 heritage apple trees and 10,000 native broadleaf trees in the autumn, which was approved.

We've planted nine lines of the apple trees in three-metre swards. We're a conventional farm but we're interested in reducing our chemical dependency – on fertiliser, pesticides and fungicides – so we min-tilled instead of ploughing. It's looking good so far.

"The driving idea is a mixture of arable crops and apples that will be biodiverse, mutually beneficial in that the trees will give some shelter to the crops, and give fruit as another commercial crop."

We've planted grass while the apple trees are establishing then we plan to plant barley for two years then grass for two. At the moment we supply the grain merchants and the maltsters but eventually we might also think about brewing our own beer.

With the planting of the native broadleaves, we joined up pockets of trees that my great grandfather planted as shelter belts in the 1900s and made a wildlife corridor for animals to graze amongst. We rent out land to livestock farmers so it's appealing for them. We've thinned the existing trees and planted the new ones far enough apart for grass to grow. We might use the wood for timber, we might build tourist bothies, use it for wood burning stoves or biomass – there's a lot we can do with it. We've planted oak, silver birch, rowan, hazel, Scots pine and also flowering trees like wild cherry and elder to attract pollinators and birds.

There will be grass and flowers in each three-metre sward between the apple trees, so there will be pollinators for the apples and debris from the grass and flowers going into the soil, so more bugs too.

"We think the trees themselves will improve the soil, with more organic matter from the leaves."

We hope the 750 apple trees will produce 22kg of cider apples each in five or six years' time. We're doing it for the satisfaction and pride. We want to make something people want, like beer or cider. I want to pick the apples and crush them and turn them into apple juice and cider and deal with the public directly.

My dad likes it – it's giving him satisfaction. He was scratching his head at the idea of giving up ten acres of grazing land for trees, but the livestock can take shelter and grazing from the trees like they did 100 years ago. He likes the apple trees – they're a good talking point!

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Peter Gascoigne and Chris Blyth of Gascoigne Farm (850 acres with half on the hill), near Biggar in the Borders, are using trees for timber, animal husbandry, soil health and wildlife.

"When we bought this place it was just open valley," says Peter Gascoigne. "There was no shelter at all – the wind just ripped right through. On a stormy day those sheep are looking for shelter and by putting the tree shelter belts in we are providing that for them. Your lambs are not just lying out in a field shivering and you're not going out in the morning picking dead ones up. You'll always reduce your feed costs if something is kept warm - you'll find that if something is cold, wet and hungry then your feed costs go up. Also, if your ewe is subject to the cold and driving wind and rain, you end up with udder clap or mastitis and all the problems that you get at lambing time and then your lamb suffers. Ok, you lose a wee bit of land but the benefits to husbandry outweigh that."

Chris Blyth says trees are part of farming in a smarter, more profitable way. "Planting trees doesn't have to be a big thing," he explains. "You've got a wet, boggy area where there'll be fluke? Put some trees in. It's a good answer for less productive bits of land, and it gives you timber for fencing. It's a good idea to grow your own timber. The problem is, it's seen as trees versus farming but it should be trees and farming. Trees are a way of doing something with bits of land that would otherwise cost you money. Got dry land? Plant Scots pine. Boggy land? Plant alder and willow. On marginal land, plant Sitka.

"Some of the farm is productive, then there's good, ploughable land. That's all about soil. If you're not testing soil, how do you know what fertiliser to put on it? You can save a fortune. If the grass is growing, give it less nitrogen. Grazing sheep on it improves the soil too.

"Trees enhance the whole operation. They provide shelter for livestock, they stop water run-off. They take carbon out of the atmosphere."

"Trees are valuable," agrees Peter. "Sitka is valuable timber, oak and sycamore are very valuable – you get a tremendous, straight trunk. There's no inheritance tax on timber, or capital gains, or income tax. You can hand plantations to your kids with no tax! And there are grants available to do it."

It's important to think about the kind of tree you plant, says Gascoigne. "I want to get away from the blanket forest of Sitka plantations," he says. "Deer hide in there, and Sitka doesn't provide food. With hardwood trees livestock eat the leaves, birds eat the nuts, you get insect life. The oak tree provides more food and habitat for wildlife than any other tree."

Iain and Marion Macdonald of Ardoch and Threepland farms (250 hectares) in Renfrewshire have used trees to turn their mixed livestock business around.

"Between the overdraft and the hours we were working we were lucky to be making a decent profit," says Iain. "If we hadn't made some changes we'd have been in a real guddle."

"You have to look at the bigger picture and get the best out of your farm, rather than keep doing what you've always done. It's getting harder to make a living out of farming. I might have considered leaving farming if I hadn't diversified."

The pair wound down their beef cow operation by 2013, deciding to increase their sheep to 700 and to look around for ways to reorganise and diversify. With quite a few trees on their farm already, Iain first applied for a felling licence for a wind-blown area of woodland. He also was accepted for the Non-domestic Renewable Heat Incentive Scheme and installed a log biomass boiler to use his stock of timber as fuel. "When we did the biomass everyone thought we were nuts!" he says. But five years on it heats the farm house, workshop and provides hot water for the sheep sheds.

In 2013/14 the couple applied for a woodland creation grant with what was Forestry Commission Scotland. They received a capital payment of £70,000 to plant 29,000 trees, mainly broadleaves, over 12 hectares of land, plus maintenance payments over 15 years, worth a total of £59,400. Crucially, these payments cover the cost of fencing, protecting and maintaining the trees as well as loss of farm income until the forest becomes productive.

"Beforehand, stock would go down steep bankings and into the burn, or cross marshy grass to get to fresher pasture," says Iain. "Rescuing calves and lambs or at gathering time was a nightmare. Now these areas are fenced off it's made a big difference to sheep management. In 4 or 5 years the trees will be big enough to make a lambing corridor, with a line of shelter each side, with good grass in the middle."

At the end of 2017 the couple successfully applied for a second woodland creation grant. This was for a much larger plantation – 80,000 trees over 37.5 hectares. "The first scheme was about creating shelter and managing the land better," says Iain. "The second is an investment for our daughters." The site was picked because very little of it was good upland grazing. "It was a disaster, mainly rushes." That land is now a sapling conifer plantation of mostly softwoods like Sitka Spruce and Scots Pine. "Looking forward, I see the woodland as a commercial investment, which we could sell on, or wait and harvest the timber ourselves."

"It's a way to make a similar amount of money without being so physically hard on yourselves," says Marion. "People talk about the three Fs – feed, fertiliser and fuel – with prices always on the up. It makes it hard to balance the books."

"Some think farming and trees don't go well together but it can work," agrees Iain. "It's a way of turning round any non-productive land on your farm. You get different incomes at different times - it's a better cash flow, rather than being reliant on selling all your stock on one or two sale days. "When I look at how well the farm looks now, with the bad bits shut off, it's so much tidier, and we have some money coming in to invest in other areas on the farm," says Iain. "We are miles in front of where I thought we were going to be with it." ■

Can you Eat Trees?

Lynn Cassells and Sandra Baer of the multi-awarding winning Lynbreck Croft, as seen on BBC series This Farming Life.

Lynn Cassells and Sandra Baer (credit: Sandra Angers Blondin).

When we bought Lynbreck in March 2016, we had no formal background in agriculture. We used to work in woodland creation and I always remember a conversation I had with a local farmer who, commenting on our work said, 'You can't eat trees', I assume referring to the removal of livestock for new planting.

When we were planning our new agricultural business, one where we always said the health of our soil, ourselves, our community and nature would come first, we saw trees as an integral part of our set up from day one.

We try to observe and copy natural processes to make our land as holistically productive as possible. Our ground isn't suitable for many crops and we don't have the capacity to cut our own hay. We were also very conscious of climate change. At over 1,000ft altitude our 150acre croft is very exposed to winds, rain, snow and sun (when we get it). We wanted to create as many options for shelter and food for our planned livestock team in the face of extreme weather patterns.

> *"We wanted to build resilience into an uncertain future."*

On the first day we noticed a naturally regenerating army of Scots Pine marching up an area of heathery hill. We decided to enrich this are with 17,400 native broadleaf trees. We undertook the majority of the work ourselves, meaning that we were able to use our Scottish Forestry grant funding to pay ourselves a wage. We were also able to sell the carbon that the trees would sequester over a given period of time, giving a much needed financial boost to our new business. It has meant removing that area from our grazing land for 20 years but it will create a new area of sheltered hill grazing. An area where our animals can stay out longer and find more food through browsing tree leaves and a more varied ground flora that will appear as the new trees improve our soils. In time, we'll be able to increase our carrying capacity. More animals, more food, more income, and better for biodiversity and our climate.

We followed this up with the planting of 1km of native hedging, part funded by the Woodland Trust More Hedges scheme. Our plan was to link up existing woodland habitats and create a 'tree hug' around our fields. The goal is that our animals will always be able to access shelter, an important part of their welfare requirements, as well as helping them to maintain body condition and provide safe calving havens, reducing mortality due to poor weather conditions. We also assessed our existing woodlands and enriched these with the planting of new species. We use our pigs to snuffle and root, breaking up the dense matt of monoculture grasses and providing niches for new tree seedlings and other grasses and wildflowers to set seed and grow. We need these woodlands to be around for the long term so we need to ensure we help to keep them healthy and encourage succession.

But the early conversation with the farmer rang in my ears. Can you eat trees? It didn't take us long to find out the answer – yes. Until relatively recently using tree fodder and tree hay (made by cutting small branches and drying them for winter feed) was commonplace in the UK, and still is in other areas of Europe. This led us to our most recent project – the planting of over 5,000 trees in an agroforestry scheme. We chose mostly willow and a bit of alder, mainly because they grow quickly are suited to damp conditions, and respond well to regular cutting. Willow has pain relief properties and both willow and alder, when browsed, can help to reduce parasite burdens. We hope that our new tree crops will help to reduce the amount of hay we need to buy in annually, will improve our soils and will keep our animals healthier, reducing the need for veterinary interventions and mineral supplements.

Converting trees into beef (credit: Lynbreck Croft).

Our challenge now is to get all the trees we have planted to grow – lots of weeding, bracken bashing and keeping away hungry herbivores. We're considering incorporating more trees into our field systems, something which takes more thought and planning for our location. This could include individual trees, or rows of fruiting and nut-baring shrubs. The potential excites us and it will all add to growing resilience into our croft business. One thing we are sure of – more trees will not just mean healthier, stronger animals, it will mean even more of them!
So yes, you can eat trees. Our pure Highland Beef, rare breed Oxford Sandy and Black pork, free range hen eggs and honey from our foraging bees are all full of them. ■

Highlanders enjoying woodland grazing and shade (credit: Lynbreck Croft).

What's new from FAS?

The latest Farm Woodlands updates on the FAS website:

Podcast: Grant funding for woodland creation
Find out how you can make use of available grants. Listen on the FAS website or search for 'Farm Advisory Service' wherever you usually get your podcasts.

Video: The timber crop cycle
A taster from a previous free FAS event, discussing woodlands at all stages, from planting to thinning, to harvesting and replanting.

Video: What can the Farm Advisory Service do for you?
Learn about the one-to-one advice and grants available for an Integrated Land Management Plan (ILMP) that could help improve your finances and make your business more resilient.

Coming soon: The Farm Management Handbook 2019/2020, 40th Edition
Download your free copy from the FAS website. Your essential guide to all aspects of running a farm business, updated with the latest advice and figures for 2019/2020

FAS Stalls at Market Sales Days
Come along to chat to our Woodlands and Agricultural Advisors.

Aberdeen and Northern Marts, Thainstone	Tuesday 1st October 2019
Caledonian Marts, Stirling	Friday 11th October 2019
Lawrie and Symington, Lanark	Tuesday 15th October 2019
United Auctions, Stirling	Wednesday 4th March 2020

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SRDP Farm Advisory Service

National Advice Hub
T: 0300 323 0161
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FAS Woodlands Events

Thinning and Woodland Management, Denny, near Falkirk	25th October 2019, 11am - 3pm. Lunch provided
Woodland Management and Woodland Creation, Stranraer	Wednesday 22nd January 2020, 7.30pm
Woodland Creation, Speyside	October 2019, (date TBC – check FAS website). Lunch provided

FAS events are free but spaces are limited so book your place online to avoid disappointment. Keep an eye on the FAS website and social media channels for more details. There are hundreds of FAS events all over Scotland, covering a wide range of topics.

Soil Association Woodlands Events

Money Grows on Trees, Buckie, Moray	Thursday 3rd October, 9.30am-4pm
Making Woodland Work for You, The Grey Horse Inn, Balerno, Midlothian	Tuesday 8th October, 12.30-4.30pm

Both events are free of charge to farmers, land managers and foresters. Lunch is included. Booking is required. Book on the Soil Association website or contact Jane on 0131 370 8150 or jdingwall@soilassociation.org

What's the Threat?
Tree pests and diseases to look out for

Paddy Robertson
Tree Health Planning & Contingency Manager at Scottish Forestry

Scottish Forestry
Coilltearachd na h-Alba

The Tree Health team in Scottish Forestry carries out aerial and ground-based surveillance of woodlands and forests across Scotland. Their objective is to detect harmful pests and diseases early so that appropriate action can be taken to either eradicate or contain them, or slow down their spread and reduce their impact. Some of the main tree health threats we are currently dealing with are outlined here.

Through our bi-annual aerial surveillance programme, we are able to monitor 80-90% of the productive forest area of Scotland, pinpointing symptomatic trees and then sending out trained inspectors to diagnose the cause of those symptoms. Individual trees sometimes need to be felled to ensure nothing is missed. Typically, we are looking for trees showing signs of recent significant stress such as needles or leaves turning orange or brown during the summer months, or atypical resin/sap bleeding on stems and branches. In a busy year this can involve over a thousand site inspections in sometimes remote locations. Many require no subsequent action as the causes are often things like lightning strike, wind or snow damage, localised flooding or bark stripping by deer or squirrels.

Although Scottish Forestry undertakes annual tree health surveillance work this does not – and cannot – relieve landowners and forest managers of their primary responsibility to monitor their own woodlands and forests. It is required by law that diseases classified as notifiable are reported.

Great spruce bark beetle – notifiable disease
Spruces and pines
Two of the commonest conifer species in Scotland are the Norway spruce and Sitka spruce. They are often planted as shelter belts in agricultural landscapes as well as in multi-purpose forests. Between them they make up almost 50% of Scotland's forestry resource.

The great spruce bark beetle (Dendroctonus micans) is not native to the UK and has the potential to be a significant pest of spruce trees in Scotland. Years of research and ongoing proactive monitoring and mitigation action are successfully managing that threat.

Through the warmer summer months, the female beetles emerge, seeking a suitable spot under the bark of a spruce tree to lay hundreds of already fertilised eggs. Depending on the availability of a suitable host tree and weather conditions, that may just require a short walk up or down the tree they have just emerged from, or a flight to search for a new tree. With a favourable wind, females can travel several kilometres in search of a suitable tree but most dispersal takes place much closer to home.

The sticky sap of spruces will generally form an effective defence against many types of bark beetle attack, but D. micans is one of the few that can overcome the defences of even a healthy tree. Trees under stress from drought, flooding or other factors cannot produce as much sap so are at greater risk of attack.

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The sticky sap of spruces will generally form an effective defence against many types of bark beetle attack, but *D. micans* is one of the few that can overcome the defences of even a healthy tree. Trees under stress from drought, flooding or other factors cannot produce as much sap so are at greater risk of attack.

The female beetle attempts to burrow under the bark of a spruce tree and, if she successfully overcomes the tree's defences, she will lay up to 300 eggs in batches of 50-80. After hatching, the larvae feed on the inner woody layers of the bark for a year or two. Each brood is capable of eating through a patch of bark up to a foot wide. Three or four broods can destroy the inner bark right around a tree, ringbarking and killing it.

However, there is natural method to combat the bark beetle, recently featured on the BBC's *Countryfile*. Thanks to pioneering work undertaken when *D. micans* was first detected in Wales and the Welsh Marches in the 1980s, Forest Research (with funding from Scottish Forestry, the Forestry Commission in England, and Confor) now breed a host specific predator beetle (*Rhizophagus grandis*) that can effectively control populations of the bark beetle in most situations. Surveys carried out by Scottish Forestry, and reports from forest managers, allow us to locate infested trees and release the predator beetle to limit the damage.

The predator beetle's larvae will eat enough bark beetle larvae to greatly reduce their impact. As the predator beetle will only lay eggs when it finds populations of the great spruce bark beetle it does not pose a threat to other native insects. Releases of the predator beetle are done at no direct cost to the landowner, all we ask for is access to sites for our surveyors – the predator beetle will do the rest!

Green spruce aphid

Spruces

The green spruce aphid (*Elatobium abietinum*) is present across Scotland and in most years is barely noticed. However, in peak years, such as this one, it can cause very noticeable needle loss, particularly on Sitka spruce. Edge trees in small shelter belts are particularly vulnerable to damage. Spruces typically keep needles for 3-5 years, growing a new set on the outermost twigs each year. The aphid normally feeds on the oldest needles but when the populations are very high it can attack the current year's needles. At worst, this can leave only a tuft of fresh needles on the very tips of the twigs. Infected trees may look very brown and 'sparse' from mid-summer onwards.

This year's aphid populations are now 'crashing' due to a lack of food, and predator species feeding on the bountiful aphids. Affected trees, although stressed and not growing as much as in normal years, should survive and return to a healthy cover of needles in the coming years. As there are currently no feasible biological or chemical control treatments in a forest context. Management of this pest may require changes in silvicultural practices – currently the focus of research.

Ramorum, Larch disease – notifiable disease

Larches, Rhododendron, Shrub Species

Phytophthora ramorum, often referred to as 'Ramorum', is a highly infectious and normally fatal water mould which has been affecting larch trees in Scotland since 2010, particularly in wetter western areas. Although it will also infect a wide variety of other trees and shrubs, it is particularly damaging on larch due to the high levels of infectious spores produced on infected needles. These spores are able to travel in droplets of water in rain and mist, sometimes over large distances. Infection spreads rapidly in the inner bark, the tree quickly becomes unable to transport water and nutrients from the roots to the crown, and death can happen within just a few months.

In some years, levels of infection can be very high, sometimes causing most of the larch trees in a forest to die over the course of a single summer. This was very evident in 2014, when extensive death was observed over thousands of hectares of larch in south-west Scotland.

Typically, infections only become apparent when the needles of an affected branch or tree begin to turn orange or brown in early summer. Once an infection is confirmed, a statutory plant health notice (SPHN) is issued by Scottish Forestry requiring the landowner to fell a defined area of larch to attempt to contain the infection. Felling is currently the only feasible way to slow down the spread and impact of the disease.

Grants are available from Scottish Forestry to manage felling and assist with replanting the site with suitable, alternative tree species. The timber of infected larch trees can still be utilised (albeit with some biosecurity restrictions on the transport and processing of the timber), which helps to pay for the felling operations. Current research is attempting to find larch trees with tolerance of Ramorum.

Chalara ash dieback – notifiable disease if found in new areas

Ash

Ash trees in much of the country are being increasingly affected by dieback caused by the fungus *Hymenoscyphus fraxineus* (commonly known as 'Chalara' due to its previous Latin name). In Scotland it was first found on newly planted trees west of Glasgow in 2012 but subsequently found to be widely distributed elsewhere. The disease typically results in branch dieback, often with subsequent death of trees when secondary fungal diseases gain a hold on the already stressed and weakened tree. During that process, which can happen rapidly in younger trees but may take a number of years with older trees, branch shedding and tree instability will present an increasing safety risk. Landowners and managers must closely monitor trees close to roads, railways, buildings, or areas with significant public access and take appropriate action.

The wind-borne spores of the disease can travel many miles, making it difficult to stop the spread. Live trees should only be felled if they present a safety risk. We are looking out for native ash trees with some resistance – those which remain healthy or do not appear to be as heavily affected as those around them. Trials are already underway to assess a range of UK native ash trees, although current evidence from the UK and mainland Europe suggests that only 1-5% of our main ash species (*Fraxinus excelsior)* is likely to exhibit resistance.

Reporting suspected pests and diseases

Tree Alert https://treealert.forestresearch.gov.uk

If you are concerned about the health of any trees, seek professional advice. It is required by law that diseases classified as notifiable are reported.

Observatree https://www.observatree.org.uk/

Forest Research https://www.forestresearch.gov.uk/tools-and-resources/pest-and-disease-resources/

Scottish Forestry https://forestry.gov.scot/sustainable-forestry/tree-health

UK Government biosecurity guidance https://www.gov.uk/guidance/prevent-the-introduction-and-spread-of-tree-pests-and-diseases ■

Scotland's Finest Woods Awards 2019 – © Julie Broadfoot / Juliebee – www.juliebee.co.uk

Angela Douglas, Executive Director of the awards and Jo O'Hara CEO of Scottish Forestry with First Minister Nicola Sturgeon at the ceremony.

Scotland's Finest Woods Awards

Fantastic farm woodlands honoured in annual 'Tree Oscars'

Leona Baillie
SAC Consulting
Angela Douglas
Scotland's Finest Woods Awards

Scotland's best woodlands, and the people who look after them, were celebrated by farmers, foresters and politicians at this year's Royal Highland Show. Scotland's Finest Woods Awards has been running since 1985, highlighting exemplary woodlands and recognising the contribution they make to local communities and at a national level. With categories ranging from farm woodlands and commercial forestry to community woods and school projects, the prestigious awards cover the broad spectrum of woodland types that benefit the rural as well as urban economy and the environment.

The Farm Woodland category showcases active farmers or crofters who are managing woodlands to the benefit of the agricultural operations. This year it was won by Kilrie Farm, Kirkcaldy, owned by farmer John Drysdale. The judges said, "This is an excellent example of an integrated woodland on a farm. Plans are well in place to achieve a viable and sustainable woodland enterprise. The woodlands are generating significant employment and plans are in place to look at adding value from the forestry business."

There was stiff competition from other farm woodlands, with last year's winner Gascoigne Farm Ltd highly commended for "the thought that has gone into how the farming would benefit from the woodland creation" and "the scale of the benefits provided by bird biodiversity and landscape aesthetics". Farmer Peter Gascoigne said that providing shelter-belts on the farm had helped him deliver heavier and healthier lambs. Peter shares more about how trees are benefitting his farm in the agroforestry feature on page 8.

The mixed use woodland of the Firm of W Shanks, Kerslochmuir, Dalry, Ayrshire receive a commendation as "a good example of a diverse amenity woodland with commercial potential from productive Sitka spruce." The judges added: "There are good prospects to achieve the desired objective of firewood/ sawlog production while providing access and recreational opportunities." Another commended award in the category recognised John MacLean's croft woodland at Lagandorain, Isle of Iona. Judges said: "This is a good example of how woodland can be created in an exposed environment and integrated into a viable crofting business." There was further success for croft woodlands with Lynbreck Croft near Grantown-on-Spey, as seen on the BBC's This Farming Life, receiving the newly created Farm Woodland Award especially for Young People. Judges said Lynn Cassells and Sandra Baer had made an impressive impact in the few short years since they took on an abandoned croft. Lynn said: "We have tried to achieve full integration of the trees and woodland into the croft business. They are a valuable asset in terms of shelter for animals and fuel for us – as well as everything they do for biodiversity and soaking up carbon. That three-legged stool of sustainability – the economic, environmental and social benefits of woodlands – is at the heart of everything we are trying to do in our community." You can read more about how Lynn and Sandra are integrating trees and using agroforestry techniques to benefit the whole croft on page 10.

First Minister Nicola Sturgeon MSP and Fergus Ewing MSP, Cabinet Secretary for Rural Economy both attended the ceremony to present awards to the winners. The First Minister praised the schools' winner Earthtime Forest School Nursery from Duffus, north of Elgin and Levenmouth Academy in Fife, saying: "We know how children benefit from learning outdoors and it is great to see forests and woodlands playing a big part in that outdoor learning.

"We are in the midst of a climate emergency and planting trees is vital if we are to tackle that emergency head on.

"With almost 85 per cent of all new tree planting in the UK happening in Scotland, the younger generation is aware of just how important those trees are to our future." Fergus Ewing voiced his support for Scotland's forestry sector: "This is a huge year for forestry, with full devolution and the smashing of our ambitious planting targets. We are achieving on both quantity and quality as these annual Awards so clearly demonstrate - and it is an enormous pleasure to recognise the exceptional quality on show at Scotland's Finest Woods Awards.

"The winners represent the very best of Scotland - skilled, passionate individuals and groups who are committed to creating fantastic spaces to allow us all to enjoy our forests and woods."

Fergus Ewing presenting the Farm Woodland Award for Young People to Sandra Baer and Lynn Cassells of Lynbreck Croft. Scotland's Finest Woods Awards 2019 – © Julie Broadfoot / Juliebee – www.juliebee.co.uk

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Do you own or manage a great woodland?

Why not enter next year's competition, for a chance to be recognised, and receive a beautiful trophy and prize money. Big or small, commercial or native, there's an award for every type of wonderful woodland. It's expected that all the same awards categories will be up for grabs again next year (with the exception of the 1919 Forestry Act Centenary Award which was a one-off competition for 2019).

Entries will open at the start of 2020, the closing date will be midnight on Tuesday 31st March 2020. Visit www.sfwa.co.uk to learn more about previous winners and follow Scotland's Finest Woods Awards on social media for updates about next year's awards.

The Winners for 2019:

Fergus Ewing with the Farm Woodlands winners. Scotland's Finest Woods Awards 2019 – © Julie Broadfoot / Juliebee – www.juliebee.co.uk

Lilburn Trophy for Farm Woodlands
John Drysdale and Kieran Kelly for Kilrie Farm, Kirkcaldy, Fife

Scottish Woodlands Ltd. Trophy for Young People – Farm Woodlands
Lynn Cassells and Sandra Baer for Lynbreck Croft, Grantown-on-Spey

James Jones Trophy for New Commercial Woods
Mr. Mervyn Harrison for Beirhope, Near Hownam, Kelso

Woodland Trust Scotland Trophy for New Native Woods
Jahama Highland Estates for Kinlochleven Native Woodland, Lochaber

The Crown Estate Scotland Schools Trophy for School-based Projects
Earthtime Forest School Nursery, Duffus, Moray

Tim Stead Trophy for Community Woodlands – Small Community Woodland and Overall Winner
Michaelswood Public Amenity, Aith, Shetland

Tim Stead Trophy for Community Woodlands – Large Community Woodland
Gifford Community Woodland, East Lothian

John Kennedy Trophy for Multi-purpose Forestry
James Evan Baillie for Darroch Wood, Scaniport Estate, near Inverness

Hunter Blair Trophy for Silvicultural Excellence
David Shepherd and Annie Griffiths for Craggach Woods, Kirkhill, near Inverness

1919 Forestry Act Centenary Trophy
Forestry and Land Scotland – North Region team for Fort Augustus Woodlands, Highland ■

Species Focus – Willows

DID YOU KNOW?

Crack willow *Salix fragilis* gets its name from how easily its twigs can snap. But rather than this being a problem for these trees, it can provide a way of dispersing. Twigs broken off the tree can take root very easily and the main method of propagating willow is from cuttings or rod. Snapped twigs carried downstream on waterways can then become trees in new locations, often resulting in lines of trees all derived from the same original individual further upstream.

Willows are found on every continent except Australia and Antarctica, with over 400 species and hybrids – we won't attempt to cover them all here! Willows can offer a diverse range of benefits when integrated with farming.

The *Salix* genus includes both shrubs and trees, and many willow tree species can take a shrubby form, depending on local growing conditions. Willows grow on a wide range of soil types, in areas with 600-1000mm annual rainfall, meaning most of Scotland. As particularly thirsty trees, willows thrive where they can access groundwater, making them a common sight along watercourses, or in boggy areas.

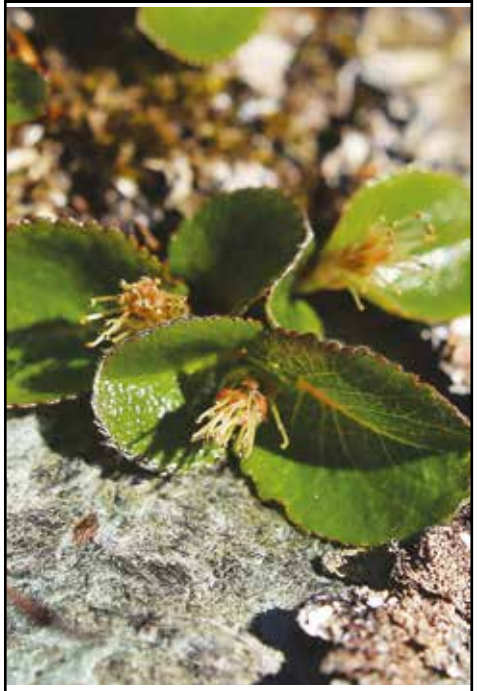
Familiar tree species native to the UK include bay (S. *pentandra*), crack (*S. fragilis*), goat (*S. caprea*), grey (*S.cinerea* subspecies *oleifolia*), osier (*S. viminalis*) and white (*S. alba*) willows.

Livestock Nutrition

When included in hedgerows or woodland grazing, livestock preferentially browse willow. Foliage provides high concentrations of minerals such as sodium, zinc, manganese and iron, offering potential savings on supplements.

CONTINUED OVER

DID YOU KNOW?



Dwarf willow *Salix herbacea* is the smallest tree in the world (or 'woody plant' if use a forester's definition of 'tree'!).

It grows only 1 to 6cm tall, sprawling across the ground in cold and exposed alpine and arctic environments. It's a key species in montane scrub, a habitat now rare in Scotland, characterised by hardy shrubs and dwarf trees.

Montane scrub is a transitional habitat, beginning at the upper limits of tree growth and petering out into montane heath.

The Montane Scrub Action Group works to restore this habitat and Forestry Grant Scheme funding is available to create montane scrub through the Native Low-density Broadleaves option.

Tree fodder can be stored for up to two years and can be a valuable food source during drought events, which may become a more common phenomenon in Scotland. Growing trees such as willow for tree hay can act as an 'insurance policy' or supplement in the event of a poor meadow hay harvest. Willows have long been used medicinally – aspirin is derived from the compound salicin, found in willow bark. Deer may preferentially use willows for fraying their antlers when losing felt, possibly for their pain relieving properties. Willow can therefore act as a sacrificial tree when planted alongside more commercially valuable species to take the brunt of fraying damage. In shelterwoods, willows play an important role as understorey species. Coppicing willows and other shade-tolerant trees will help to maintain an effective windbreak as the main trees grow taller and thin out.

Coppicing

In the right conditions, willows can grow quickly and coppice well. Traditionally, the flexible stems of species such as osier lent themselves to weaving crafts such baskets and screens.

Ecological Value

Willows are ecologically important trees, supporting even more species of invertebrates than oak. In turn, this supports the many birds and other wildlife that forage, nest and roost in willows.

Goat willow is particularly important for moths and butterflies and is the only food source for the larvae of the Purple Emperor butterfly. Willow catkins provide an early source of pollen and nectar for bees and other pollinators. Willows often self-seed along watercourses where their sparse canopies create dappled shade, important for diverse riparian environments, and their fibrous root systems help stabilise banks. Because they are high water using trees, planting willows can help to de-saturate waterlogged areas, or simply make use of wet boggy ground on the farm. ■

Forestry Grant Scheme Update

Extra £5 million for Woodland Creation in 2019-2020

2018-2019 was a record-breaking year, with 11,200 hectares of new woodlands planted, exceeding the Scottish Government's annual target of 10,000 hectares. The target for 2019-2020 has been increased to 12,000 hectares with £5 million additional funding secured to help achieve this. Scottish Forestry are encouraging applications for the current financial year as demand for 2020-2021 grants is already high. If you are planning woodland creation in the next financial year and could realistically bring forward the project, or part of the work (eg fencing) speak to your local Scottish Forestry Conservancy Office.

Nursery Plant Supply

The increase of annual planting targets, coupled with the replanting of woods felled for timber, means the demand for new plants will continue to rise. If you are planning to plant new woodlands, or fell existing trees, it's highly advisable to reserve the plants you need as early as possible.

Initial planting rate change for ploughed sites

The payment rates for initial planting of new woodlands have been reviewed and amended to reflect the variation in cost of using different cultivation methods. The standard payment rates are based on the cost per hectare of mounding, which is more expensive than ploughing. Woodland creation applications that propose to use any type of ploughing must now claim a reduced Initial Planting payment rate. The change applies to the following Woodland Creation options: Conifer; Diverse Conifer; Broadleaves; Small of Farm Woodlands. Applications for other options, and for using other forms of ground preparation, are still eligible for the full standard Initial Planting payment rates.

Deer fencing rate change

The grant paid towards deer fencing costs for woodland creation has been reviewed and increased from £6.80/m to £7.60/m. The payment rate for deer fencing in areas eligible for the high cost deer fencing rate has not changed.

New grant funding rate for march stock fences

There is a new grant funding rate for installing new stock march fencing as part of woodland creation or woodland improvement grants. If you propose a new stock fence, for which you and a neighbouring landowner share responsibility, as part of an application, this new capital item can be claimed at a rate of £2.75/m. Additionally, you and the neighbouring landowner must complete a Shared Boundary Agreement Form and submit this with your application. Grant payment rates and conditions for non-march fences remain the same. ■

DID YOU KNOW?

The 11,200ha (27,600 acres) of new woodlands planted in Scotland in 2018-19
= 22 million trees
= 17,920 football pitches
= almost the size of Jersey

Timber Market Report September 2019

Ross Kennedy *Harvesting Director, RTS Forestry*

Fundamentally the domestic timber market remains in a very healthy position with strong returns for growers across all categories of timber. Undeniably, prices are down from an exceptional peak last year however grower returns are still well above anything on offer in recent decades.

The recent reduction in returns was largely instigated by catastrophic storm and insect damage events within Central Europe. Any affected timber there requires felling immediately and consequently there is a 'wall of wood' resulting from this overcutting. Predictions of how many millions of tonnes will be felled as a result of these events vary widely but the annual quantity of timber cut in the UK pales into insignificance when set against even the lower end of projections. European merchants are actively seeking to place a higher percentage of this material into the UK market, perhaps good news for housebuilders if not for the UK forest industry. Despite the challenges, the domestic sawmills are doing exceptionally well to maintain market share and sawlog prices offered to growers. While prices have fallen when viewed across the past thirty years current returns in the high £60's per tonne for sawlogs in central Scotland are historically excellent. The major sawmills have invested considerably in recent years to improve efficiency, allowing them to compete with imported timber and support the domestic market. This is a major manufacturing success story that perhaps does not receive the acknowledgement it deserves for its contribution to the Scottish economy and rural employment.

The market for the smaller diameter, poorer quality end of the tree has weathered the (literal) storm somewhat better. Demand for these products dropped off to a lesser extent and now coming back strongly. The substantial proportion of this material now utilised for biomass is, to some extent, independent of outside factors due to government grant aid support through Renewable Heat Incentive (RHI). Most end users are now building stocks for winter and there is stronger demand. Prices are returning towards £50 per tonne for delivered biomass, although with high regional variation.

As with any traded commodity the Brexit issue is causing some concern within the timber industry. However there is little ability to make meaningful contingency plans, given the uncertainty of when/if Brexit will occur. To some extent the weakening of the pound has aided the domestic market by reducing the competitiveness of imports, although set against the impact to the general economy and timber demand this is a somewhat cold comfort.

Overall while short-term factors have lowered grower returns it is clear that the fundamentals of the industry are strong. Growing forests and ground for new planting are still highly sought after, demonstrating the confidence of investors in timber returns in the short, medium and long term. ■

Competition

For this edition's competition we'd like to know more about you:

- **What's your main woodlands interest?** For example, managing and harvesting commercial timber, new planting, small-scale firewood, habitat or landscape value, sporting, recreation.
- **On a scale of 1 to 10, how would you rate your current knowledge of trees and forestry?** 1 = no knowledge, 10 = expert.
- **Other than Farm Woodland News, where do you get woodlands information?** For example, farming magazines, specialist forestry publications, internet searches, social media.

Everyone who responds will be entered into the prize draw for a copy of the brand new book *British Forests: The Forestry Commission 1919-2019*, worth £25.

Published to mark the centenary of the Forestry Commission, British Forests examines the organisation's unique history and its role in research and promoting tree planting. The book features a selection of the nations' forests, beautiful botanical illustrations and a foreword by Jon Snow of Channel 4 News, patron of Trees for Cities and Chair of the Heart of England Forest.

The closing date is 31st January 2020. Please email or post your answers to: tracey.mcintosh@sac.co.uk

Tracey McIntosh
15 Hay Street
Elgin
IV30 1NQ

Thanks to everyone who entered the spring competition and provided valuable feedback. Over the next few issues we will aim to cover some of the topics suggested and we always welcome your thoughts and suggestions to help keep Farm Woodland News useful and relevant.

Congratulations to Drew Murray from Maybole, who wins a copy of *Lumberjills: Britain's Forgotten Army* by Joanna Foat.

In the next issue of Farm Woodland News:

- **The latest developments in how to deal with weevils (*Hylobius abietis)* on restock sites**
- **Diversifying your woodlands with alternative tree species**
- **And more…**

Quick Guide to Woodland Creation Grants

The Forestry Grant Scheme (FGS) supports the creation of new woodland that will provide economic, environmental and social benefits. Payment rates for five of the nine grant support options for woodland creation are shown in the table below. Higher rates of payment are available for eligible schemes within the following locations: Central Scotland Green Network (CSGN); Cairngorms National Park Woodland Expansion Target Area; Highland Native Woodland Target Area; Woodlands for Water Target Areas; and preferred and potential areas of local authority Forest and Woodland Strategies.

Woodland Creation option	Total payment rate per hectare *for initial planting and annual maintenance for 5 years*	
	Standard areas	Target areas
Conifer*	£2960	£3330
Diverse Conifer*	£3840	£4320
Native Scots Pine	£3200	£3600
Native Broadleaves	£3200	£3600
Native Broadleaves in Northern and Western Isles	£6720	N/A

Central Scotland Green Network additional capital payment contribution

Within the CSGN Contribution Area additional funding is available to Woodland Creation schemes.

Core Area	£2500/ha
Outer Core Area	£1500/ha
Fringe Area	£750/ha

CSGN contribution capped at 40ha in Core Area and Fringe Area, and at 65ha in Outer Core Area.

Farm Advisory Service

National Advice Hub
T: 0300 323 0161
E: advice@fas.scot
W: www.fas.scot

If you need more advice on farm woodlands or any other topic, the Farm Advisory Service has a range of support and help available:

Advice line

For free telephone advice on a wide variety of topics including cross compliance, water framework directive requirements, climate change and other technical issues call us on **0300 323 0161** or email **advice@fas.scot**. The advice line operates between 9am and 5pm Monday to Friday.

Online

Our website contains articles, videos and much more at **www.fas.scot**

Capital Items Payment Rates

In addition to the initial planting grant there is support for capital items that may be required to successfully establish new woodland.

Deer fencing	£7.60/m**
Stock fencing	£4.40/m
Rabbit-proofing of fence	£1.60/m
Tree shelters (1.2 to 1.8m)	£2.00 each
Gorse removal	£720/net ha
Bracken control	£225/ha

**If ploughing is used, reduced payment rates for initial planting apply to reflect the cost saving from this cultivation method, effective from 24th June 2019.*

***Increased from £6.80, effective from 24th June.*