



Scottish
Forestry
Coilltearachd
na h-Alba

stfa



Woodland Creation Case Study: Full Rotation Financial Analysis



Scottish Government
Riaghaltas na h-Alba
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Scottish Forestry is the Scottish Government agency responsible for forestry policy, support and regulation.

Is e Coilltearachd na h-Alba na bhuidheann Riaghaltas na h-Alba le uallach airson poileasaidh, taic agus riaghladh coilltearachd.

Introduction

There are [many benefits](#) to creating woodlands on a farm. Forestry grants are available to tenancy based businesses the same as any other farm, yet fewer tenant farmers apply. This can be down to many issues, such as a tenant requiring consent for woodland creation from their landlord. The Scottish Land Commission has produced a [useful guide](#) on some of the legal aspects.

We would like more tenant farmers to plant woodlands and are keen to understand the barriers. We have engaged with the Scottish Tenant Farmers Association (STFA) and other key organisations to explore this further and intend to create new guidance and toolkits to support potential applicants.

We have produced this case study to illustrate the financials associated with creating new woodland. The models contained within this document are fully worked examples based on a real tenanted farm, prepared as if they had gone through the normal process and through the lifetime of the woodland.

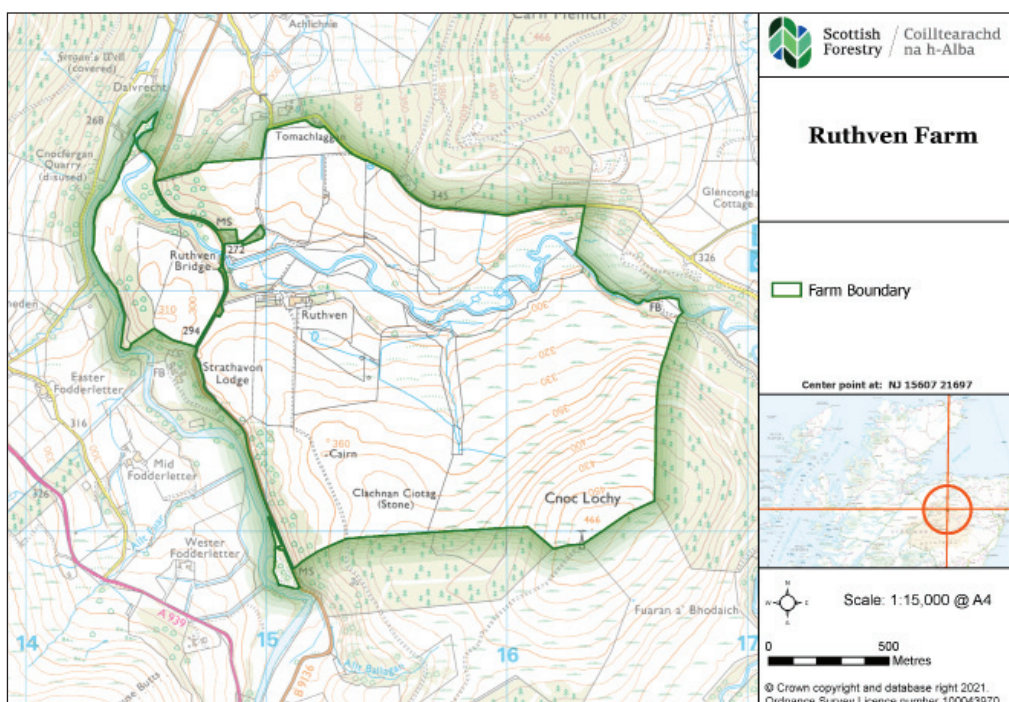
The information contained within this document is for illustrative purposes only and is not financial or investment advice. We strongly recommend that you take independent financial advice before making any decisions. This is not an endorsement of any one woodland type over another but

helps to illustrate the difference between three options from a purely financial perspective. Factors other than solely financial are likely to affect what kind of woodland is best suited to meet your objectives.

All examples are contained on the farm holding described below, and the financial models were developed using assumed typical revenue and expenditures associated with farm woodland planting.

Ruthven Farm is an 800 acre upland farm. Running from 900ft with the farm sitting at 1000ft above sea level to the highest point of 1550ft. The farm has 800 ewes made up of 550 Blackface ewes, 150 Mule ewes and 100 Cheviot ewes, producing breeding stock and prime lambs. It has a 37 year limited duration tenancy with The Crown Estate Scotland.

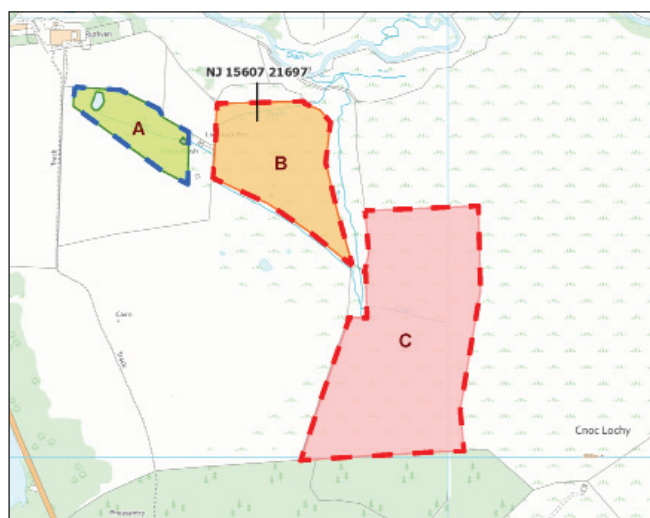
Ruthven has already seen the benefits of planting trees on the farm - shelter and habitat for their flock, and new fencing paid for. These benefits have led to better management of stock and improved biosecurity barriers with neighbouring farms. The mixed woodland was planted in wetter, less productive areas such as corners of fields that have fluke habitats. These areas are now less wet due to the trees. The woodland has also seen survival rates in the flock improving greatly as the trees mature.



Woodland Creation Options

The [Forestry Grant Scheme](#) offers nine distinct Woodland Creation options that provide an initial planting payment covering capital works including planting and fencing, and annual payments for five years to cover the cost of maintaining the new woodland.

We have prepared three models for Ruthven, using a selection of the available grant options. These are to illustrate how options can financially differ from each other both in the short term ('establishment') and throughout a whole life of the woodland ('the rotation'), including restocking after felling.



The options we'll be looking at are:

- A. Small Farm Woodland;
- B. Native Broadleaves; and
- C. Conifer.

All species used within these options are defined as being 'Suitable' using Ecological Site Classification. This means the trees are likely to grow well and that there aren't many environmental factors that would limit their success.

Some areas are subject to additional payments that offer higher rates of grant payment to incentivise particular types of woodland creation in certain areas ('target areas'). This example is not within a target area and so will only receive standard grant rates.

A desk assessment reveals that there are some constraints on site that may affect the design of this proposal such as being within

a National Park, a Local Landscape Area, and being in close proximity to the Spey Special Area of Conservation. This may incur additional costs during the [Environmental Impact Assessment](#) process, though these have not been included in these models.

On-site assessments are also vital to identify other constraints that may not be discovered during a desk assessment, such as deep peat or archaeology. Links to further reading on planning a woodland creation proposal can be found at the end of this document.

The [Woodland Carbon Code](#) applies where the cost of grant doesn't cover the establishment costs. Assessments can be made about the carbon dioxide the woodland will sequester over its lifetime and these units can be sold to generate additional revenue. For the purposes of this exercise the carbon has been calculated assuming all areas are validated as part of a group scheme, potentially alongside other landowners, in order to reduce costs.

Please Note: The revenues and expenditures shown in this case study are indicative only and based on the assumed typical operations required to establish and manage these sites. The financial figures used are based on current prices (i.e. if you carried out the operations using rates in Spring 2021) and do not take into account inflation over time or any other investment modelling. As FGS grant payments are a contribution to costs, the assumption in this document is that the FGS grants pay an 80% contribution to the actual costs that would be incurred by the recipient. Costs may be reduced when establishing farm woodland by, for example, some of the initial work and maintenance being carried out with in-house labour.

All figures used in this document, such as costs, grant rates and timber prices, are subject to change over time and a range of factors including soil conditions, distance to market, and market buoyancy can affect the financials for any new woodland. With this in mind you should not use the assumed figures in this document when modelling your own new woodland.

Model A – Small or Farm Woodland

The Small or Farm Woodland option is for creating discrete small-scale mixed broadleaved and conifer woodlands on farms and other rural land.

The aim of this option is to plant small scale productive woodlands. Trees planted under this option must be planted at productive densities (greater than 2,500 trees per hectare).

Operations

- In this model we are planting 2.65 hectares predominantly of Silver birch and Norway Spruce at productive densities (2,500+ stems per hectare) with a small component of native broadleaves.
- The site will be protected by a stock fence and cultivated using excavator hinge mounding to suppress weed competition. The trees would then be maintained for the following five years until established, normally involving weeding and replacing any dead trees (also known as 'beating up').
- The woodlands will be subject to two thinning interventions prior to clearfelling at year 55 and then the site will be re-cultivated and restocked (replanted) and fences and gates replaced.
- The WCC income generated is small when spread over the rotation. An alternative would be to sell all of the carbon upfront which will reduce the scheme participation costs and therefore may be more profitable.

- Based on the operations and assumptions above we have worked up the following financial model.



Financial Overview

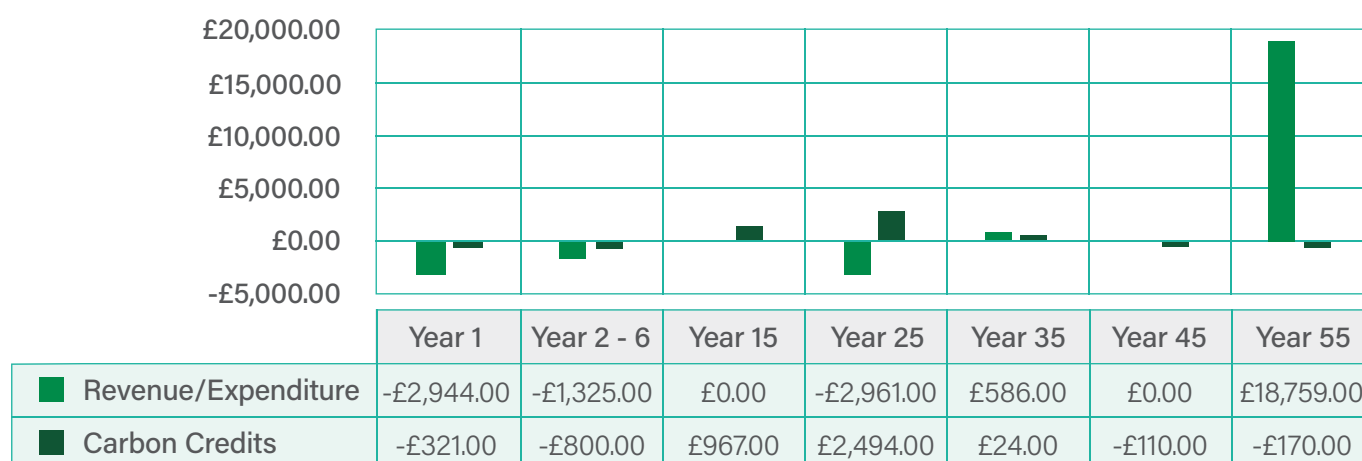
The total establishment expenditure in the first six years is **£4,269.00**

The total harvesting revenue over the rotation is **£16,384.00**

The total carbon revenue over the rotation is **£2,084.00**

The total potential revenue over the rotation is **£14,199.00**

Potential Rotation Revenue/Expenditure



	Expenditure (£)	Revenue (£)	Total (£)
Establishment (Year 1)			
Capital grant payment		11,776	11,776.00
Capital operations costs, including:			
• Planning/Site Assessment			
• Stock Fence & Gates			
• Mounding			
• Tree stocks			
• Planting costs			
• Deer management			
• Supervision/Management	14,720		14,720.00
Establishment Net			-£2,944.00
Maintenance (Years 2 to 6)			
Year 1-5 Payments		5,300	5,300.00
Maintenance Operations, including:			
• Beating up			
• Weeding			
• Fence maintenance			
• Supervision/Management	6,625		6,625.00
Maintenance Net			-£1,325.00
1st Thinning (Year 25)			
Conifer income		1,350	
BL income		480	1,830.00
Access road construction (100m)	3,000		
Planning/Site Assessment	400		
Site preparation/signage	400		
Machinery to site	76		
Production cost	915		4,791.00
1st Thinning Net			-£2,961.00
2nd Thinning (Year 35)			
Conifer income		1,755	
BL income		900	2,655.00
Planning/Site Assessment	400		
Site preparation/signage	400		
Machinery to site	94		
Production cost	1,125		
Road Maintenance/Remedial	50		2,069.00
2nd Thinning Net			£586.00
Clearfell (Year 55)			
Conifer income		35,125	
BL income		7,615	42,740.00
Planning/Site Assessment	400		
Site preparation/signage	400		
Machinery to site	1,035		
Production cost	12,420		
Road Maintenance/Remedial	50		
Cultivation & Restocking	3,180		
Replacement of Fence & Gates	6,496		23,981.00
Clearfell Net			£18,759.00
Carbon Credits			
Lifetime	2,881	4,965	£2,084.00
Potential Rotation Revenue/Expenditure (over 55 years):			£14,199.00

Model B – Native Broadleaves

The Native Broadleaves option is for creating native broadleaved priority woodland habitats.

The aim of this option is to plant native woodlands for biodiversity and amenity benefits, focusing on the environmental benefits rather than financial.

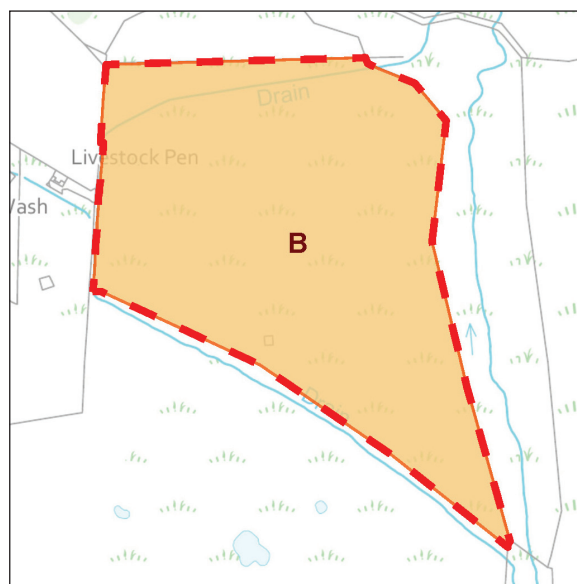
Unless planted at high density these woodland are not normally subject to harvesting or other similar interventions.

Operations

- In this model we are planting 6.58 hectares comprising predominantly of Downy birch with some Oak, Hazel, Holly, and Rowan.
- The site will be protected by a deer fence and cultivated using excavator hinge mounding to suppress weed competition. Mounds will be created at variable densities to mimic natural woodland dispersal. The trees would then be maintained for the following five years until established, normally involving weeding and replacing any dead trees.
- The woodland will not be subject to any felling.
- As this model is not likely to be felled there will be no future income through timber sales, however it will be eligible for

Carbon Credits. The approximate income through the Woodland Carbon Code is displayed below.

- Based on the operations and assumptions above we have worked up the following financial model.



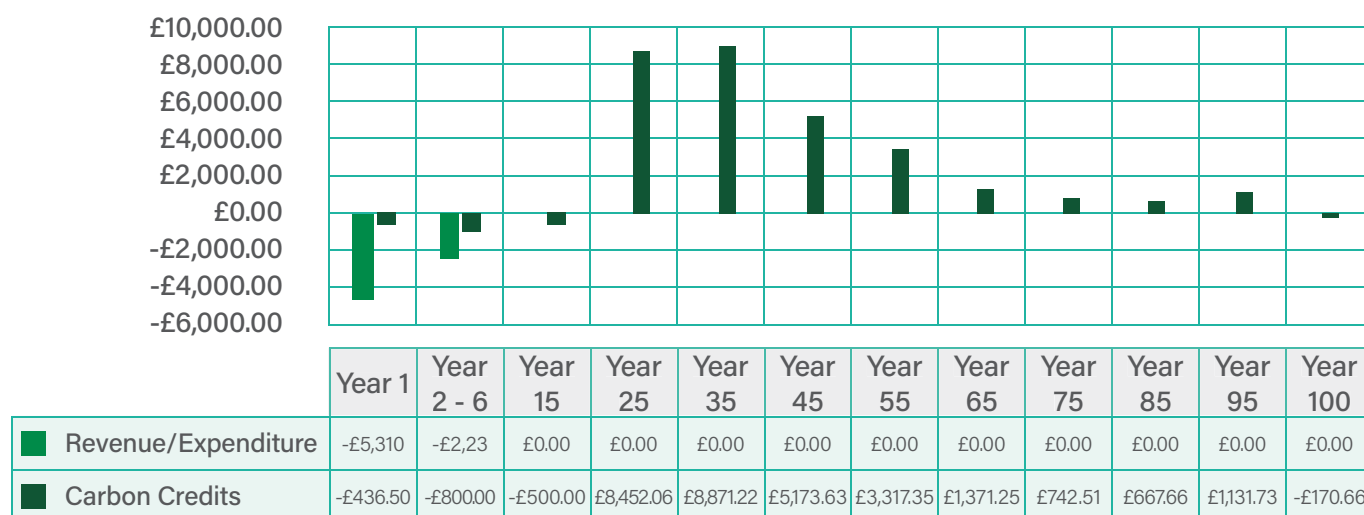
Financial Overview

The total establishment expenditure in the first six years is **£7,547.00**

The total value of carbon credits available for this model over 100 years is **£27,820.25**

The total potential revenue over one hundred years is **£20,273.25**

Potential Rotation Revenue/Expenditure



	Expenditure (£)	Revenue (£)	Total (£)
Establishment (Year 1)			
Capital grant payment		21,242	21,242.00
Capital operations costs, including:			
• Planning/Site Assessment			
• Deer Fence & Gates			
• Mounding			
• Tree stock			
• Planting costs			
• Deer management			
• Supervision/Management	26,552		26,552.00
Establishment Net			-£5,310.00
Maintenance (Years 2 to 6)			
Year 1-5 Payments		8,948	8,948.00
Maintenance Operations, including:			
• Beating up			
• Weeding			
• Fence maintenance			
• Supervision/Management	11,185		11,185.00
Maintenance Net			-£2,237.00
Carbon Credits			
Lifetime	6,304.75	34,125	£27,820.25
Potential Rotation Revenue/Expenditure (over 100 years):			£20,273.25



Model C – Conifer

The Conifer option is for creating conifer woodlands on land that is suitable for timber production and that is accessible for timber transport.

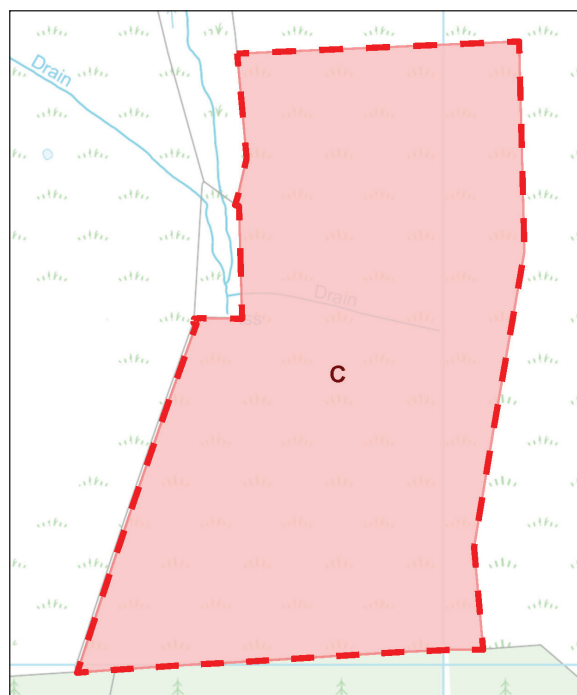
The aim of this option is to plant productive conifer - primarily Sitka spruce - woodlands that will maximise financial return.

Trees planted under this option must be planted at productive densities (greater than 2500 trees per hectare).

Operations

- In this model we are planting 16.38 hectares comprising predominantly of Sitka spruce with a small amount of Norway spruce and some native broadleaves.
- The site will be protected by a stock fence and cultivated using a continuous moulder to suppress weed competition. Trees will then be straight planted, taking a squad of three planters up to five days. The trees would then be maintained for the following five years until established, normally involving weeding and replacing any dead trees.
- The woodlands will be subject to two thinning interventions prior to clearfelling at year 55 and then the site will be re-cultivated and restocked (replanted) and fences/gates replaced.

- Due to the value of grant being paid, this model would not be eligible for the woodland carbon code.
- Based on the operations and assumptions above we have worked up the following financial model.



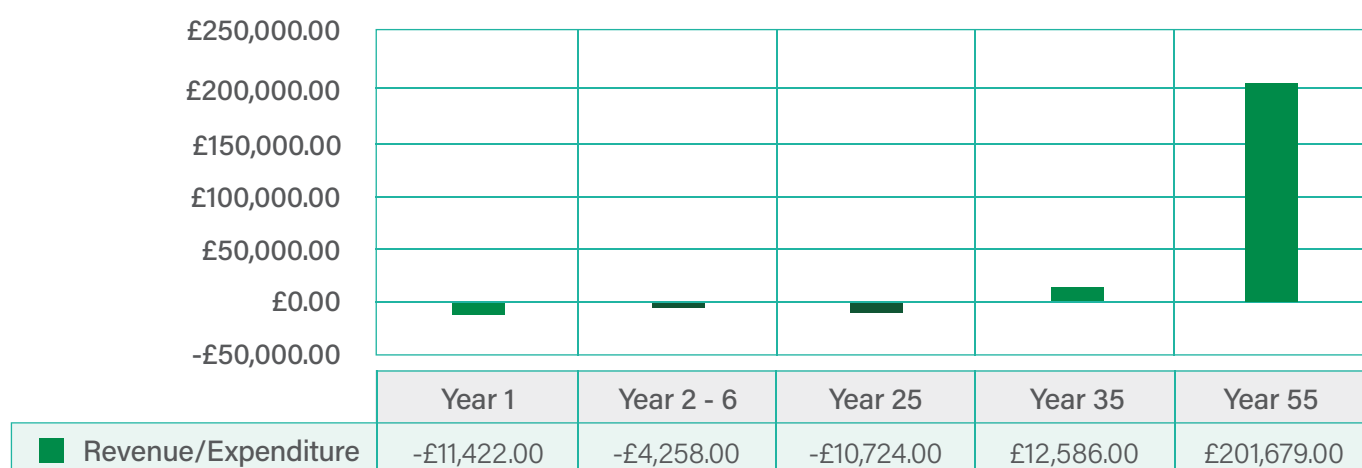
Financial Overview

The total establishment expenditure in the first six years is **£14,218.00**

The total harvesting revenue over the rotation is **£203,559.00**

The total potential revenue over the rotation is **£189,341.00**

Potential Rotation Revenue/Expenditure



	Expenditure (£)	Revenue (£)	Total (£)
Establishment (Year 1)			
Capital grant payment		39,838	39,838.00
Capital operations costs, including:			
• Planning/Site Assessment			
• Stock Fence & Gates			
• Mounding			
• Tree stock			
• Planting costs			
• ATV access construction			
• Deer management			
• Supervision/Management	49,798		49,798.00
Establishment Net			-£9,960.00
Maintenance (Years 2 to 6)			
Year 1-5 Payments		17,035	17,035.00
Maintenance Operations, including:			
• Beating up			
• Weeding			
• Fence maintenance			
• Supervision/Management	21,293		21,293.00
Maintenance Net			-£4,258.00
1st Thinning (Year 25)			
Conifer income		18,930	18,930.00
Access road construction (600m)	18,000		
Planning/Site Assessment	800		
Site preparation/signage	600		
Machinery to site	789		
Production cost	9,465		29,654.00
1st Thinning Net			-£10,724.00
2nd Thinning (Year 35)			
Conifer income		24,540	24,540.00
Planning/Site Assessment	800		
Site preparation/signage	600		
Machinery to site	789		
Production cost	9,465		
Road Maintenance/Remedial	300		11,954.00
2nd Thinning Net			£12,586.00
Clearfell (Year 55)			
Conifer income		332,890	332,890.00
Planning/Site Assessment	800		
Site preparation/signage	600		
Machinery to site	5,836		
Production cost	87,540		
Road Maintenance/Remedial	300		
Cultivation & Restocking	19,656		
Replacement of Fence & Gates	16,461		131,193.00
Clearfell Net			£201,697.00
Potential Rotation Revenue/Expenditure (over 55 years):			£189,341.00

Next Steps

Before embarking on the creation of a new woodland we encourage you to discuss your plans with any relevant stakeholder such as the landowner, neighbours, and communities that may be affected by the planned woodland.

Once you're ready to progress with a new woodland creation application then you should read the guidance listed below. Using these guides should get you to the point of producing at least a basic planting proposal map that consolidates your ideas into a plan.

- [Woodland Creation Application Guidance](#);
- [Woodland Creation Supporting Information Document](#); and
- [Woodland Creation Applications – A Guide for Land Managers](#).

If you are unfamiliar with carrying out desk and field research for new woodland creation proposals then we recommend that you hire a forestry professional to carry out this work.

Once you have a planting proposal map you can contact us using the contact details on the back page of this document. We can then either offer advice or provide you with contact details for forestry professionals operating in your area that may be able to help you progress your idea.

Our website has further guidance and publications on [woodland creation](#).

If cash flow is a concern for you, we offer loans for small scale woodland creation proposals, where we can provide 50% of the capital costs value of your FGS application up front, to a maximum of £40,000. Our website has more information on the [Small Woodlands Loan Scheme](#).



Further Information

Scottish Tenant Farmers Association (STFA)

Information for Tenant Farmers and latest news can be found on their website at www.tfascotland.org.uk

The Forestry Grant Scheme (FGS)

Information on currently available grants and payment rates can be found on the Rural Payments and Services FGS web page at www.ruralpayments.org/topics/all-schemes/forestry-grant-scheme

The UK Forestry Standard (UKFS)

The UKFS is the benchmark for sustainable forest management. All forest operations and management practices must comply with UKFS requirements and should follow best practice guidelines. More information on the standard can be found on our website at www.forestry.gov.scot/sustainable-forestry/ukfs-scotland

Woodland Carbon Code (WCC)

The Woodland Carbon Code is the voluntary standard for UK woodland creation projects where claims are made about the carbon dioxide they sequester. Independent validation and verification to this standard provides assurance and clarity about the carbon savings of sustainably managed woodlands.

Further information on the WCC can be found on their website at www.woodlandcarboncode.org.uk

Finding help for your Woodland Creation plans (list not exhaustive):

- [The Farm Advisory Service \(FAS\)](#)
- [Woodland Trust Scotland](#)
- [Cairngorm National Park Woodland Challenge Fund](#)
- [Loch Lomond & The Trossachs National Park](#)
- [Clyde Climate Forest - GCV Green Network](#)
- [Borders Forest Trust](#)
- [Tweed Forum](#)

Legal Advice

If you require advice regarding your tenancy or what restrictions may apply for creating new woodlands on a tenanted farm we recommend that you contact your solicitor in the first instance.

Disclaimer

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Lesley Simmons, Ruthven Farm

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