

Woodland Creation: Financial case study, 10 hectare site



Understanding woodland financials (All figures accurate as of February 2023)

By planting the right trees in the right place, you can diversify your income and bring direct benefits to your land, your local community, and the environment. Woodland creation is a long-term commitment that provides new reliable income streams with far-reaching benefits.

When looking to understand the value woodland can bring, it's important to recognise the variables that influence income. These factors include species, growth rate, spacing, rotation length, woodland size, and the location of your woodland – all of which can vary considerably resulting in a number of possible combinations and outcomes. This real-life example of a woodland creation scheme demonstrates how the landowner created woodland to benefit the planet, while generating income. All figures in this case study are rounded to the nearest £100.



A project to enhance the local landscape, improve biodiversity, and create a legacy for future generations

When the owner inherited their family farm in the northeast of England, comprised of 10 grass meadow fields, they immediately began to transform it into a Green Energy hub with ground source heating, a wind turbine, and multiple solar panels. The land on the farm had been exclusively grazed by sheep and cattle for over 50 years and was now home to a small sheep flock, with lambing once a year. The owner, who had a profession outside of their work on the farm, felt as though there was only a small financial gain from the farm and wanted to leave a long-lasting impact, which led them to consider alternative land use options. As an environmentally-conscious individual, the owner decided to create woodland to benefit the planet, applying for the [Woodland Creation Planning Grant \(WCPG\)](#) and the [England Woodland Creation Offer \(EWCO\)](#).

Over time, the new woodland will become a vista of vibrant broadleaf trees which will enhance the local

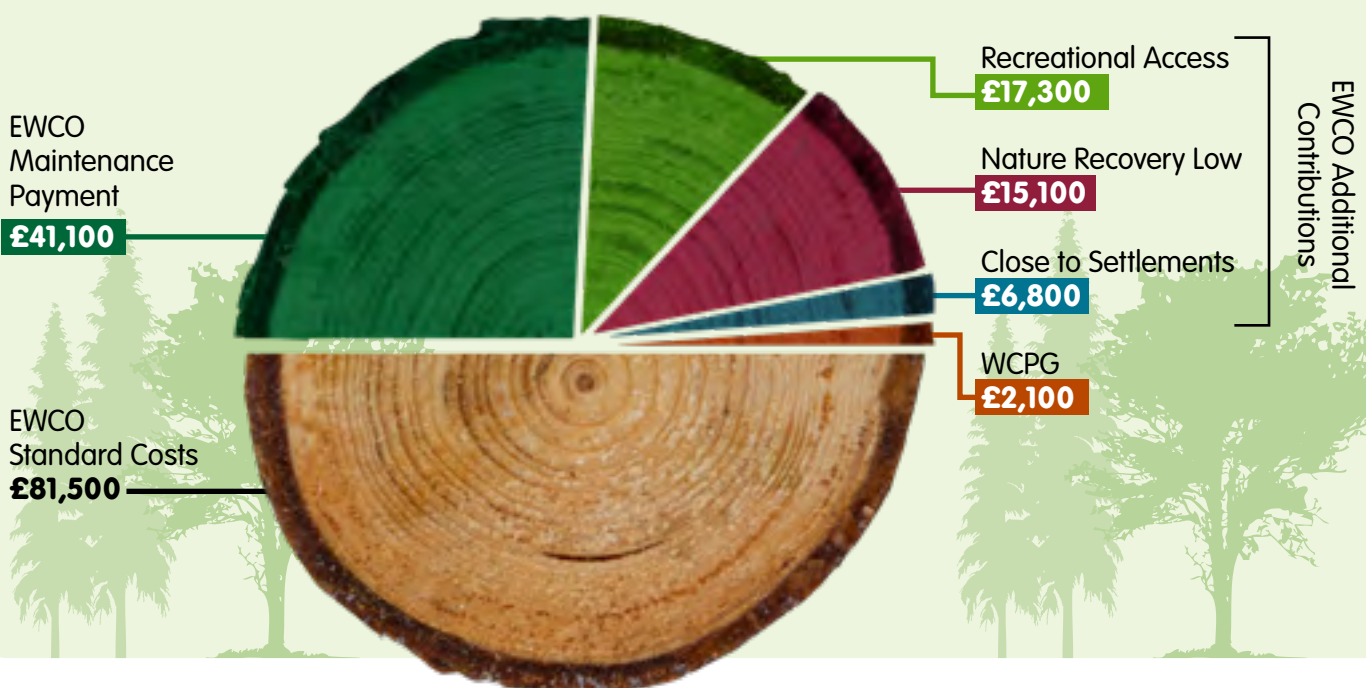
landscape, connecting existing hedgerows and trees, and integrating with existing features. The woodland will improve biodiversity, encouraging more wildlife into the area, and specific species will be planted adjacent to existing streams and a pond on site, which will improve flood risk prevention and water quality. Public access will allow the wider community to enjoy the woods, and with over 20,000 trees being planted as part of the project, the woodland will capture carbon to help mitigate against the negative impacts of climate change, while providing an income stream for the owner.

Long-term goal: Enhance the local landscape, improve biodiversity, and leave future generations with a better, cleaner, planet.

Grant income for planning and establishing woodland

The Forestry Commission and our partners offer a range of funding to suit different woodland creation projects, offering farmers and landowners the flexibility and financial support to plan, plant, and maintain new woodland in England.

This scheme, which is over 10 ha, received £163,900 (£12,000 per ha) from woodland creation grants made up of payments from both the Woodland Creation Planning Grant (WCPG) and the England Woodland Creation Offer (EWCO).





Woodland Creation Planning Grant (WCPG)

The process of designing new woodland brings together your objectives, the site context, suitability, and environmental, economic, and social factors into a plan that will make your woodland sustainable and UK Forestry Standard (UKFS) compliant. WCPG provides funding to landowners to help cover the cost of producing a compliant woodland creation design. This project received a total of **£2,100** in WCPG grant payments.

England Woodland Creation Offer (EWCO)

EWCO supports the establishment of new woodland by offering financial support for capital costs, costs for maintaining young trees for up to 10 years, and further support for installing infrastructure to manage your woodland. It recognises the public and environmental benefits that woodlands bring, by providing stackable payments – known as Additional Contributions – to ensure the right tree is planted in the right place, and for the right reason. This application, which proposes over 10 ha of new woodland, will receive a total of **£161,800 (£11,800 per ha)** in grant payments over 10 years, made up of Standard Costs, Additional Contributions, and Annual Maintenance payments.

Standard Costs

The standard cost grant payment of £81,500 has offset most of the costs associated with creating the woodland. The highest cost of this scheme was buying and planting the trees. Approximately 20,100 trees, made up of 15 different species, were needed for the project.

Maintenance

The landowner will receive maintenance payments over the next 10 years, which cover the cost of tree replacement and weeding on the site. Land managers should anticipate some tree losses in the early years of the planting and plan for their replacement. Maintenance of the trees and their protection will help

minimise these losses. In a project of this scale, up to 6,000 trees could be needed to replace losses in the first few years.

Additional Contributions

Under EWCO, an application may be awarded extra stackable payments for woodland projects that provide wider benefits to people and the environment. This scheme received additional payments for supporting nature recovery, being close to settlements, and allowing public access.

- **Nature Recovery – Lower rate (one off payment of £15,100).** The scheme created over 10 ha of new woodland habitat. To improve the genetic diversity of the woodland, a mix of species were carefully chosen to increase resilience to pests, diseases, and climate change. The woodland further integrates with existing hedgerows and trees, and within these areas the woods will improve the diversity of the age and size of trees to provide a wider variety of habitats for woodland species including insects and fungi.
- **Recreational Access & Close to Settlements (one off payments of £17,300 and £6,800).** A network of paths will be maintained to allow for easy access for the local community to enjoy the woodland. The owners plan to engage with local schools for wildlife visits in the future.

Discount rates. All figures in the rest of this case study have a discount rate applied. Discount rates are used to convert future cash flows into a present value. As this case study is looking at a period spanning 50 years, future costs and income need to be converted into a present value to make everything comparable. Whilst there is no "correct" discount rate, a discount rate of **3.5%** (as derived from the social

time preference rate outlined in the HMT Green Book¹) is used for this evaluation. For example, £100 in 10 years' time is £70.89 in present value.

Applying this discount rate to the woodland creation grants outlined above, the **£163,900** in total grant funding is discounted to **£152,900** in present value. That is mainly due to the 10-year period of the maintenance grant.

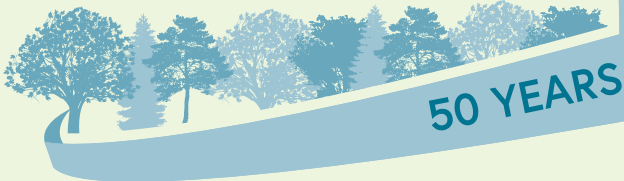
£ Income from timber

The demand for wood products in the UK hugely outweighs domestic production. We import over 80% of our timber, which was valued at £8.5 billion in 2020, making the UK the second largest net importer of forest products in the world². There is an active market for timber, and trees provide a number of opportunities to generate income, both from thinning and clear felling.

There are two ways a woodland owner can access income from timber: first, the sale of standing trees, usually via an agent, that are harvested by the

purchaser, or secondly the sale of timber harvested by the woodland owner and sold directly from the roadside. Whilst commercial timber production is not the landowner's primary goal, approximately a third of the woodland is expected to be thinned regularly. Assuming timber income from the sale of standing trees, over the 50-year period, the woodland is estimated to yield 390 m³ (80 m³ per ha) from regular thinning on 5-year intervals. Using an estimated standing price of £21/m³ for a broadleaf stand, the present value from thinning is estimated to be **£2,400 (£490 per ha)**.

Using an estimated standing price of **£21/m³** for a broadleaf stand.



Estimated present value **£2,400**
(£490 per ha)

Yield 390m³ (80m³ per ha)
from regular thinning on 5-year intervals

Each woodland scheme has different objectives. A scheme with more commercial woodland cover would see an increase in per hectare income for timber.



Income from carbon

Carbon markets present an opportunity for landowners to generate more income from their land, by selling the additional carbon that new woodlands will sequester, while at the same time helping to mitigate the impacts of climate change. Woodland creation projects can sell two types of carbon units:

- **Pending Issuance Units (PIUs)** – an estimate of the future carbon dioxide the woodland will capture once the trees have grown. These aren't guaranteed and therefore can't be used to report against emissions, however, they allow companies to plan for future offsetting and can help with the associated costs of establishing your woodland. Typically, the value for PIUs is lower than WCUs
- **Woodland Carbon Units (WCUs)** – independently verified units that represent a tonne of CO₂ which has been sequestered on a Woodland Carbon Code certified woodland. There will be a delay to verify WCUs but as they're guaranteed, they allow companies to state their carbon neutrality as soon as purchased, often resulting in a higher price per unit

PIUs convert into WCUs at a certain point in time, once the 'promise' of future carbon has been verified as

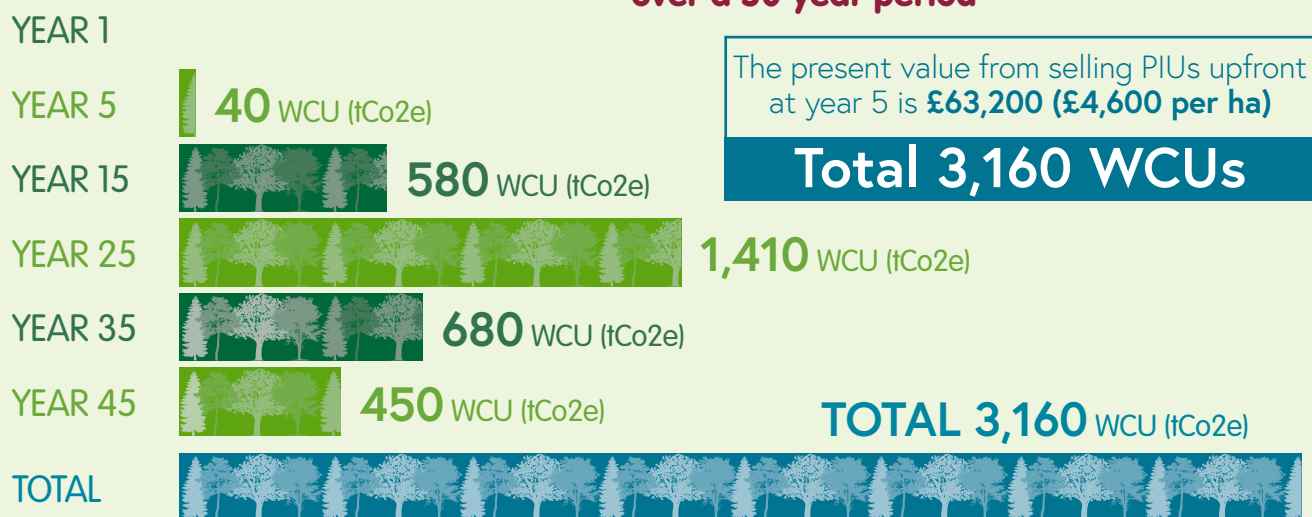
converted into actual carbon storage. The [Woodland Carbon Code \(WCC\)](#) is the quality assurance standard for UK-based woodland creation projects hoping to generate carbon credits. To find out more about woodland and carbon, [read our fact sheet on GOV.UK](#).

As this project is a small woodland, the landowner submitted a group application to the WCC together with some neighbouring landowners. Group applications allow projects to validate together in a single statement, rather than individually. This allows landowners to save on individual validation costs, and all parties have a common responsibility for ensuring the WCC requirements are met at all sites.

The scheme will verify its WCUs every 10 years from year 15 onwards, selling its PIUs up front in Year 5. In the first 45 years, the scheme is likely to deliver over 3,160 WCUs. Whilst there is no official price for carbon units, the weighted average price of successful bids at the WCaG auction in May 2022 of £23.70 is used to estimate the income from this sale. By selling this carbon upfront at year 5 as PIUs, the estimated income from the carbon market is **£63,200 (£4,600 per ha)**.

Estimated Woodland Carbon Units (WCUs)

over a 50-year period



There are several costs associated with selling carbon. These include validation of the project, and verification of carbon sequestered by the woodland over time, as well as registry fees to issue and convert units. Registration needs to happen prior to any woodland creation activity commencing, and validation needs to happen within 3 years of the registration date. If the scheme applies for the [Woodland Carbon Guarantee \(WCaG\)](#), verification

(comprising a survey by an independent third party and converting carbon units from PIUs into WCUs) can happen every 5 years from year 15 up until the end of the WCaG in year 33, and then every 10 years from year 40. If the scheme has not applied to WCaG they will need to verify at year 5 and then at least every ten years. For this scheme, the costs associated with selling carbon are estimated at **£4,600** over 45 years.

Woodland Carbon Guarantee (WCaG)

Projects registered with the WCC can apply for the WCaG, a scheme which allows landowners to sell their verified Woodland Carbon Units (WCUs) to the government for a guaranteed index-linked price for the life of the project contract, every 5 or 10 years up to 2055/56. To allow for flexibility and the opportunity to make income from a rising market, landowners can still choose to sell carbon units on the open market at any point in time.

How does this compare to agricultural income?

As with any change, there will be some costs associated with the establishment of woodland. In this case, where the land was previously used for livestock, the landowner has foregone agricultural income. Whilst it is impossible to predict future income from any agricultural land use with any certainty (especially for the next 50 years), for this scheme the 5-year average Farm Business Income from the annual Farm Business Survey (FBS) for England and Wales is used to estimate the income foregone³.

A farm in the northeast of England had an average farm business income of £270 per ha over the period of 2016/17-2020/21. In this project, 13.7 ha of the total land was used for agricultural activity. Applying the average figure, the income foregone per annum is £3,700. Over a 50-year period, applying discounting for present value, this amounts to £63,200 (£4,600 per ha) of income foregone from agricultural activities on the land.

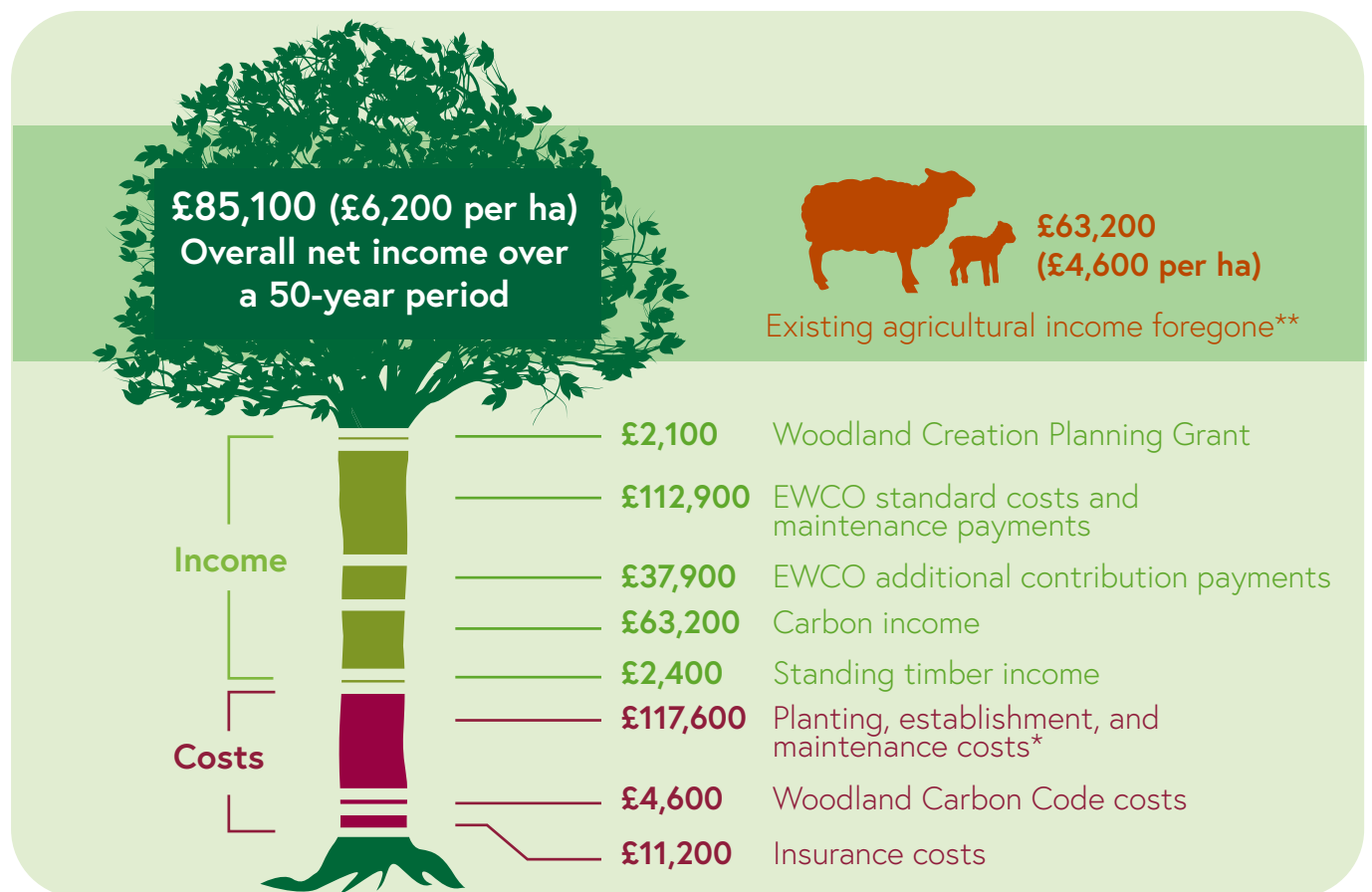


How do the financials stack up?

The income and costs for this example have been calculated over a 50-year period, though it is important to note that some finances impact a shorter duration of this period. For example, for grant payments, WCPG income would be made prior to the establishment of the woodland, while EWCO maintenance payments are only available for the first 10 years of the scheme. Thinning is at 5-year intervals, and carbon income has been calculated for the scheme by selling carbon units up front at year 5.

Over the 50-year period, the scheme will bring in an overall net income of **£85,100 (£6,200 per ha)** at

present value. Agricultural income foregone in this scenario would be £63,200 (£4,600 per ha), showing a £21,900 increase in income over the 50-year period, when compared to the previous agricultural activity. This shows how a change in land use to woodland creation can benefit a business' finances. There are further advantages as woodland management requires significantly less labour than agricultural activities. After the early years of establishment, when weeding and pest control is required, trees will begin to thrive on their own – with thinning every few years, and other management interventions such as pruning and squirrel control.



Description of Income	Income	Description of Costs	Costs
Woodland Creation Planning Grant	£2,100		
EWCO standard costs and maintenance payments	£112,900	Planting, establishment, and maintenance costs*	£117,600
EWCO additional contribution payments	£37,900		
Carbon income	£63,200	Woodland Carbon Code costs	£4,600
Standing timber income	£2,400		
		Insurance costs	£11,200
Total Income	£218,500	Total Costs	£133,400

*Planning, establishment, and maintenance costs includes all costs associated with initial planting, shelters, fencing, rabbit netting, badger gates, vehicle deer gate, pedestrian deer gate, management, replacement (years 1-3), weeding, and fence maintenance.

** Where land was previously used for agriculture purposes, agricultural income has been calculated, to illustrate the income foregone with the land use change.

Wider benefits of woodland creation

With careful management, trees can provide an additional income stream, have a positive impact on your farm productivity and help to save costs, for example, you could heat your own buildings with woodfuel produced from your woodland. However, trees are much more than their commercial capacity: woodland can support health and well-being, improve air quality, offer shade for crops and livestock, prevent nutrient loss and soil erosion, capture carbon, improve water quality, boost biodiversity, and reduce the risk of flooding.

Discover the far-reaching benefits of woodland in our [brochure](#), or to find out more about how woodland can have a positive impact on your bottom line, [read our fact sheet on making money from trees](#).



Discover how woodland creation can benefit you

For guidance on woodland creation and information on grants and available support, visit: gov.uk/forestry/tree-planting-overview

Find out how other landowners are benefitting from woodland creation, visit: gov.uk/forestry/tree-planting-case-studies



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References

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2. Forest Research. Forestry Facts and Figures 2022 report: www.forestryresearch.gov.uk/publications/forestry-facts-and-figures-2022
3. DEFRA. Farm Business Survey. www.farmbusinesssurvey.co.uk

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