

The UK Forest Market Report

Issue 22 2020





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The Climate for Woodlands

The Buyer's Perspective



Gavin Adkins
Managing Director, Tilhill
Tilhill is the leading forest management and timber harvesting company in the UK.

We finished this section last year saying: “We can expect an unsettled few years... (ahead)”. How little did we know!

2020 has been the most extraordinary year for all of us, from both personal and professional perspectives, and I am very proud of the way that Tilhill, supported by our clients, contractors and suppliers has risen to the challenge. My thanks are due to all our stakeholders for their responses through this most difficult period.

The most unexpected aspect of 2020 has been the way the market for forest properties has grown. With over £200m of forest properties traded during the year this has been the biggest year on record. This is made up of 61 transactions, down 25% from last year. This lower number of transactions has meant that we have been unable to help as many investors as previous years to invest in forestry, which

is disappointing but understandable. Our Investment and Property Team are working hard to rectify this in 2021.

The market has been influenced by two major trends this year. Firstly, some very large transactions – our largest ever individual transaction seen in North Wales, and 15% of the transactions above £5m. Secondly, we have seen some astonishing prices being paid, particularly for younger forestry, demonstrating long-term confidence in the forestry market (these properties will not produce timber for another 20-30 years). These trends are explored further in this report.

However, the market remains well balanced, with plenty of opportunities to buy smaller forests and woodlands, allowing us to satisfy a wide range of our investors' interests. Smaller, mixed woodlands, offering investors an opportunity to invest for environmental and amenity interests have proven very popular, particularly those that are easily accessible.

I am very pleased to welcome an influx of new investors who are approaching us with interesting plans for forestry and woodland creation. In the light of the UK leaving the EU I am very pleased to see the level of interest from EU domiciled investors – even if it is difficult to meet them face-to-face currently.

The carbon story has been most significant this year, with many institutions exploring how carbon offsetting through woodland creation fits into their long-term plans. In addition, the wider commitment to Environmental, Social & Governance (ESG) in corporate planning, and renewed interest in natural capital accounting, is now featuring in

“We have seen some astonishing prices being paid, particularly for younger forestry”

our discussions with investors. We have created a new business team within Tilhill, CarbonStore, to help develop these ideas into reality for investors.

Creating new woodlands is a key area of interest for our investors, and it has been a struggle to find suitable land to satisfy this in 2020's smaller rural sales market. We see a strong pipeline of schemes in Scotland, growth in England, and after a poor year, renewed interest in Wales, but there remains some way to go before we reach the government's target of 30,000ha of new planting annually. I feel positive that the new wave of investors with environmental objectives will allow us to create exciting multi-purpose forestry schemes on land that would not be suitable for a straight commercial scheme.

Forestry enjoys a reputation as a contra-cyclical investment. With continued demand for home grown timber, exciting new uses for timber-based products, and especially with forestry's key role in helping combat the climate emergency we face, I am confident that we will see sustained long-term interest in forestry investment, and that our expanded Investment Team and CarbonStore will be able to help our investors assess and purchase suitable properties.

The Seller's Perspective



Fenning Welstead
Director, John Clegg & Co
John Clegg & Co is the leading forestry agent, particularly active in forestry sales.

What a year! – quite the most extraordinary in my working life.

The end of 2019 saw very strong sales of both farmland for planting and of immature crops. On the planting front Coulshill & The Corb was a large hill farm that sold strongly for afforestation. The successful purchaser beat off strong competition while also taking the risk that planting approval would be granted. As an example of a young crop, Glenhead & Arns was a 22-year-old, high yield class plantation that sold at almost £24,000/ha. As the year unfolded these apparently high prices were to be overtaken.

As Covid-19 began its influence, RICS Red Book valuations were qualified by an uncertainty clause, with no one being clear what the future would hold. A number of people left the market or made decisions not to buy because of it.

Others continued to invest. Events showed that forestry and land prices moved ahead strongly. In a low interest environment (which seems destined to last for some time), the desire to own real assets is a major driver. But there is also a wish to be able to tell stakeholders that you are doing something for the green economy and a new requirement for corporate reporting to meet statutory obligations under Environmental, Social & Governance (ESG) headings.

Based on a direct comparison between 2019 and 2020, the arithmetic average value per stocked hectare of the commercial forestry presented to the open market rose strongly but with significant geographical/quality variations. In 2019 it was recorded at £11,479 per hectare. For 2020 the average has increased to £15,962, an arithmetic increase of 39% that masks considerable geographic variation.

There have been several off-market transactions this year. In such an active market it is remarkable that sellers have been happy to negotiate. There may be various reasons for this, including a wish for a swift sale, a lack of publicity and no agency fees. However, direct evidence of forests on the verge of negotiated deals, that were subsequently exposed to the open market, proved highly rewarding for the sellers.

An analysis of 10 open market sales during 2020 reveals a variation between the top and bottom offers averaging over 50%. In one case the top offer was more than double the lowest. Given such variation between prospective purchasers, it is very difficult to arrive at a negotiated price that one can be confident maximises

the seller's return. The market evidence suggests that openly presenting it properly to competition has generated the strongest sales.

If you are an existing owner, why sell? That is a key question – for one thing what would you do with the money once the forest has been turned into cash? However, 'events' can make it a rational, or even the only, option.

If a sale is the decided course, then we recommend doing everything possible so that conveyancing can be simplified. Any loose points regarding access, boundaries and so forth should be sorted out before marketing. A buyer is thus presented with a clean title and there should be a straightforward route to completion of the sale.

“Events showed that forestry and land prices moved ahead strongly.”

The Market

Introduction

The main section of the UK Forest Market Report focuses on completed sales of commercial forestry properties which are over 20ha in size and predominantly planted with conifer. Other woodlands are covered in the Mixed Woodlands section of the report.

Where the report refers to individual years (2020 etc) the actual period covered is the 1st October to 30th September.

The UK Forest Market Report has been produced since 1988 and our data series now covers 23 years, incorporating 1,842 transactions which total some £1.46 billion and 289,000 stocked hectares (ha).

As such we believe that it is the most comprehensive publicly available record of forestry transactions in the UK.

Please note however that as our sample only included 61 completed sales, which we believe represents the vast majority of the market, the results are affected by large or high value transactions. In

addition, comparison of results from year-to-year can be affected by differences in the type, location and quality of properties between years.

More detail on the data analysis is available on request from Tilhill or John Clegg & Co. See contact details at the back.

Below: Ground preparation taking place.



Overview



Bruce Richardson
Lead Analyst, Tilhill

Over the year we recorded a total of **£200.18 million** of forestry properties traded, made up of **61** separate transactions. This is our highest value traded on record, beating even 2016 which included a large portfolio trade.

We recorded an increase in sales of **£73.4m** over 2019, an **increase of 58%**. This is due partly to the record prices being paid for prime forestry, and partly due to some very large individual transactions.

Scotland provided the largest share of the commercial forestry market at **69%** by value. **England** saw a quiet market in 2020 with only **5%** of the total market, and only one substantial property brought to market. **Wales** produced a much larger than normal share of the market at **26%** due to the sale of one very large property.

Overall, we recorded **16,595 gross hectares** (ha) of commercial forestry sold, of which 12,542ha were stocked or plantable (with the rest being open ground, tracks and other land cover). In this report, our analysis is based on the stocked ha within the forest as this is the productive commercial element. Despite the smaller number of properties traded, the stocked area was up 14% from 2019 (11,024ha).

The market offered properties in a range of prices, giving opportunities suitable for all investors. At the larger end of the scale 10 properties sold at above £5m, while at the smaller end 11 properties sold below £500,000. In addition, some thoroughly commercial properties of below 20ha in area are included in the Mixed Woodlands section, due to their size. In the sweet

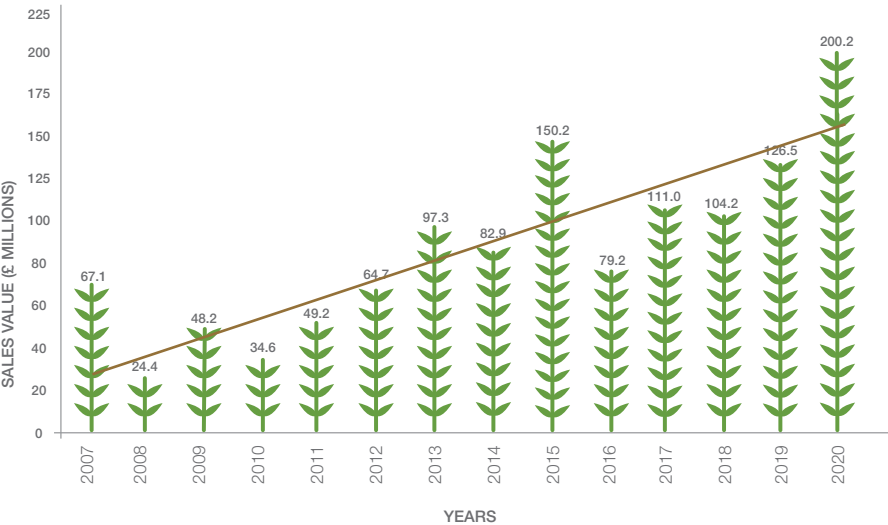
spot for private investors of between £500,000 and £1,500,000 there were 25 properties sold, which is 41% of the total.

The **average size** of a property sold this year was **206ha** (2019: 136ha), exaggerated by two larger properties in the sample. Without these two sales, the average would have been similar to last year at 127ha. In 2020, the cost of an average-sized property more than doubled from £1.562m in 2019 to **£3.282m** in 2020. Again, this figure is influenced by the two large transactions; without them, the average cost of a property would have been £2.312m – still a substantial increase.



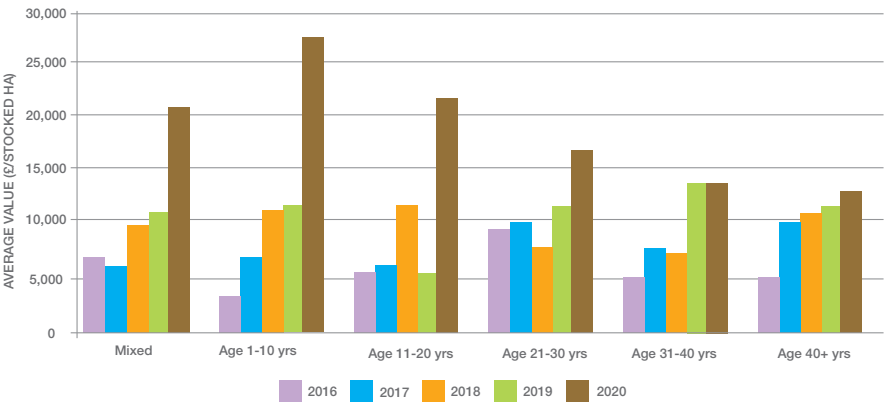
Recorded sales
69% Scotland
5% England
26% Wales

Fig. 1: Total Annual Value of Forestry Properties Sold



Overview

Fig. 2. Average Value per Stocked Hectare by Age



The most striking story this year has been the level of interest shown in younger restock sites as opposed to the more mature forests.

Counter-intuitively perhaps, the younger forests are attracting higher unit prices per ha than the mature forests. The reasons for this are discussed in more depth later. Part of the reason is that the 2020 market included some very high quality younger forestry in prime locations. However, we believe these prices show investor confidence in the

future of the timber market based on evidence that the improved varieties or types of spruce that has been planted in recent years are performing as forecast with improved yield and form.

It is noticeable also that prices in the older age classes remained the same as 2019, perhaps being priced on a known quantity and quality of timber and current timber prices.

These rising prices have made it very difficult for advisors to place a market value on forestry. This year, 40 of the 61 properties were sold above guide price. Of these, the average price paid was **48%** above guide. 7 properties sold at more than **75%** above the guide price and for the first time we saw a property sell at over three times the guide price. The market in 2020 has been very competitive.

We have seen investment interest from our traditional investor base attracted by the long-term returns from forestry investment; renewed interest from investors who in the current economic

Recorded sales against guide price



66% over guide
34% above 50%
over guide



Average cost of a forest property
2019: £1.56m
2020: £3.28m

turbulence are attracted by the contra-cyclical nature of forestry investment; and also new investors coming at forestry with carbon and wider ESG objectives. This is a well-balanced set of investor objectives which will direct forestry investment in a positive direction for the foreseeable future.

In conclusion, despite the problems with the Covid-19 related restrictions, the UK forestry market has performed robustly through 2020 producing record results in both scale and unit prices. The level of interest in younger forestry demonstrates a healthy long-term confidence in the productive capacity of our forest estate. Investors, old and new, bring different perspectives into forestry investment, making life interesting and challenging for their forest managers.

Additional analysis of the market is available on request from Tilhill or John Clegg & Co. Please see contact details in the back of this report.



Forest Values 2020

By Fenning Welstead



Above: Newly planted Sitka Spruce sapling

Why have Forest Values increased so strongly through 2020?

The factors that appear to be influencing the strong upward movement in forestry property values are:

- Low base rates that are forecast to be in place for some time.
- Uncertain prospects for other asset classes – offices, retail etc.
- Moves to decarbonise the economy backed by government policy.
- Emphasis on renewable/sustainable raw materials.
- Corporate reporting; ESG requirements.
- Desire for positive environmental PR.

During a period of low bank base rates forestry can be a very compelling investment. The underlying land is a real asset, and the growing trees get physically bigger year-by-year. Growth rates for spruce crops can be in excess of 5% per annum. The compounding of physical growth and likely growth in timber prices over time looks attractive. Forestry is also a relatively simple asset to manage and timber is a raw material that has many uses – the range of which seems set to expand with the potential to replace other materials, especially in packaging (eg paper bottles), and to be a constituent of new materials such as 3D inks.

Under present rules, carbon sequestration funding is only available in the UK for newly planted forests. Existing plantations cannot access this source of income. Is this sustainable? As we leave the CAP and rural support is re-designed to UK objectives could there be change?

Growth in market prices has been seen across the age range but most noticeably in the younger crop ages. The results for 2020 show remarkable prices having been paid for three forests in the 10-15 age range. All three are located in the Scottish Borders, a prime area for commercial forests. They all had well-developed access and internal roading; have proven to be capable of yielding high volumes of timber at harvest; and have been replanted to a high standard using improved plant stock.

These forests are now at the stage where the vigour AND quality of improved stock is readily apparent. For example, these two Full Siblings, psiPF81 and psiPF96, are both showing Yield Class 30 and improved straightness (25% better straightness than original QCI planting stock). On current projections these replanted crops should be available to harvest in the 2035-2040 period when forecasts indicate that demand will outweigh supply.

Factoring in a real growth in timber values over that time while discounting the future income at current low interest rates/yields can support these values. However, we must be careful not to extrapolate the results from a few sales across the whole market.

We have seen very competitive bidding at closing dates. There are several investment funds actively seeking forestry assets but also individuals too. Bidding is

not always consistent. Results from closing dates show a range of values being attributed to the same property. Looking at a sample of results from 2020 the winning offer has been 60% higher than the lowest bid. Often the top offer is only just above the runner-up.

It is yet unclear just how natural capital will be recorded and accounted for. The presentation by Ece Özdemiroğlu of ettec on page 18 will address how this is developing. Whatever the agreed methodology, it means nothing if you don't own the land. We believe that this is a significant driver in the very strong interest in owning forestry.

Physical growth rates for spruce crops can be in excess of 5% per annum.

Woodland Creation

By Bruce Richardson



13,300 ha planted of which 57% were conifers.

When we sat down back in January to plan out this year's report, we chose a theme of 'The Climate for Woodlands'. At that time, we anticipated that the influx of new investors interested in woodland creation for a wide variety of objectives would be the main story for the year. How wrong we were.

The Forest Research woodland creation statistics for the year ending March 2020 show little progress towards the 30,000ha per annum planting target from the previous year.

Overall, the area planted remained static at 13,300ha although the make up between the nations varied. Of this 57% was in conifers, the main area of interest to commercial investors.

Scotland, with 82% of the total newly planted area led the pack as always with nearly **11,000ha** of land planted. Of this 67% was in conifers, confirming Scotland's dominant position for commercial investors. Interestingly, the average size of scheme was relatively small at around 25ha, possibly indicating that the majority of schemes are landowners tidying up small parcels of less productive land. Can we anticipate that the supply of this type of land will start to dry up at some stage, and that investor-led schemes will take a larger role? The pipeline of schemes coming through the approval process remains very strong this year.

Fig. 3: Total new planting in UK (including conifer planting)
(Source: Forest Statistics 2020, Forest Research)



England has shown a welcome increase in planting, continuing a trend that we have seen over the last five years. With **2,330ha** planted this represents **18%** of total GB planting, up from 1,420ha last year. In England only 10% of the land planted was in conifers demonstrating the preference for mixed schemes. We have seen a noticeable pickup in interest in woodland creation during the year for a variety of reasons. The schemes along

the HS2 corridor are popular. There is a considerable interest in the additional funding available through carbon, and a more general reassessment of land use in the light of anticipated changes to agricultural support post Brexit.

Sir William Worsley expands on the work in England on page 14.

Woodland Creation

Wales disappointed in 2019/20, with only **80ha** planted, the lowest annual figure seen in 50 years. This was split evenly between commercial and broadleaf schemes. The main hold up seems to be in the speed of processing grant applications. Encouragingly in 2020 the grant window was two times oversubscribed, and a new grant window, due later in 2020, is attracting considerable interest.

Planting of new woodlands in 2020 has been restricted probably by a mixture of factors, including Covid-19, continuing uncertainty about Brexit and wider economic ructions. Strutt & Parker has seen the supply of farms coming to market

fall by 62% compared with 2019 and this is consistent with Tilhill's analysis which has recorded 2,550ha (2019: 8,500ha) of land sold where the new owner's objectives are primarily woodland creation. We anticipate this lack of wider market activity to work through in the planting figures in future editions of this report.

In the farmland market, Strutt & Parker also note the increase in prices paid for land suitable for woodland creation, and particularly that forestry investors are outbidding farming interests for suitable hill land – consistent with our own experience.

The pipeline of schemes coming through the approval process remains very strong this year.



Forestry Views from the Public Sector Gallery



Sir William Worsley

Sir William Worsley, Chairman, Forestry Commission

It is interesting to focus on the rapidly rising profile of woods and forests in the current social, political, and environmental landscape. This is recent and is, in many ways, a result of the importance of the tree in carbon sequestration and climate change and this has caught the public's imagination. It is also important to reflect on the race by the different political parties during the last election campaign to plant ever more trees.

The government commitment to Net Zero emissions by 2050 is supported by an ambition to plant 30,000 hectares of trees per year across the UK by 2025. This was recommended by the Committee on Climate Change report **Land use: Policies for a Net Zero UK** and spells out a step change from the current levels of woodland creation, of just over 13,000 hectares across the UK in 2019/20.

The challenge is to return to levels of woodland creation last seen forty years ago and more, as well as ensuring these woodlands are sustainably managed for the long term. We need to do this while responding to the developing biodiversity crisis, the economic impact of the coronavirus pandemic, and the renewed interest in and engagement with green spaces that emerged during the pandemic.

The solutions need to focus on a few key aspects:

- Ensuring woodland and forestry become a familiar natural choice for private landowners, as part of a wider portfolio of land management options.
- Driving the development of a larger, more efficient, more bio-secure and more resilient woodland creation sector.
- Nurturing thriving markets that support return on investment for landowners and land managers.

Making woodland and forestry a more intuitive choice relies on access to forestry expertise, and critically on good visibility of land use priorities and decisions. The Forestry Commission is involved in initiatives to define such priorities at the local level, both through the Local Nature Recovery Strategies pilots and through involvement in local woodland creation partnerships such as the Northumberland Forestry Partnership.

These provide a great opportunity to promote how UK Forestry Standards (UKFS) compliant woodland creation and management can help meet local priorities, by delivering a range of ecosystem services in addition to the contribution to the local economy. These include improvements to air and water quality, flood mitigation, biodiversity, carbon sequestration, and recreational, health and well-being benefits.



The challenge is to return to levels of woodland creation last seen forty years ago and more, as well as ensuring these woodlands are sustainably managed for the long term.

It will also be critical that these ecosystem services are better valued, and monetised, alongside already marketable products such as timber and wood products, so that forestry income increases as this is needed to incentivise owners. While recreation activities can generate income, and the domestic carbon market is developing (through the Woodland Carbon Code and most recently in England through the Woodland Carbon Guarantee), these markets are still nascent. The growing interest in public and private funding of the services will be a key driver to create and manage the woodlands of tomorrow.

Finding the land to plant is the real challenge. There are lots of bodies that are keen to invest in commercial forestry, as it is producing a good return, and in other sorts of forestry for social reasons, however in a small country like England there is a lot of competition for land use. One of the key challenges for government is to get the future Environmental Land Management (ELM) Scheme right. If they do there will be a real incentive for land managers to plant trees and then manage them, which is equally as important.



Woodland Carbon

The hectareage of UK woodland validated (i.e. certified) under the Woodland Carbon Code rose 60% year-on-year

The woodland carbon market has blossomed over the past 12 months. As the Fig.4 below illustrates, the hectareage of UK woodland validated (i.e. certified) under the Woodland Carbon Code rose 60% year-on-year in 2019 to 9,372 hectares. It now has both momentum and substance.

These two characteristics have remained intact over the past 10 months and have had powerful consequences for the forestry market, especially unplanted land: it is important to reiterate that only new planting schemes are eligible for carbon funding.

Woodland carbon provides an additional and increasingly meaningful source of income for woodland creation schemes. This increased earning potential has lifted the underlying asset price. Trees’ ability to sequester carbon has also attracted a new category of buyer.

Companies which buy land for planting can not only offset their emissions but also exploit a tax efficient shelter for their profits. The activity is known as ‘insetting’. It is increasingly popular and has attracted a new and influential source of demand to the forest market.

Insetting activity is growing in tandem with its close, but more hands-off relation, ‘offsetting’. This involves companies simply purchasing the woodland-generated carbon units from landowners in order to mitigate their CO2e emissions and demand for carbon offsets has been underpinned by several important factors.

From 1st April 2019, the Energy and Carbon Report Regulations decreed

that all listed and ‘large’ companies must calculate and report their annual emissions. Increased transparency, better understanding and growing recognition of the scale of the ‘net zero by 2050’ target have also contributed.

The pressure on companies to respond is intensifying as UK citizens become ever more aware of the threats posed by climate change. In March 2020, UK Research and Innovation released its survey on public attitudes to climate change. 72% of people now believe heatwaves are a serious risk to the UK, against just 23% in 2013.

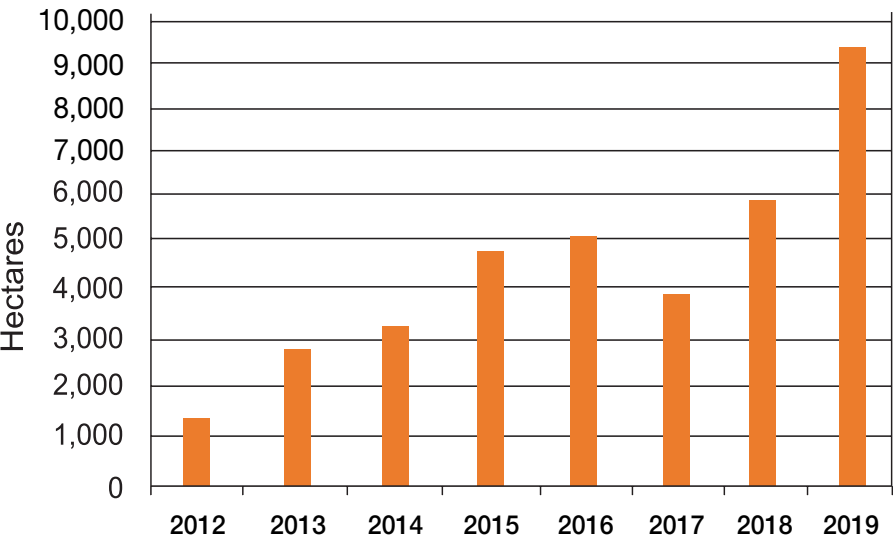
Until now, the rigid and inflexible structure of the UK’s woodland carbon market has also impeded its development. Landowners had no idea whether the prices they received for their woodland carbon reflected those paid by their counterparties, the companies. That has been rectified by recent entrants to

the woodland carbon market providing an alternative platform for landowners to sell their woodland carbon.

Improved transparency has combined with strong demand to sharply lift prices for woodland carbon. Prices for PIUs (Pending Issuance Units) now range between £10-£15 per unit vs £5-£10 in 2019. These have been supported by the results from the UK government’s Woodland Carbon Guarantee auction (in England) which established a floor price between £19 and £24 per WCU (Woodland Carbon Unit).

In 2019, the average hectare of woodland validated under the Woodland Carbon Code was expected to sequester 371 tonnes of carbon dioxide equivalent (CO2e) over its lifetime. At £10-15/t, eligible woodland owners can earn an additional £3,000-£5,000 per hectare. This is a market worth watching closely.

Fig. 4: Hectares of Woodland Validated under the Woodland Carbon Code



Natural Capital Accounting

By Ece Özdemiroğlu, eftec



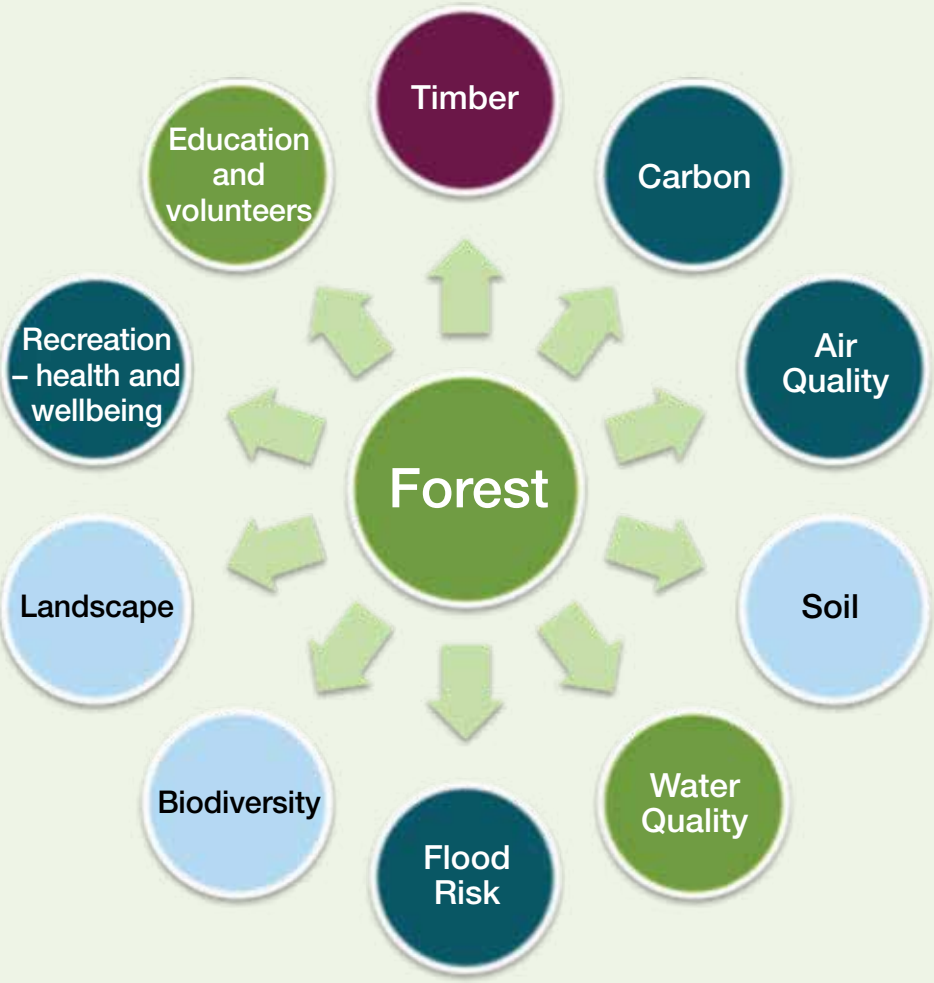
Ece Özdemiroğlu

Ece Özdemiroğlu FRSA is the Founding Director of eftec, the leading consultancy in the UK to apply environmental economics to public policy and business challenges. The aim of the firm is to show how it is possible and efficient to account for our impacts and dependencies on the environment when making policy, business and investment decisions.

Forests are assets: natural capital assets.

Natural capital is the *stock* of the elements of nature that provide *flows* of benefits to society, such as forests, fisheries, rivers, biodiversity, soils, minerals, the air, and oceans, as well as natural processes and functions. Natural capital assets include both the living and non-living aspects of ecosystems.

Most economic and policy decisions are made to maximise the flow of one or more benefits, most usually financial benefits. The natural capital approach encourages us to think about maintaining or enhancing the stock of assets so that they can continue providing benefits.



In general, timber is the only benefit that is reflected in financial accounts (in purple). Carbon, air quality, flood risk and recreation are the benefits that accrue to society (public goods) which appear in the natural capital accounts only (in dark blue). Biodiversity, soil quality and landscape contribute to many of the benefits that accrue to society and could partially be picked up in natural capital accounts, but it is not possible to separately quantify and value (in light blue), at least at this scale. Water quality and the social benefits of education and volunteering are possible to value in monetary terms but are very location and management specific so are not included in this case study.

Forests are an excellent example of how natural capital provides a multitude of benefits – not just for the owner but also for the rest of society. The graphic on the left shows a grouping of these potential benefits^a. (See end of article for footnotes).

Whether a forest delivers these potential benefits depends on the features of the forest (such as its location, size, age and species composition), how it is managed, what other land uses there are in the vicinity and the characteristics of the beneficiaries (i.e. stakeholders who benefit from the forest).

The challenge is making management and investment decisions that are financially, environmentally and socially sustainable, when:

- Only some of the benefits have traditional markets; and
- Others are public good benefits that accrue to the wider society but do not typically return to the forest owner as financial gain and are not accounted as part of the asset value.

Natural capital accounting has been developed to bring clarity, in particular to the second group of benefits (and costs) by combining biophysical and economic data to measure and value natural capital benefits; and showing how they change over time in response to management actions and other factors. The Natural Capital Balance Sheet and the Natural Capital Income Statement mimic the corresponding financial accounts to make comparability easier. These accounts distinguish between the value (financial/non-financial) to business and society, where the value to society (e.g. carbon sequestration) could be realised (e.g. through a voluntary carbon market). They also contribute to deciding how the natural capital assets should be maintained to, in turn, maintain the asset values. A British Standards Institution standard

on natural capital accounting has been developed and will be open to public consultation from December 2020 for two months.

Case study

Below we present the Natural Capital Balance Sheet for a hypothetical 200ha new forest replacing lowland marginal grazing (the ‘baseline scenario’). Two scenarios are explored: Scenario 1 – commercial conifer and Scenario 2 – commercial conifer + permissive access. As eftec are contributors to the BSI standard, we use the good practice suggested therein.

The account shows that, in this case study:

- Moving from the baseline to Scenario 1 or 2 improves the net asset value;
- Only 10-15% of the total value generated by this forest would appear in the financial accounts, i.e. the timber value; and
- There are many public good benefits – some of which cannot be quantified, and all estimates could be improved if more location specific information is used.

Some of the public goods could, at least partially, be converted to financial returns to the forest owner (depending on how the forest is managed):

- Spending more on improving access and facilities could encourage recreational spending;
- Not harvesting for timber, or harvesting later and replanting to increase carbon sequestration could help realise the carbon value as a financial return via, for example, a voluntary carbon credit market;

Natural Capital Balance Sheet for a hypothetical 200ha new forest – Present Value (£ million) over 60 years
Discount rate of 3.5% (1-30 years), declining to 2.5% (30-60 years)^b

Base year: 2020				The public goods in the baseline are understated by focusing on farm income alone. Only the timber benefit would appear in the financial accounts for the forest. Scenario 2 generates significant additional benefit at minimal additional cost.
Value & cost to business	Baseline* (marginal grazing, lowland, England)	Scenario 1 (80% conifer, 10% broadleaf, 10% open space)	Scenario 2 (Scenario 1 + permissive access)	
Value to society				
Asset Values				
Food ¹	4			
Timber ²		2	2	
Carbon sequestration ³		3	3	
Air quality regulation ⁴		3	3	
Flood risk reduction ⁵		6	6	
Recreation ⁶			6	
Gross Asset Value	4	14	20	
Liabilities				
Production costs ⁷	(5.0)	(1.0)	(1.1)	
Maintenance costs ⁸		(0.2)	(0.2)	
Gross Liabilities	(5.0)	(1.2)	(1.3)	
Net Asset Value	(1)	13	19	

^a The farming baseline in this case study is a simple one: covering the financial return only – excluding the wider benefits farming could provide to society – in this example this is likely to be small. Where links between maintenance costs and asset values are established, a positive net asset value will show the assets are maintained to sustain the benefits they provide. Where such links are not possible to establish, sustainability is inconclusive but relative benefit values are still useful inputs to decision making. Numbers in the table are rounded.

Natural Capital Accounting

- The forest’s ability to reduce flood risk could be paid for by a downstream business or town – but may reduce timber revenue if there are restrictions on harvest. There are many examples of similar payment schemes for undertaking certain land management actions upstream to provide water quality benefits downstream; and
- Carbon, air quality, flood risk reduction and free-access recreation (and biodiversity and water quality) are public goods that feature in the 25 Year Environment Plan and hence could receive public money under the future Environmental Land Management (ELM) Scheme.

In summary:

- This case study highlights that financial accounts present only a partial measure of the true value of forest investments.
- Natural capital accounts can be used to see which public goods can be provided under different forest management scenarios.
- Natural capital accounts can be used to test other alternative scenarios for forest management – what type of forest should be planted where and how it should be managed (including the implications for different forest products) to increase a given benefit(s).

Notes to the Natural Capital Balance Sheet:

1. **Food:** Five-year average (2013/14 – 2017/2018) for middle 50% of farms in lowland grazing livestock^c. Only the farming income is included. While most farms also receive agri-environment payments and incur costs to deliver environmental benefits, these are not included in this case study for simplicity and, at present, are small on a typical farm. Basic Payments are excluded as they will only last for seven of the next 60 years. Profits from diversification are excluded as they are usually related to buildings, residential or processing activities.
2. **Timber**^d: All trees planted in year 1; 48ha of conifer harvested in year 35 producing 380 tonne of timber per ha; another 48 ha of conifer harvested in year 40 producing 460 tonnes per hectare and the final 64 ha harvested in year 45 producing 540 tonnes per hectare. 2020 price of £80 per tonne. Broadleaf is not harvested during the 60 year accounting period. Income from forest grants are not included in this case study for simplicity, as they largely cover planting and early management costs.
3. **Carbon sequestration:** Net carbon sequestration rate for conifers (3.75 tCO₂e/ha/yr) and broadleaf (5.18 tCO₂e/ha/yr) are calculated in line with the timber harvest assumptions^e and valued at the central non-traded social price of carbon^f.

4. **Air pollutant removal:** PM2.5 removal by woodland cover valued at the avoided medical expenditure based on England average^g. This benefit will be greater if forests are closer to centres of population.
5. **Flood risk reduction:** Volume of water held by the trees, valued at the avoided cost of building a storage reservoir for the equivalent volume of water reflecting the harvest assumptions for timber^h. If the timber is not harvested, this benefit will be higher. The benefit is based on average figures for England and will not be at this level everywhere.
6. **Recreation:** No provision in baseline or Scenario 1; allowing permissive access in Scenario 2. Visitor numbers are based on average visits to woods and wooded pasture areas in England and the value is the welfare benefit received from such visitsⁱ. Values vary by location and the average does not include the health benefits of active recreational engagement in nature, which can be valued at avoided medical cost.
7. **Production costs:** Assumed to be: £946 per hectare^c for food; £3,500 per hectare initial planting^d; £20/tonne for timber production^d; £12.5/ha for maintenance for recreational access^d.
8. **Maintenance costs:** Replanting costs (£3,500 per hectare)^d are treated as natural capital maintenance costs for this exercise. Strictly, the costs should be linked to actions that maintain or enhance the quantity and quality of natural capital assets like the standing forest, biodiversity, soil, water and so on. Most clients that assess the implications of a natural capital account like this have the internal conversation on what is needed to maintain the assets to maintain the benefits provided so that subsequent accounts reflect changes in maintenance actions and costs but also the resulting improved benefit flows.

Time profiles of timber and carbon sequestration and air quality regulation based on tree growth are included in the accounts. However, external risks (like climate change) are not factored in.

The challenge is making management and investment decisions that are financially, environmentally and socially sustainable.

Asset values that are not included in the account

1. **Water quality** – is potentially a significant benefit but requires location and forest specific information and was not included in the account. The benefit could be valued in terms of avoided water treatment costs.
2. **Education and volunteering** – are social benefits provided by access to nature and could be significant especially if near centres of population. They could be valued at least in terms of expenditure incurred but would be much higher if educational benefits and mental and physical health benefits are included.

3. **Biodiversity (including soil quality)** – underpins all benefits either directly or indirectly. The added value of species diversity could also be reflected in financial returns – e.g. by more diverse forests being more resilient to risks of pests and diseases, which are set to increase with climate change. The richness of biodiversity in an area could be measured by Natural England’s Biodiversity Metric^j which is a combination of distinctiveness, condition, strategic location and connectivity. It is possible to compare different forest management scenarios on the basis of these factors.
4. **Landscape** – is assumed to be reflected, at least partially, in recreational values. If the forest is near residential areas, a property value uplift could also be considered.



This case study is hypothetical and created to demonstrate natural capital accounting. It does not constitute a comparison of different land uses and it is not investment advice. The baseline example is a specific hypothetical farm. It does not represent all lowland marginal grazing farms.

References

- a. (Based on) Defra’s **Enabling a Natural Capital Approach (ENCA) guidance and database**.
- b. **HM Treasury Green Book (2018)**. In addition to the discount rate reported in the table, the recommended discount rate for health impacts (starting at 1.5%) is used in the case study.
- c. **Defra Farm Business Survey (2013/14 – 2017/2018)**.
- d. All timber revenues and costs are based on assumptions and data in consultation with Fenning Welstead (John Clegg & Co).
- e. **UK Woodland Carbon Code**.
- f. **Non-traded price of carbon – BEIS (2018 – updated in 2020)**.
- g. Jones L, Vieno M, Morton D, Cryle P, Holland M, Carnell E, Nemitz E, Hall J, Beck R, Reis S, Pritchard N, Hayes F, Mills G, Koshy A, and I Dickie (2017) Developing estimates for the **valuation of air pollution removal** in ecosystem accounts, Final report for Office of National Statistics, July.
- h. Broadmeadow S, Thomas H, Nisbet H and G Valatin (2018) **Valuing flood regulation** services of existing forest cover to inform natural capital accounts, Forestry Research.
- i. **ORVAL (Outdoor Recreation Valuation Tool)**.
- j. **Natural England Biodiversity metric** (Ref: I Crosher, S Gold, M Heaven, M Heydon, L Moore, S Panks, S Scott, D Stone & N White. 2019. The Biodiversity Metric 2.0: auditing and accounting for biodiversity value. User guide (Beta Version, July 2019).

Timber Market Update

Long-term Market View Standing Timber



Harry Stevens
Timber Buying Director, Tilhill

As ever when we undertake these crystal ball gazing exercises we look back and try and divine from history what is going to happen and generally get it spectacularly wrong.

So, what have we learnt from the last ten to fifteen years?

We have seen a spectacular rise in stumpage values with standing sales making easily more than £20,000 per hectare in the right part of the world for a half decent stand of timber and, for best quality, considerably more. This is around a four-fold increase in nominal terms.



So, what are the factors that have contributed to this?

Over this period, we have seen considerable extra demand come into the small roundwood sector. The start of the period saw a weakening of demand as the established users of pulpwood for paper and carton board and the panel board sector (producing chipboard, MDF and OSB) had become established and, with the rise of recycling, had started to substitute virgin fibre with recycled. As more product was produced from the forests small roundwood often built up at roadside and could be difficult to sell.

The knight in shining armour that increased small roundwood demand was the introduction of fiscal incentives from government to support the development of the biomass sector. The period has seen a substantial increase in the biomass capacity at all scales, from residential all the way up to large-scale heat and power plants, and indeed much of the established panel board and paper sector took advantage of this and installed their own substantial capacity. It is likely that without this much of the established infrastructure would not have been financially viable.

Subsequently the paper sector has seen a contraction in the overall market and Europe has seen a considerable reduction in paper production with some plants being converted to produce carton board and others closing. It is likely that there will be further contraction in this sector.

Arguably biomass has reached its high-water mark now. There is very little additional capacity being installed in the UK and what is still to come on stream will be supplied by imported pellets. Many of these projects that looked viable were based on raw material costs that have subsequently moved upwards by almost 100%, several projects have been restructured, and there have even been a few failures. This is a reflection of the increase of small roundwood prices over the period by 100% to 200%.



If we have seen a small roundwood sector driven by increasing competition from new entrants, then similarly the log market has been driven, in part, by the same factors. Increasing biomass capacity has also driven competition for co-products with prices here also increasing by circa 100%, and at times, small roundwood prices and demand have risen so strongly that these users have ended up purchasing sawlogs. This has been particularly evident in the pallet and bar sector where smaller diameter logs have at times been only marginal in their value for processing due to low recovery of sawn timber and relatively slow throughput.

More latterly the sawn market has seen some wild upswings followed by deep troughs which have been uncomfortable to navigate and have resulted in considerable price movements.

Large scale outbreaks of the European spruce bark beetle in central Europe have become a factor over the last three years, flooding the European market with both small roundwood and sawlogs though increasingly these have become degraded by age.

Over the last fifteen years the sawn timber market in Britain has seen considerable expansion in capacity with several sawmills that are on par with some of the most sophisticated in Europe. This has also seen considerable investment in value added, including planing and grading capacity placing British offerings on a level playing field in terms of finish. In addition, being close to the market also gives local mills considerable logistical and service advantages.

So, what trends do we anticipate in the future?

Further large-scale investment in sawmilling in terms of new sites is unlikely though the existing infrastructure will continue to receive upgrades and replacements. New products, on a large scale, are not expected to be seen in the sawn market. However, we will see value continue to be augmented on an incremental scale.

The sawn market will continue to be dominated by imports which consequently largely set the market price. So sawn price will be dictated by what is happening with Baltic sawn wood and world demand. If your view is that the East and Far East will continue to demand sawn wood along with demand from north America then balances in international trade will be the deciding factor in terms of where sawn price and therefore sawlog prices are likely to be.

As mentioned earlier we have probably reached the high point of demand for small roundwood, unless we see further expansion in the panel board sector, which is a possibility. However, the likelihood is that we see a maturing of this market and demand levelling off and perhaps some price stability. Certainly, it is in the interest of markets who are likely to see increasing competition for some products.

On a positive note it is encouraging to see the results of planting improved stock in the forest with some of the older plantations well into thicket stage. The results are most impressive with improved form, vigour, and light branching habits. It is obvious that there will be a considerable increase in sawlog recovery and hence value to the grower, but I expect we are still ten years away from substantial production from these stands.

All in all, I expect we will continue to see a volatile market providing strong stumpage values for the grower over the medium-term.



On a positive note it is encouraging to see the results of planting improved stock in the forest.

Mixed Woodlands

By Bruce Richardson and Tanya Gato

In recent years we have seen an increase in interest for smaller woodlands and so have included this short section on the market for these properties.

Mixed woodlands do not lend themselves readily to analysis being generally heterogenous in terms of composition, varying in the proportions of broadleaves and conifers making up the canopy, and often with many age classes of tree present. Further diversity is added by the range of ownership objectives which shape management interventions. Most are in a lowland setting, and management ranges from benign neglect through to active management for wildlife or timber or both.

The market for these types of woodland is strongly influenced by the immediate setting and local demand rather than the national and international drivers in play for the large commercial forests.

Given the diversity mentioned above, our sample cannot claim to be fully representative of all small woodland sales but does provide some insights into how the market has developed in 2020.

In general terms we have seen fewer transactions in 2020, with the economic uncertainty and travel restrictions depressing the quantity of property coming to market, particularly from March through to the end of June. At the start of lockdown buyer confidence was initially impacted, but quickly rebounded, and demand for small woodlands has outstripped supply in the last quarter to September.

In this year's report we have a sample of 30 properties from across the UK, somewhat down from last year's 44

properties. These cover 1,853 gross acres (2019: 2,250 gross acres) of woodland with an average property size of 61.8 acres. 50% of the properties in the sample are from England, with the remainder equally shared between Scotland and Wales.

After several years of consistent market size (by area) we saw a drop off in England and Wales in 2020. Scotland saw an increase in the acreage transacted, mainly due to one larger young mixed broadleaf plantation.

The **total of sale prices** seen in 2020 was of **£6.68m** (2019: £9.25m), with properties selling around **6% over guide** price as an overall average.

- Average prices have held steady in **England** over the last four years, and now show **£5,330/acre** (2019: £5,191/acre.)

- **Wales** has seen a steady increase in average prices over the last four years, now showing **£3,910/acre** (2019: £3,587/acre).
- Average prices in **Scotland** show much more variability over the four years, and this year have been influenced by the larger property previously mentioned.

However, average prices paid mask an enormous range in values even within a region, with the differential between the lowest and highest value properties, per acre, being more than tenfold. Local factors such as ease of access, species composition, biodiversity quality and that elusive characteristic, 'attractiveness', are considerably more important to speak of than 'national averages'.

Given that the drivers for most purchasers are the ability to combine personal enjoyment with financial

Fig 5: Mixed Woodlands: Gross acres sold over 2017 to 2020

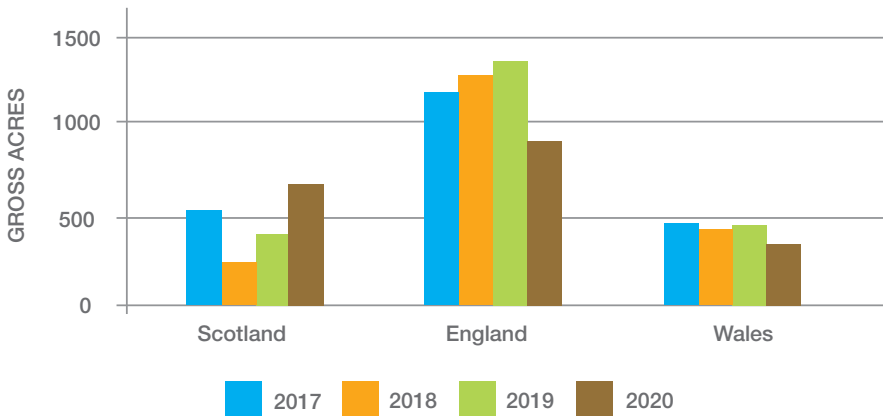
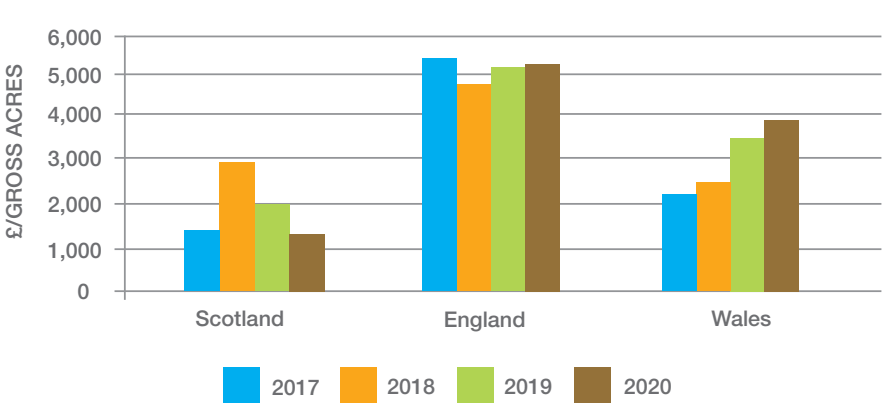


Fig 6: Average sale price per gross acre



considerations such as family tax planning, woodlands which offer privacy and seclusion for weekend enjoyment continue to be highly sought after. Sporting is a key part of the picture as the purchaser may be interested in exercising the sporting but, equally as often, will want to ensure that his/her enjoyment is not disturbed by others shooting over the ground. Self-contained, attractive small woods where the sporting rights are owned continue to top the charts in terms of sale price achieved per acre and demand for these properties remains high.

Not surprisingly, eight of the top ten prices paid per acre were in England with the south west and the Marches predominating.



Price Average per Acre

England: **£5,330**
Wales: **£3,910**
Scotland: **£1,500**





Market Background

This research is a snapshot of the commercial forestry market in the year to September 2020. Woods sold in previous years are therefore different from those analysed here, therefore this is not a like-for-like comparison. While

these results show useful trends, readers should not base investment decisions on these comparisons alone and should always seek professional advice before committing to an investment.

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