

# Trees for farms in Northern Ireland

Woodland Trust Report





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# Foreword

by Harry Sinclair

Recent years have seen greater focus on the need to increase food production against a background of a growing world population and concerns over food security. At the same time there has been recognition of the critical role of farming in providing 'ecosystem services' – plentiful and clean water, flood mitigation and biodiversity, healthy soils and pollinating insects as well as the food we need. The trick is to find ways to increase production whilst maintaining or improving the many other things which come from a well farmed countryside.

In Northern Ireland we are blessed with a beautiful and productive countryside, but we have more than our fair share of weather. Indeed recent years have seen more extremes of weather, which puts pressures on crops and livestock and makes the job of farming all the more challenging.

While trees and farming can often be seen as contradictory and competing land uses, thoughtful use of trees on the farm can have real benefits in supporting good husbandry, combating some of the extremes of weather and providing energy and alternative income for the farm.

There are good examples of where farmers have taken advantage of the grants available and have planted trees, making use of

unproductive corners or strengthening hedges and shelterbelts or planting small woodland blocks. These are now reaping real benefits providing shelter and shade to livestock and crops or around farm buildings, and producing timber for wood fuel or for sale.

But the benefits go much wider than the farm. Increasing trees on the farm helps wildlife, captures carbon, helps improve water quality and adds to the beauty of the countryside.

The pressures on farming today require a thoughtful response and a range of different measures to meet the challenges to increase production while maintaining and improving the countryside within which we live and work. Trees are not a panacea, but they do provide one of the ways in which stewardship of the land can benefit farming and society.

As farmers we know the importance of careful long term stewardship. There is a Chinese proverb, 'the best time to plant a tree was 20 years ago – the next best time is now'. I would urge farmers across Northern Ireland to consider the opportunities to plant trees now, which will benefit the farm and our beautiful countryside for future generations to come.



**Harry Sinclair**  
President of the Ulster  
Farmers' Union

Trees in the farmscape,  
Newtownhamilton, County Armagh

Alan Hopps







# Trees for farms in Northern Ireland

Farming is an important part of the Northern Ireland economy, with around 27,000 farms in Northern Ireland, covering around 1 million hectares of land. Grassland dominates agricultural systems, with dairy, beef and sheep production accounting for

the bulk of Northern Ireland's farming activity.

With just 7 per cent woodland cover, Northern Ireland is below the UK average of 13 per cent and the European average of 44 per cent.

## Why plant trees?

For centuries native trees and woods have provided services and benefits to farmers and society. These include shelter and shade, wood fuel and timber, alongside managing and maintaining high quality water supplies. Trees also help regulate flood flows, provide habitat for wildlife and game, and create an attractive landscape for farm tourism. Creating and maintaining a landscape rich in native trees and woods is vital to help farming in Northern Ireland meet current challenges; in particular adapting to the impacts of a changing climate whilst supporting productive use of the land.

Throughout Northern Ireland winter rainfall is projected to increase, with greater frequency of severe rainstorms and gales. Lower summer rainfall is expected with higher temperatures.<sup>1</sup> The change in weather patterns, together with more extreme

weather events, means the countryside must be well adapted to support productive farming and protect the environment. Trees can help manage these risks, reduce costs and diversify sources of income.

Trees and woods have the advantage of being able to deliver many benefits at the same time. For instance, trees along watercourses can help improve water quality while supporting pollinating insects and providing a source of wood fuel.

Selecting the right site for planting is important. Often those areas which seem least suited to farming and might provide opportunities for tree planting are important as open habitats in their own right. The Woodland Trust can provide support on site selection, planting and grant support or direct you to other sources of advice.

*Trees and woods have the advantage of being able to deliver many benefits at the same time.*

## CASE STUDY: Alec Stevenson, dairy farm in the north west of County Tyrone



Alec Stevenson

*"This is the townland of Magheragar, which means 'the flat plain' and it's aptly named because there's nothing much between here and the distant Donegal Mountains," Alec explains.*

*"It may look pretty in the summer sunshine but believe me it can get very windswept and exposed in the autumn and winter. The prevailing winds which sweep in off the Atlantic seaboard have little to stop them before they reach us.*

*I've always had an appreciation of trees and an interest in the birdlife that goes with them, which is why, over 15 years ago, I grew this small plantation on less good land, partly also as a shelterbelt."*

Further plantings were undertaken and are now about to be thinned, selling the timber and leaving space for the remaining trees to grow.

*"It's great because it's not taking up good grazing land at the top end of the field and it's providing extremely valuable shelter and protection from that crippling west wind, for my dairy cows to graze."*

Each of the shelterbelts is created in blocks, but they're also designed to act as

a continuous windbreak for the farm on the lower side.

*"There are upwards of 70, mostly Holstein, cows grazing in that field in shelter and contentment, with the added advantage of a good high-clipped hedge. It's hard to put an actual financial value on field shelter for cows, but sufficient to say that for dairy farming on this type of exposed land with boggy corners and rough field edges, shelter is important."*

Coming to a further small plantation Alec explains;

*"Part of the reason I planted these oaks 12 years ago was to add to the existing mature timber and the plantation put in by my neighbouring farmer who has planted even more than me, so this is now a reasonable area of hardwood forest and will grow into a mature forest one day.*

*This is heavy ground so not much use for dairy farming or anything else and my neighbour has planted up to five acres, so between us we're making good use of land that is almost shaped and designed by nature to be planted. We may own the land we farm but we are only custodians of it, so we have to think of future generations, what they will inherit and the legacy we leave behind."*

Hedges and shelterbelts protect Alec's dairy cattle from windchill and heat stress.

WTPL





Geograph/Andy F

Planting trees on field boundaries, in hedgerows and in fields provides shelter for animals in hot weather, reducing heat stress and improving animal welfare.

## Shade

Rising summer temperatures will increase heat stress to livestock.<sup>2</sup> Increased heat stress can affect milk yield and herd fertility of dairy animals, and affect the feed efficiency and general welfare of other livestock. Planting native trees, or allowing them to develop in hedgerows, provides important shade for livestock and reduces air temperature.

### Shelter

Well designed shelter around the farm can reduce heating costs by 10-40 per cent and lower farm CO<sub>2</sub> emissions. It can also capture some of the ammonia emissions from livestock housing.<sup>3</sup>

Shelterbelts of trees can have a positive impact on pasture growth by increasing

water infiltration and reducing water lost from plants. Shelter is an important factor in reducing exposure and improving survival in lambs. Shelter also increases the feed efficiency of livestock through reduction in the chill factor.

More storms create greater need for crop shelter to reduce damage, water loss and to encourage crop pollination. Crop yields can increase as a result of use of windbreaks.<sup>4</sup>

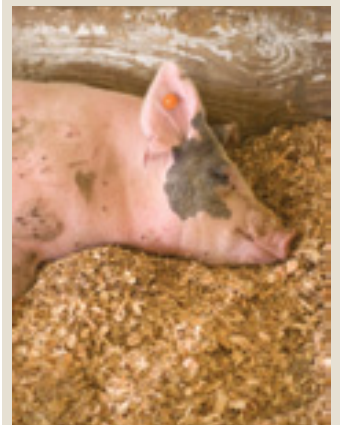
Native deciduous trees are ideal for windbreaks, with enough porosity to slow the wind without creating turbulence. Windbreaks increase the abundance of pollinating insects providing shelter and a food source, particularly when combined with hedgerows.

*Shelter increases the feed efficiency of livestock through reduction in the chill factor.*

## Mitigating Greenhouse Gas emissions

Agriculture is responsible for around 23 per cent of Northern Ireland's Greenhouse Gas (GHG) emissions, with methane and nitrous oxide being the main contributors. This compares to 9 per cent for the UK and reflects the importance of agriculture and particularly livestock production in Northern Ireland (Northern Ireland Greenhouse Gas Emissions Reduction Action Plan, 2011).

Developments in the diet of ruminants, together with better handling of manures and slurry can contribute to reduction in levels of GHG, as can the timely and measured application of fertilisers and manures. The planting of trees on farms, for whatever purpose, will have some benefit in capturing atmospheric carbon and offsetting these emissions.



istock



*Around 3 hectares of woodland can heat the average farmhouse.*

Wood harvested from shelterbelts or woodland can be chipped for animal bedding as a substitute for straw. Trials have found that woodchips used over three years cost £8 per cow (housed for 16 weeks

a year), against straw at £23 per head.<sup>5</sup> The woodchip also makes an excellent soil improver and reduces the release of volatile nitrogen compounds in to the air, when compared to straw.<sup>6</sup>

## Wood fuel

Wood fuel, as a renewable energy source, displaces fossil fuels and reduces the carbon footprint of the farm, as well as securing part of the farm's energy needs at a time when energy prices are increasing. Wood fuel can be grown in areas which are difficult to farm or can be harvested from trees planted for other purposes, for instance providing shelter. Wood fuel can also be sold off the farm to create an additional source of income.

Around 3 hectares of woodland can heat the average farmhouse. Larger areas of woodland could feed a boiler to heat other farm buildings. That woodland does not need to be in one block, but it does need to be accessible. The use of native tree species has the benefit of producing good quality firewood and supporting biodiversity, important in creating a diverse and resilient farming system.

## Soil erosion and pollution control

Buffer strips of trees along watercourses and contour planting of trees and hedges increases water infiltration into the soil helping boost pasture growth. Tree shelterbelts can also help prevent sedimentation and run-off of manure and fertiliser following heavy rainfall.<sup>7</sup> When

combined with other measures this helps improve water quality and can reduce the risk of flooding.

Trees provide dappled shade to watercourses and lower water temperatures and can be associated with improved oxygen levels to the benefit of fish and other wildlife.

Banks of the River Faughan, County Londonderry.

WTPL/Rosanna Ballentine





## CASE STUDY: Alan Hunter, mixed farm in County Londonderry

Alan Hunter farms 90 hectares of mostly good quality land at Longfield Farm in County Londonderry. The farm business is a mixture of cereals, potatoes, beef, self-catering, forest and firewood enterprises. They grow winter wheat, spring barley and maize for a bio-digester contract.

On part of the farm, clay was once dug for brickmaking and consequently the land lowered, so it ended up as relatively poor, dampish subsoil clay which has only ever been used for rough grazing.

*"Nineteen years ago the decision was made to plant poplar trees on this non arable two and a half hectare section of the farm"* Alan explains.

*"Poplar is a fast growing, tall, straight tree and at the time it attracted the Forestry Department's woodland planting grant. They've since been thinned and are now mature enough to utilise as part of our relatively new firewood kindling enterprise".* Looking around him, Alan pointed out that there was probably in the region of £10,000-£15,000 worth of kindling firewood still standing.

*Nine years ago, in a separate block adjoining the poplars, we planted a mixture of hardwoods under the Countryside Management Scheme, namely oak, ash, beech and rowan, with the thinning intended to help heat our home.*

*In my experience I've found that hedgerow trees don't interfere with the combine harvester, which is sometimes a concern expressed by arable farmers. All the grants we've received have made the planting of trees much more economical to consider."*

Walking out of the poplar plantation and crossing a farm road, Alan indicated his willow planting, which stretched in a wide band along the laneway as far as

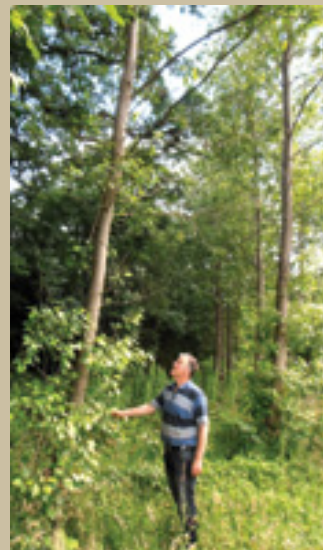
the farmyard, with crops of spring barley at either end.

*"We view our willow production, grant-assisted under Short Rotation funding, as a crop. It's a crop which thrives best on wet corners of farmland and damp ground and should best be considered in that way.*

*We began by thinking of a large-scale energy market outlet, but this year we've decided to harvest the whole willow stem to dry naturally, with the purpose of turning the air-dried wood into valuable kindling."*

At the farm wrapped bundles of firewood kindling are ready for sale to forecourts, shops and supermarkets.

*"All our woodland plantations are arranged around the farmhouse and yard. The poplar has helped make it economical to employ a man full time with the kindling operation. We view our extremely varied woodland as not only a benefit to wildlife and the environment in general, but also a profitable addition to the farm".*



Alan Hunter

Alan Hunter and his firewood kindling enterprise.

WTPL



## CASE STUDY: Crosby Cleland, agroforestry plantation in County Down



Crosby Cleland

A flock of Lleyn, Highlander and Primera sheep streams through a gate into Crosby Cleland's two hectares of agroforestry plantation to graze the lush grass underneath a canopy of ash and sycamore trees. The trees clothe a slope of uneven pastureland in County Down, near the town of Saintfield.

*"I planted this area of land in 1997 with help from a DARD Agroforestry grant, which at the time covered the cost of establishment," explains Crosby.*

*"I now run 750 ewes on a total of 76 hectares of good grassland, but this was the one spot you couldn't put to the plough, it was otherwise non-productive."*

A recent Ulster Grassland Society visit to Crosby's farm viewed it as an example of top class grassland management. Crosby was also Farmers Weekly 'UK Sheep Farmer of the Year' in 2008. So he knows about the value of good grassland and just how best to grow it for the benefit of sheep.

*"Thanks to advice and encouragement from DARD's Agroforestry expert, I planted 750 trees at five metres apart; the majority being ash. The leaf canopy is now meeting above the grass*

*swards, but shading doesn't appear to be having any adverse effect on growth and the shelter effect won't do the sheep any harm either.*

*I reckoned on future timber prospects for furniture-making and at the very worst, a market for firewood.*

*I've been planting hedges and hedgerow trees on my farm under the Countryside Management Scheme for the past seven years and now I'm planting for other farmers throughout the countryside. Each year I plant up to 9,000-10,000 new hedgerow plants for farmers at a planting space of seven to the metre.*

*I'm convinced that the presence of good thick hawthorn hedges and hardwood hedgerow trees, have not only been terrific shelterbelts for sheep, but a wonderful magnet for insects and of course, birdlife.*

*There is also a good demand for trees in awkward and unproductive corners. I would encourage farmers to look at their least profitable land areas with a view to creating small plantations of trees.*

*I must say that my own experience of agroforestry has not only given me great satisfaction, turning otherwise less productive land into profitable grazing, but it's also given me a real appreciation of the beauty of trees and their importance to our environment."*



Contrary to popular belief, tree shade has not had an adverse effect on good grassland production at Crosby Cleland's farm.

WTPL





Geograph/Steel

Pheasants are birds of the woodland edge, rarely found more than 50 metres into the wood.

## Improving sporting opportunities

Well sited native woodland can increase the potential of game shooting on farms, particularly pheasants. Native woodland with well designed rides provides shelter

and a valuable food source for pheasants. Development of the woodland edge is particularly important and can be achieved by expanding existing woodland.<sup>8</sup>

## Timber

Native woodland can produce timber for use on the farm or to diversify farm income. The first harvest of timber from new woodland is likely to be at around 15-20 years. Small diameter timber of species such as oak and sweet chestnut can be used for fencing or sold into bulk markets, whilst larger timber might be used for farm buildings or for sale to sawmills. Where there is a strong local demand, specialist uses such as birch for horse jumps, and willow for basket making, can also generate income.



WTP/LRory Francis

Timber can provide an additional source of income.

*‘...my own experience of agroforestry has not only given me great satisfaction, turning otherwise less productive land into profitable grazing, but it’s also given me a real appreciation of the beauty of trees.’*







## Orchards and other fruit trees

There has been a revival in interest in recent years in orchards. Orchards can add to the diversity of farm income and create opportunities for value added products such as apple juice and cider, and provide many

of the wildlife benefits of woodland.

Careful site selection and choice of cultivars, plus advice on aftercare and management are necessary for successful fruit production.

## Wildlife conservation

Native woodland creation helps wildlife, particularly where it buffers and extends ancient woodland.

Newly created woodland has a rapid increase in the abundance of insects between the establishing trees. This attracts birds, particularly species of open country such as skylarks and linnets. The abundance of insects also attracts foraging bats.

While many of the specialist plants associated with ancient woodland will not colonise for many years, some other woodland plants, such as lords-and-ladies, herb-Robert, wood avens and honeysuckle are faster to colonise.

Targeted woodland creation may also help the movement of species around the landscape as climate change alters their ranges.



WTPL/Robert Bennett

## Protecting open habitats

Tree planting and woodland creation provides many benefits. However it is important not to plant trees where there are valuable open habitats such as species rich grassland, including wax cap grasslands, and heather moorland.

Wetlands of any description should not be drained and planted. If you are in any doubt as to the suitability of land for planting please contact us for advice on where to get further help and information (see page 15).

*Wetlands of any description should not be drained and planted.*

## References

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- <sup>8</sup> Woodland Trust (2011) *Woodland creation and management for pheasants – a best practice guide*. Available at: <http://www.woodlandtrust.org.uk/en/planting-woodland/why-plant-trees/economic-benefits/Pages/game-cover.aspx> [accessed 1st March 2011]

## Acknowledgements

This report was written by Mike Townsend of the Woodland Trust using material from a review of evidence for the Woodland Trust undertaken by Harper Adams University College. The case studies were produced by Ian Harvey.



# Sources of funding and advice

The Woodland Trust can help you access grants available to help farmers plant trees. We also provide expert advice on other funding sources.

## Forest Service planting grants

Forest Service provides grant aid to help farmers create new woodland. There are two main schemes:

### **The Woodland Grant Scheme (WGS):**

A grant for planting of woodland. The minimum application is for 0.2 hectares (0.5 acre) and a minimum width of 20 metres. To be eligible, you must have a Farm Business Identification Number.

### **The Farm Woodland Premium Scheme (FWPS):**

In addition to WGS, farmers can receive annual payments through the FWPS, as compensation for income foregone. For broadleaved woodland, the payments can last for up to 15 years. The minimum application is for one hectare (2.47 acres).

## Other sources of funding – MOREwoods in Northern Ireland

If a Forest Service grant isn't right for you, our MOREwoods scheme may help. Designed to be simple and bureaucracy free, MOREwoods helps make planting new woodland affordable and easy. Aimed at people who want to plant a minimum of one hectare (2.47 acres), we provide all the expert help and advice you need to get your planting underway - including advice on species selection and design.

## Contact us

For further information and advice.

### **Telephone**

0845 293 5689

### **Email**

[woodlandcreation@woodlandtrust.org.uk](mailto:woodlandcreation@woodlandtrust.org.uk)

### **Visit**

[woodlandtrust.org.uk/farming](http://woodlandtrust.org.uk/farming)

# Planting trees can benefit your farm

The Woodland Trust believes that creating and maintaining a landscape rich in trees and woods is vital to meet the challenges of climate change, while maximising productive use of the land and supporting biodiversity.

Planting trees and farming need not be viewed as competing land uses but complementary ones, working with the grain of nature to best effect.

Trees planted in the right location provide shelter and shade for animals and crops; wind damage to crops is reduced and the efficiency of water irrigation is improved. Trees can also help to reduce surface water and nutrient run-off into rivers as well as providing an alternative and sustainable source of on-farm energy and timber.

## Help and advice

If you would like free advice or guidance on farm planting schemes and grants, please contact our experienced woodland creation team on:

0845 293 5689

[woodlandcreation@woodlandtrust.org.uk](mailto:woodlandcreation@woodlandtrust.org.uk)

[woodlandtrust.org.uk/farming](http://woodlandtrust.org.uk/farming)

The Woodland Trust, 1 Dufferin Court, Dufferin Avenue, Bangor, BT20 3BX

## About the Woodland Trust

The Woodland Trust is the UK's leading woodland conservation charity, with 40 years' experience creating, managing and restoring woods. We care for more than 1,000 woods on our own estate and have helped create more than 1,000 new woods for people and wildlife.

Find out more at

[woodlandtrust.org.uk](http://woodlandtrust.org.uk)

*The best time to plant trees was 20 years ago. The next best time is now.*



**The Woodland Trust, Kempton Way, Grantham, Lincolnshire NG31 6LL.**

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