

Using trees and hedges to protect natural resources

Integrating trees into farming systems could improve productivity, save costs, increase resilience and offer a wide range of benefits to the environment.

Extreme weather presents numerous challenges to farmers.

This guide provides advice on how farmland trees and hedges protect resources, such as healthy soils and clean water. They provide habitats for wildlife including pollinators and beneficial insects and supplies woodfuel. Here's how to make the most out of your land management:

Protect your resources

1. Soil management and erosion

Soil erosion can threaten the long-term productivity of agricultural land. Tree belts and hedges act as natural barriers reducing both wind and water erosion. Deeper rooting trees improve soil stability while additional organic matter from leaf litter and root debris can improve soil structure.

2. Drought and water conservation

Field edge or in-field tree belts modify the crop microclimate by reducing both wind speed and water loss. Retention of moisture will help reduce the impact of drought on crop performance. Reductions in wind speed also increases soil and air temperatures, and protects against soil erosion.

3. Water quality

Planting trees alongside watercourses reduces diffuse water pollution by reducing and filtering surface runoff and reducing bank erosion. Tree belts and hedges can prevent livestock entering watercourses, reducing point source pollution and movement of faecal indicator organisms such as E.coli. They will also help reduce spray drift. Trees along banksides provide dappled shade helping to lower water temperatures which benefits fish and other wildlife.



Windbreak geograph

4. Slowing the flood

Trees intercept rainfall and increase infiltration rates. Used alongside other natural flood management and soil management techniques, trees play an important role in catchment-wide flood risk reduction.

What can you do?

- Assess current tree cover and identify resource issues on the whole farm.
- Consult a woodland or farm adviser to help identify how both existing and new trees and hedgerows could protect your farm's assets.

Trees and hedges as windbreaks

The ideal windbreak or tree belt is a uniform, narrow belt of trees and shrubs at right angles to the prevailing wind. Aim for a minimum length of 25 times the height of the tallest trees to prevent wind being forced round the edges. Porosity is important and the most effective shelterbelts will incorporate open areas between trees, branches and leaves. Generally, an improvement in the microclimate from the shelter will extend 20 times the height of the trees into the field behind. Plant a mix of quick-growing native trees and shrubs in four rows – leaving 1.5m between each row and between 1-2m spacing within the rows.



Soil erosion



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Trees to protect water quality

If it can be integrated into your farming operation, plant trees along contours in the middle of a sloping field, or beside watercourses at the bottom of a slope. The trees will act as a buffer by increasing water infiltration, reducing water run-off and intercepting nutrients and sediments. The width of the treebelt, slope, gradient, amount of vegetation and leaf litter as well as soil type all influence the time taken for water to pass through the trees. The longer the tree belt holds water, the better it will function.

New planting

When designing a planting scheme consider land tenure, archaeology, intended use, likely wind speed and direction, soil type, topography and existing farm layout. Also consider how it will fit with current and future farming operations, as well as accessing for weeding and maintenance. Choosing native tree species will ensure trees are well suited to the site and will benefit wildlife. Control weeds in newly planted trees for the first few years and protect against voles, rabbits, hares and deer.

Hear from farmers who've seen the results for themselves:

Please search for 'How shelterbelts can protect soil' at Haywood Oaks Farm on the Woodland Trust's YouTube channel to find this video

Find out how hedgerows are supporting soil and grass growth on a Cumbrian sheep farm. Search for 'mob grazing for livestock' on our YouTube channel.

How the Woodland Trust can help:

- Work with you to create a bespoke planting scheme suited to your farm and needs.
- Provide you with trees and protection – and we'll cover at least 60% of the costs.
- Assign a dedicated adviser who will support your planting every step of the way.
- Help you look for other grants and funding, including stewardship schemes.
- If your plans include innovative agroforestry you may qualify for a free tree planting assessment for your whole farm.

For more information about how we can help you to plant trees on your farm, call **0330 333 5303** or visit woodlandtrust.org.uk

The CFE website demonstrates best practice management of the farmed environment.

See www.cfeonline.org.uk/campaign-themes/trees



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