

The benefits of woodland creation

Woods and Water



How woodland creation can help

Planting the right tree in the right place can help reduce the impacts of storm and flood water and alleviate the impact of drought, improve water quality, reduce soil erosion, and help keep rivers cool. Financial support and expert advice are also available to help realise the far-reaching benefits woodland can have for you, your land, the environment and future generations.

Natural flood management

A well-planned and well positioned woodland designed to comply with the UK Forestry Standard, can help to slow the flow of water and reduce flood peaks by up to 65%. Rough vegetation helps to slow the flow of water during flood events and the volume of run-off can be reduced as trees improve rainwater infiltration (that's water on the ground surface that enters the soil). Infiltration is 60 times higher under woodland compared to grass – this is because woodland soils are more open and less compact, enabling the soil to soak up and store rainwater like a sponge. Under-planting of shrubs can also increase infiltration rates across existing woodland and in a mature woodland provides continued roughness to slow the flow of water. Having woodland in a catchment increases the interception and evaporation of rainfall – further contributing towards effective natural flood management.

Up to £1,000/ha is available to farmers and landowners through the [England Woodland Creation Offer](#) – for creating woodland that reduces flood risk.

Woodlands can only deliver benefits if they contain a variety of tree species and are actively managed – to keep them healthy and resilient. This is especially key during establishment and will involve weeding, ensuring tree protection is in good working order and replacing any tree losses.

There are a variety of planting options that can help manage floods on your land and minimise their impact on downstream communities, these include:

- **Catchment woodlands**
Planting catchment woodlands can intercept, slow, store and filter water to reduce flood peaks and frequency.
- **Cross-slope woodlands**
Cross-slope planting helps to intercept the flow of water, reducing rapid run-off and encouraging greater infiltration and storage of water in the soil.
- **Floodplain woodlands**
Planting woodlands in floodplains can increase the capacity to store and slow floodwaters, ultimately reducing flood peaks.
- **Riparian planting**
Planting trees either side of a watercourse can help to slow flood flows and reduce sediment and bankside erosion.



Woodland to improve water quality

Woodland can act as natural buffers between watercourses and neighbouring land – helping to reduce up to 80% of pollutants draining down from upslope agricultural activities. Planting woodland between the field edge and a river can also decrease sediment run-off by 90-100%, nutrient losses by 20-80%, and reduce pesticide loss in run-off by 60-100%, helping to mitigate water contamination in nearby watercourses. It is essential to disconnect any existing field drainage that

runs into and under a new woodland, otherwise this will prevent the woodland from functioning as a buffer.

Tree roots can also help to stabilise riverbanks and protect them from erosion, thus reducing sediment settling in waterways – further improving overall water quality.

Up to £500/ha is available to farmers and landowners through the [England Woodland Creation Offer](#) – for creating woodland that improves water quality.



Riparian planting to improve water quality

As well as helping to naturally manage floods, riparian woodland can act as effective buffer zones, by reducing, and in most cases, preventing pollutants from neighbouring fields from entering nearby watercourses. Riparian planting also provides dappled shade, keeping rivers cool which in turn maintains suitable aquatic habitats – leaves, twigs, and branches that fall into rivers and streams are beneficial for plants, invertebrates, and fish.

The [England Woodland Creation Offer](#) pays up to £6,300/ha for woodland creation that delivers riparian buffers, premium nature recovery benefits and improves water quality – supporting riparian planting on land as small as 10 metres wide.

Considerations for riparian planting:

- consider the width, slope, gradient, existing vegetation, and soil type of your riparian planting area as these important elements will impact the time it takes for water to pass through your new woodland – the longer the water is held, the more effective your riparian woodland is at filtering water.
- select a diverse range of tree species to ensure a resilient woodland that can cope with wetter conditions and mitigate significant tree loss if one species is impacted by disease – we recommend that you source trees from biosecure stock.

- adequate, ongoing woodland management ensures trees won't grow too large and risk overturning – causing soil erosion.
- try to make sure that 50% of a waterway's surface area is shaded by tree canopy, providing shade to benefit aquatic wildlife and plant life.

Why act now?

Watercourses are under increasing pressure from population growth, industry output, and intensive land use – contributing to an increase in pollutants entering our watercourses. The effects of climate change, responsible for frequent and extreme flooding events followed by periods of drought, are only adding to these pressures – impacting land productivity and downstream communities. Water temperatures are also on the rise, especially during hotter summer months, causing fish and other aquatic wildlife to suffer.



Shelterbelts to improve water quality

Planting blocks of woodland on your land can reduce spray drift by up to 90%, and capture ammonia released from livestock units and pesticide run-off before they reach watercourses. Appropriate planting schemes can increase infiltration rates across land prone to rainwater run-off, reducing sediment that can otherwise contaminate downslope waterways.

As well as improving water quality, shelterbelts provide suitable shelter for livestock, crops, and help keep topsoil in the field. They help to lower windspeed and provide shelter that can otherwise impact your crops, livestock and eventually, your bottom line. Shelterbelt woodland can preserve water needed for crops by offering sufficient wind-shade to reduce water evaporation during periods of drought, possibly leading to better and more sustainable yields.

The [England Woodland Creation Offer](#) provides financial support for planting shelterbelts down to 10 metres in width.

Considerations for shelterbelt woodland:

- as a shelterbelt woodland matures, the branches will begin to touch each other and create a closed canopy. In some circumstances, it's good to include conifer species in your woodland mix to continue to provide shelter during the winter and to help 'scrub' pollutants from the air. Your woodland should be located as close as possible to the source of pollution and downwind from it.
- if your objective is to capture pesticides contained in spray drift, shelterbelts should be at least two metres higher than your crops, and span the entire length of the field to help protect a nearby watercourse.



The wider benefits of woodland creation

A carefully planned and managed woodland can create an attractive landscape feature, offer shade for crops and livestock, prevent nutrient loss and soil erosion, and deliver opportunities to diversify and create reliable income streams from timber, woodfuel, carbon and recreation.

Discover the far-reaching benefits of woodland creation in our [brochure](#).

3 steps towards woodland creation



1

Consider opportunities for woodland creation on your land



2

Have clear objectives for your woodland



3

Speak to your local Woodland Creation Team or one of our partners

[Read the latest guidance on woodland creation and information on grants and available support](#)

[Find more in-depth guidance on planning a new woodland in England](#)

Forestry Commission grants

Woodland Creation Planning Grant (WCPG):

Contributes towards the costs of designing your new woodland in line with the UK Forestry Standard, and offers you access to expert advice from your local Forestry Commission Woodland Creation Team to assist in the production of your plan.

England Woodland Creation Offer (EWCO):

Covers standard capital costs and annual maintenance payments as your woodland establishes, with additional stackable payments when delivering wider benefits to society, nature recovery, and the environment. Applicants can also receive a contribution towards the costs of access infrastructure.

Useful resources

Natural Flood Management Measures

A practical guide for farmers

3D Buffer Strips

Designed to deliver more for the environment

Tree protection The use of tree shelters and guards

A Guide to Planning New Woodland in England

Keeping Rivers Cool A guidance manual

Designing and managing forests and woodlands to reduce flood risk

Creating and managing riparian woodland

Partner grants

England's Community Forests Trees for Climate Fund

Expert support and up to 100% flexible and bespoke grant funding for up to 15 years. Open to all landowners within any Community Forest area.

The National Forest

Generous grants and support for tree planting, forest creation and habitat management in the Midlands, available to landowners within the 200 square miles of the National Forest. Grant schemes offer funding to cover design, planning and up to 100% of implementation costs.

Northern Forest

A partnership between the Woodland Trust, four Community Forests – Mersey Forest, Manchester City of Trees, White Rose Forest, Humber Forest – and the Community Forest Trust, with funding from the government's Nature for Climate Fund. You can secure up to 100% of the capital costs of woodland design, planning and creation and a generous maintenance budget.

Woodland Trust

Offers three national schemes: MOREwoods and MOREhedges covering up to 75% of the costs for a range of woodland and hedgerow creation, starting from 1.25 acres or 100 metres of new hedging, and Trees for Your Farm, funding up to 100% of costs for bespoke agroforestry schemes.

Woodlands for Water

You can also access support via the Woodlands for Water partnership that operates in certain catchment areas.

Discover farmers and landowners already benefitting from [woodland creation](#)



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[forestrycommission.blog.gov.uk](#)

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References

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Keeping Rivers Cool partnership, 2016. Keeping Rivers Cool: A Guidance Manual – Creating riparian shade for climate change adaptation [manual].

The Rivers Trust, 2021. State of Our Rivers Report [report].

Woodland Trust. Trees for water – Factsheet 1 Why Trees? The benefits of trees for water management, Factsheet 2 Creating riparian woodland, Factsheet 3 Planting trees and creating woodland in the wider farmed landscape [leaflet].

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