Water Works

Eden Rivers Trust

Healthy Hedgerows: Benefits, planting and maintenance

Hedgerows are one of this country's most valuable and widespread habitats and are an intrinsic part of our landscape.

They provide shelter for livestock in our harsh and changeable Cumbrian climate, connect habitats together for our much-loved wildlife, and manage soils and water - helping to protect our farms and communities.

Hedgerows were created to divide fields, shelter livestock and define ownership boundaries, but to Eden Rivers Trust (ERT) and our farmers and landowners, they are so much more than that.

When managed correctly, hedgerows have many functions and benefits for the farm which can positively impact its economic and environmental performance.

This leaflet will introduce you to the widespread benefits gained from a healthy hedge and how to plant and maintain your hedgerow to maximise those benefits. It also contains a seasonal guide to the wildlife supported by hedgerows, so you can follow the wildlife calendar throughout the year!

"Hedges may support up to 80 per cent of our woodland birds, 50 per cent of our mammals and 30 per cent of our butterflies." - RSPB

Benefits

Hedges for natural flood management

Hedgerows provide a natural physical barrier that slows the flow of surface water. This reduces diffuse pollution (run-off from land containing pollutants) and the amount of sediment reaching the river. Hedgerows help to keep soil, sediment and nutrients in the fields.

By slowing the flow of the surface water you can intercept and temporarily store water on your land, delaying the water reaching the river and reducing the likelihood of flooding downstream.

This can be achieved by planting a hedgerow **across a slope**, and even on a **kest** (small ridge of soil), which can improve the growth of the hedge.

Hedgerows are one of many measures that can act as a form of natural flood management (NFM). Please get in touch with us if you are interested in exploring opportunities for NFM on your land.

Soils

Hedgerows reduce soil erosion by lowering wind speeds, providing barriers to surface water run-off and stabilising the soil with roots.

Trees have deeper roots that help to move nutrients to the topsoil for easy access by grasses and crops.

Increased leaf litter improves soil quality.

Arable

The presence of hedgerows can lead to increased crop yields by providing protection from strong winds and stimulating warmer soils - extending the growing season.

Hedgerows support a variety of farmland birds, spiders and insects as natural predators of crop pests.

Well managed hedgerows provide a constant supply of food and shelter to support diverse pollinators, essential for crop pollination and good yields.

Livestock

The shelter provided to livestock by hedgerows can protect them from wind and snow in winter, reduce lamb mortality rates in spring, and lower heat stress in summer.

© James Robinson

Browsing:

- Diverse hedgerows support a healthy diet for browsing livestock.
- Cattle supplement their diet with particular minerals and nutrients from certain plants, such as salicylic acid (an aspirin derivative) in willow and condensed tannins in tree leaves, that assist with pain relief and reducing internal parasites.

The growing season of grass may be extended in close proximity to hedgerows due to higher soil temperatures.

Hedgerows of greater quantity, width, and continuity can improve farm biosecurity, such as reducing the transmission between farms of Bovine Tuberculosis.

You should not cut trees or hedges from 1st March to 1st September due to the presence of nesting birds.

Biodiversity

Healthy and diverse hedgerows increase forage availability and habitat opportunities for wildlife. More flowers and foliage means more insects, leading to more birds and mammals.

Hedgerows act as wildlife corridors, facilitating wildlife dispersal and linking population pockets that would otherwise be isolated.

Cutting hedgerows every three years, and later in winter means more flowers and berries to support early spring invertebrates, overwintering birds, moths, small mammals and many more.

A hedge margin will protect the hedge from root damage and its wildlife from drift sprays, as well providing a great habitat for wild flowers.

Threats

1. Overtrimming

Repeated annual cutting at the same height leads to gaps and knots forming.

2. Neglect

Results in loss of vegetation at the base and a top-heavy, overcrowded line of trees that cannot withstand extreme weather conditions.

3. Disease

Can devastate tree species. Be observant of your hedges and seek expert advice if needed.

4. Direct removal

Complete loss of habitat as replacement hedges take many years to become as valuable as mature hedges.

5. Close ploughing

Damages roots leaving them more vulnerable to the effects of weather, including wind, rain and drought.

6. Spray drift

Pesticides negatively affect wildlife. However you can take precautions such as:

- Using appropriate equipment; and
- Applying low pressure and volume of pesticide, and operating in low wind conditions.

Spring

Hazel flowers provide early pollen as a food for bees.

© Ben Martynoga

Birch leaves attract aphids, providing food for ladybirds and other species further up the food chain. Woodpeckers and other hole-nesting birds often nest in the trunk.

Hawthorn flowers are eaten by dormice and provide nectar and pollen for bees and other pollinating insects.

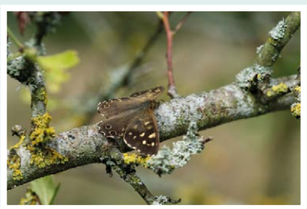
Early flowering **blackthorn** provides a valuable source of nectar and pollen for bees.

Guelder rose flowers are especially attractive to hoverflies.

Spring flowers that provide an early source of nectar and pollen especially for bees include: **rowan, spindle, cherry**, **crab apple.**

Summer

Field maple is attractive to aphids and their predators, including ladybird, hoverflies and birds. Lots of species of moth feed on its leaves. The flowers provide nectar and pollen sources for bees and birds, and small mammals eat the fruits.



© Ben Challis

Hazel leaves are a good source of caterpillars, which dormice eat.

Spindle leaves are eaten by caterpillars (moths). The leaves also attract aphids and their predators, such as hoverflies, ladybirds and lacewings, as well as house sparrows and other species of bird.

Early fruit from **cherry** sustains birds, including blackbird and song thrush; as well as mammals, such as badger and mice.

Planting and managing your hedgerow

A hedgerow is a living body so the management of it needs to be flexible and adaptive. It must be managed on a cycle of growth, trimming and rejuvenation to maintain its longevity.

Planting tips

- Speak to ERT or the Woodland Trust for local tree suppliers and any available schemes that include hedge planting.
- Plant bare-rooted, native broadleaf hedges in winter.
- Avoid planting if the ground is waterlogged or frozen.
- Don't plant under existing trees due to shading and lack of water for new plants.
- Plant spacing: 6 plants per metre, planted in a zigzag formation.
- Plant an additional standard tree every 10m in the centre line.

Most hedgerow species only flower and fruit from growth that is two years old or more.

Which species should I plant?

The greater the number of hedgerow species, the more species of wildlife the hedgerow can support.

60% of the hedge should be a thorn species, either hawthorn or blackthorn.

If you were planting a hedge 100m long, you would need **600 hedge plants** in total:

- **360** will be thorn (250 hawthorn, 110 blackthorn),
- **240** will be shrub, with species chosen from: alder, buckthorn, dog rose, dogwood, elder, guelder rose, hazel, and spindle.

Add in **10 standard trees,** choosing from: alder, crab apple, beech, birch, wild or bird cherry, field maple, oak and rowan.

Each species produces flowers, berries and nuts that are essential for a wide variety of wildlife to thrive - check out our handy seasonal guide on this page to find out more.

If you cut your hedgerow every year in autumn, you will reduce spring flowers and winter berry biomass by up to three quarters.

Tree guards

We advise that you protect your young shrub and tree species from the elements and browsing by using spiral or straight plastic tubes.

Many organisations, including the Woodland Trust, are trying to find alternative solutions to plastic tree tubes. However, none of the current options are suitable for the harsh Cumbrian climate.

Once the plants are established, remove and reuse or recycle the tubes to avoid restricting base level branch growth.

Autumn

Berries produced by many of the hedgerow species such as **elder, holly,** and **guelder rose,** provide food for birds, insects and mammals through autumn and winter.

Birds feast on the **blackthorn's** sloes.

In autumn, mammals such as squirrels, badgers and deer feed on **acorns.**

Rowan berries are a rich source of autumn food for birds.

Hollow **elder** stems provide shelter for overwintering insects.

Hazel nuts are eaten by dormice fattening up for hibernation; also by woodpeckers, nuthatches, tits, jays and small mammals.

Berries from the **guelder rose** are an important food source for birds.

Ivy flowers in autumn provide late nectar.

Winter

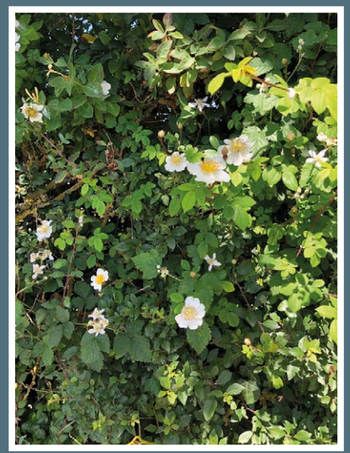
Crab apple is eaten by mammals and birds, such as mice, voles, foxes and badgers into the winter.

Dog rose hips last through the winter providing food for birds.

Willow blossom From Jan-Mar (before the leaves grow) this is an important source of early nectar and pollen for bees and other insects.

Know your hedge

Hedgerow - five years after laying
© Megan Gimber and PTES



© Megan Gimber and PTES

Dense hedge

Overgrown hedge, spreading at the top.
Requires laying to stimulate base growth.

© Megan Gimber and PTES

Maintenance tips

Short Term 0-3 years

- Check success rate of planting after first year.
- Stand up any windblown plants.
- Replace or re-insert damaged or fallen stakes.
- Possibly replace any failures, unless enough plants persist.

Medium Term 3-10 years

- Identify and mark **suitable young trees every 10m to exclude them from trimming** to allow them to become mature hedgerow trees (e.g. oak, birch, rowan, and fruit trees).
- Test browsing with unguarded trees:
  - If no browsing, remove spirals and trim frequently in the first 5 years to promote bushiness.
  - If browsing is present, remove guards in around 3-5 years, and trim the top occasionally during that time.
- Stagger the hedge management cycle across your land. This spreads the cost whilst always leaving shelter and resources for wildlife and livestock.
- Once guards are removed, trim **every 3 years** leaving **10cm new growth** each time to maintain a manageable state of growth and to prevent scarring forming as knuckles.
- Or, trim each side of the hedge in alternate years and leave the other side to grow.
- Delay hedge trimming until **late winter** for maximum biodiversity benefits.
- Trim to create an **A-shaped hedge** for a more robust and healthy hedge.

Long Term 10 years+

- As the hedge reaches maturity, management will change to prepare it for rejuvenation. The hedge will need to enter a period of non-intervention before **coppicing** or **laying**.
- **Laying:** Partial cutting near base and bending of the stems into an upward angle, to stimulate base level growth to increase density.
- **Coppicing:** Cutting off at the base to promote new growth of stems. This technique is used when stems are too large to be laid.
- Retain standard trees when coppicing or laying the rest of the hedge.
- **Gapping up** is best done when a hedge is being coppiced or laid.
- The cut material can be used to create a dead hedge that will surround the rejuvenated hedge and act as a protection barrier for new growth and as wildlife cover.

Below: Dense, managed hedge with many trees

© Megan Gimber and PTES

Overtrimmed hedge, with hard knuckle at trim line. Hedge is starting to thin out. Requires laying and gapping up.

Tall, leggy hedge ready for laying.
Trim sides and leave top in preparation.

The same hedge, being laid in Cumberland style by local farmers and ERT volunteers.

Further reading

People's Trust for Endangered Species - Hedgerows
https://ptes.org/hedgerow/

Hedgelink
https://hedgelink.org.uk/

Hedgelink – The Hedgerow Management Cycle
https://www.hedgelink.org.uk/cms/cms_content/files/78_hedgelink_a5_12pp_leaflet_7.pdf

Nigel Adams – Hedgerow Life Cycle Management
http://www.nigeladamscountrysidemanagement.co.uk/hedge-management-lifecycle.php

Woodland Trust – Hedgerows
https://www.woodlandtrust.org.uk/trees-woods-and-wildlife/habitats/hedgerows/

Woodland Trust - Twigged: A guide to your trees through the seasons
https://www.woodlandtrust.org.uk/media/1168/twigged.pdf

Hedging - a practical conservation handbook from TCV
https://www.conservationhandbooks.com/hedging/introduction/

RSPB - Farm hedges: Advice on how to manage farmland hedgerows for wildlife
https://www.rspb.org.uk/helping-nature/what-we-do/influence-government-and-business/farming/farm-hedges

About Eden Rivers Trust

Our dedicated farming, conservation and engagement teams work closely with farmers and other businesses to help find water-friendly solutions to improve the quality of water and habitats within the Eden catchment.

We can provide assistance and guidance on compliance with current Regulations and future Government policy.

If you are a landowner or farmer within the Eden catchment and need assistance with conservation maintenance activities (e.g. tree planting, hedge laying, coppicing and more), our dedicated and competent group of volunteers may be able to help, contact us now on 01768 866788.

www.edenriverstrust.org.uk

Department for Environment Food & Rural Affairs
England Trees Action Plan
Delivered through the Nature for Climate Fund

PUT DOWN ROOTS *with* Woodland Creation

WOODLANDS FOR WATER

Environment Agency

NATURAL ENGLAND

WOODLAND TRUST

Eden Rivers Trust