

Managing the margins: A guide to riparian land management

Watercourse ownership

Watercourses flow through, alongside, under and over farmland in times of flood. In many cases, they also form the boundary between landowners. Where a watercourse forms part of a boundary, ownership extends to the banks and bed of the watercourse, up to the midpoint of the channel.

Land immediately alongside watercourses is known as “riparian” and its management has a significant impact on the river, floodplain and downstream areas. Sensitive management is required to enhance farm efficiency, to safeguard the water environment, to improve habitats, and to mitigate flood risk. Therefore, it is important for landowners to know their rights and responsibilities, as well as those of other agencies, and the permissions required for activities in these riparian zones.



Plants and trees stabilise soil, keeping it together

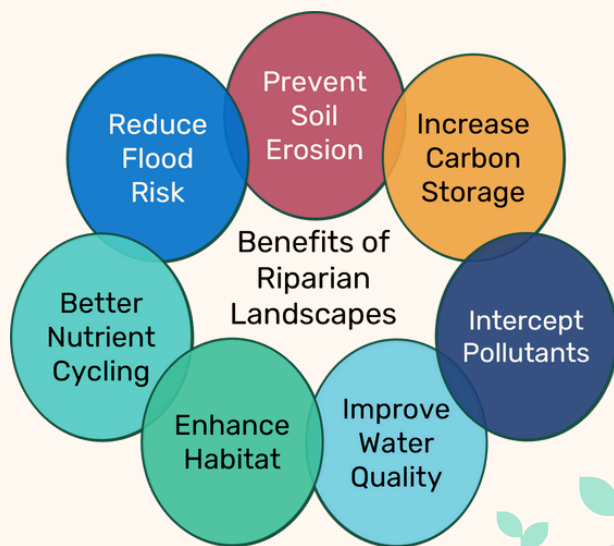
The margins where land and water meet can act as a natural buffer, absorbing nutrients, storing floodwater, and providing a wildlife corridor. Unbuffered areas can increase soil erosion, nutrient loss, and present risks to livestock.



No roots and bare soil make banks prone to erosion

Managing the margins

Riparian land is often referred to as marginal land for good reason. Whilst sometimes high in fertility, it can also be prone to waterlogging and flooding. Managing these areas to keep them productive often comes at great financial, and environmental costs, which are not always recouped. Where applicable, taking a step back, even a few metres, can improve farm efficiency, support rare habitats, and attract alternative income streams. Riparian land has the potential to deliver a range of ecosystem services with funding available through Environmental Land Management Schemes (ELMS), private finance and many other programmes.



What do healthy riparian zones look like?

- Low maintenance, wide buffers of trees, roots, and dense native ground cover to the water's edge.
- Dappled shade from the tree canopy cools the river.
- Woody debris in the channel.
- A mix of wider, deeper pools of water and shallow, faster-flowing riffles.
- Invertebrates, fish and small mammals thriving in native vegetation.

Key for diagram

- Prevent Soil Erosion
- Improve Water Quality
- Enhanced Habitat
- Improve Water Storage
- Carbon Sequestration

Sensitive Ditch Management

Ditches perform a vital role in draining productive farmland and managing the flow of water. They are also important farmland habitats, supporting many beneficial insects and amphibians.

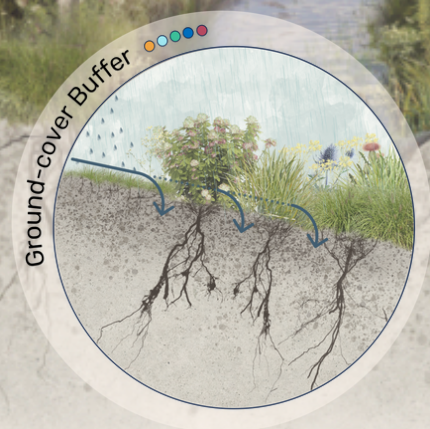
- 1 Only disturb one side of ditch bank per round of management.
- 2 Spread spoil thinly nearby, not banked.
- 3 Maintain shallow sloping ditch profile with in-channel shelf for permanent vegetation.

Livestock access

Livestock can form an important part of riparian land management, removing nutrient through grazing and creating disturbance. Conversely, high stocking and unrestricted access can damage banks, degrade habitats, and introduce nutrients.

Top tips:

- Limit direct access to watercourses where there is a risk of bank poaching.
- Pasture pumps, ram pumps and solar powered troughs can provide alternatives water sources.
- Constructed drinking bays and temporary fencing can also manage occasional access.



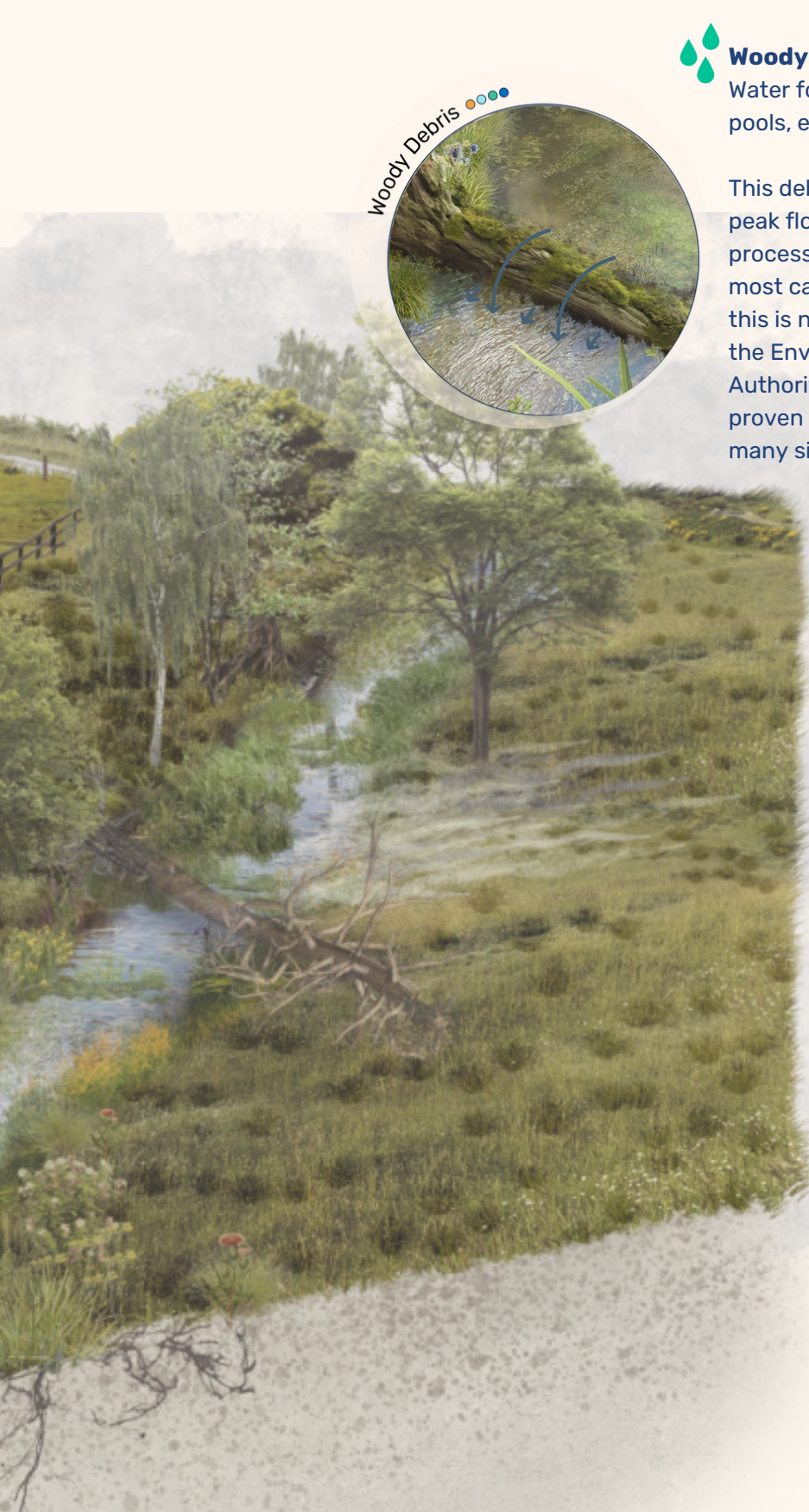
Leaky log dams and scrapes can effectively slow the flow in farmland ditches, improving water quality and reducing downstream flood risk.



Low-lying plants

Absorb run-off during high rainfall to:

- Reduce land loss.
- Trap more nutrients in the soil.
- Improve soil biology.
- Increase water retention.



Woody debris:

Water forced around fallen trees and branches scours pools, exposes gravels and oxygenates the water.

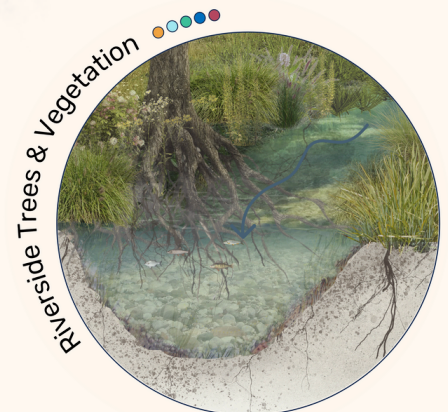
This debris also holds up water in high flows, reducing peak flow in flash-flood events and promoting natural processes. Whilst trees that fall from the bank are, in most cases, the landowner's responsibility to remove, this is not always necessary or the best option. Consult the Environment Agency or your Lead Local Flood Authority. Securing trees within the river channel is a proven Natural Flood Management technique that, in many situations, is preferable to removing them.



Riparian trees

Bankside trees and scrub provide an array of functions vital to the health of our rivers and streams.

- Dappled shade keeps rivers cool and regulates water plant growth.
- Roots stabilise banks and provide underwater habitat.
- Fallen material provides food and shelter for aquatic invertebrates.



Water plants:

Submerged and emergent water plants, often erroneously referred to as "weeds", are the foundation of the river ecosystem. Water plants provide food, shelter, oxygenating the water and filter some pollutants. Nutrients lost from land and discharged to waterways can cause some species to grow in excess, reducing habitat quality. Cutting banks and removing short sections of in-channel vegetation must be carefully planned and with all necessary permissions in place.

Water voles and their burrows are protected under the Wildlife and Countryside Act 1981. Therefore, damage to banks must be avoided and a margin of longer vegetation retained above the waterline.



Riparian zones and nature-based solutions continued

Benefits to your farming business:

- Cost-effective management: work with nature to save time and money.
- Pollution reduction: protect water quality and lower business risk.
- Climate change resilience: winters may be 30% wetter by 2070. Slowing water flow can reduce flood risk and increase groundwater recharge.
- Animal welfare: improve stock health, reduce lameness, and lower vet bills.
- Ecosystem services: diversify farm income by improving biodiversity, carbon capture, nutrient mitigation, and water storage.
- Wildlife: provide vital habitat for native species.

Get permission

Before working near watercourses or floodplains— including adding or removing materials—ensure you have the necessary permits to avoid prosecution.

- Main Rivers: contact the Environment Agency.
- Other Watercourses (streams, ditches, culverts): reach out to your Local Authority or Internal Drainage Board. You may need an Ordinary Watercourse Consent.



Take-home top tips

For riparian zones to deliver these benefits, they must be healthy. First, it's essential to designate substantial riparian areas along watercourses, which could include difficult land on floodplains or fast-eroding, scoured fields.

- Resist the urge to 'over-tidy' vegetation along and within watercourses, but do look out for invasive species, such as Himalayan balsam, and seek advice.
- Bare banks? Seek advice on tree establishment. Grants may be available.
- Discuss ideas with local farm advisers.

Need bespoke advice for water management on your farm?

**Contact Norfolk Rivers Trust for a free, confidential visit from one of our farm advisers:
01263 711299
info@norfolkriverstrust.org**

Useful links

For more information, please explore the links below:

- Owning a Watercourse - www.gov.uk/guidance/owning-a-watercourse
- Designated Main Rivers - www.gov.uk/government/collections/main-river-map-for-england-proposed-changes-and-decisions
- Permits for River Management (including blockages) - www.gov.uk/guidance/check-if-you-need-an-environmental-permit
- Pollution Prevention Rules for Farmers - www.farmingadvice.service.gov.uk/sites/default/files/2024-09/EA%20Pollution-Prevention%20Rules%20for%20Farmers%20booklet.pdf (Environment Agency, 2024)
- Sensitive ditch management - www.defra.farming.blog.gov.uk/create-and-manage-ditches-for-wildlife/
- Himalayan balsam - www.wildlifetrusts.org/wildlife-explorer/wildflowers/himalayan-balsam
- Norfolk Rivers Trust - www.norfolkriverstrust.org
- The Brecks Fen Edge & Rivers Landscape Partnership Scheme (BFER) - www.brecks.org/bfer
- Climate change resilience - Climate change in the UK - metoffice.gov.uk/climate-change/climate-change-in-the-uk



Funding statement: This resource was produced by Norfolk Rivers Trust in partnership with The Brecks Fen Edge & Rivers Landscape Partnership Scheme (BFER), with funding from the National Lottery Heritage Fund.