

Creating Riparian Zones

The strip of land beside a waterway is called the riparian zone and it is a crucial buffer between land and water. Some riparian zones are grassed, but ideally they are home to many species of plants that existed prior to land development. Effective riparian zones include plants that can deal with floods and seasonal wet and dry periods, and will improve the health of your waterways.

Why do we need riparian zones?

Land development for farming, urban areas, industry and flood control has removed much of the original vegetation along our region's streams. This has resulted in greatly increased amounts of sediment, nutrients and bacteria entering waterways via runoff. Given that Southland has over 17,000 km of waterways, creating effective riparian zones can significantly reduce impacts on water quality and biodiversity.

Some on-farm benefits of riparian zones include:

- Reduced losses of sediment and nutrients from the land.
- Reduced stock losses, provision of shelter and helping with stock control.
- Reduced drainage maintenance from excessive weeds and silt.
- Minimised flood damage to farmland and infrastructure.
- Increased land and farm value.

Benefits for the wider community include:

- Stabilised banks and reduced erosion.
- Improved water quality and increased biodiversity.
- Improved recreational and cultural values.



Riparian zone considerations

The key reasons to create a riparian zone is to exclude stock from the waterway, and to have a buffer between the water and land to reduce soil, bacteria and nutrient losses.

The buffer needs to be of an appropriate width depending on slope, flood levels and farming requirements. The riparian buffer zone vegetation can consist of ungrazed grass, commercial trees, stock shelter tree lines, native plants, carefully grazed grass or a combination of these.

Five steps to create effective riparian zones

1. Fencing to exclude stock

- Place fencing a suitable distance away from the waterline to allow for floods, drainage maintenance access or digger reach, slope, winter grazing and planting.
- Details can be found in the Design and cost of fencing and Drainage and channel maintenance factsheets.

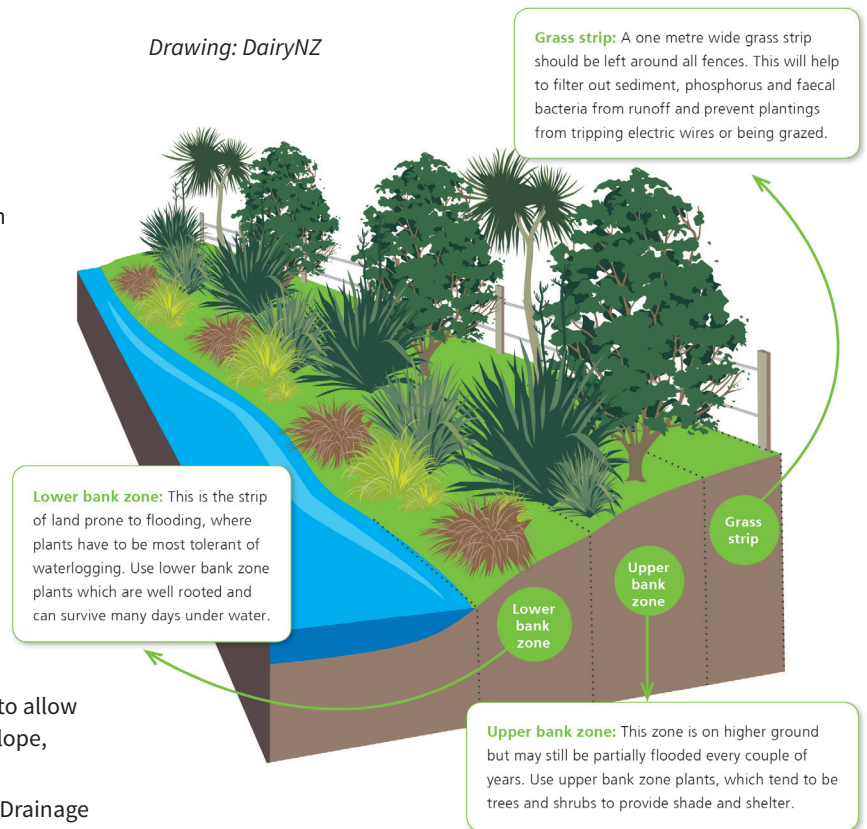
2. Site Preparation

- If there are tiles where you are planting, replace tile ends with solid pipe or only plant shallow rooting plants over tiles.
- Spray or remove weed infestations and allow grass to grow long. This will prevent hares and rabbits accessing young trees as they don't like pushing through long, wet grass.
- Spot spray individual plant sites with Roundup 4 – 6 weeks prior to planting from spring to early autumn.

3. Plant Selection

- Select the right plants for the job, for example, for shelter, bank stabilisation, timber production, aesthetics or wildlife values.
- Ensure plants are for the right climate zone for maximum growth and survival (see the Riparian Plants for Southland factsheet).
- Choose plants that will not cause future problems (e.g. plants that grow into power lines, collapse banks as they grow bigger, create too much shade for other plants, or require excessive maintenance).

Drawing: DairyNZ



4. Planting

- Plant one side only if waterway requires drainage maintenance, preferably the north side to increase shading of water.
- Plant natives at 1.5m and exotics at 2m spacing from each other and the fence, to protect plants from browsing stock and to prevent them from shorting electric fences.
- Use young plants, preferably of size V150, with a good root-to-shoot ratio for cost effectiveness and high survivability.
- Use protector sleeves around native shrubs and trees.

5. Maintenance

- Release spray to control grass and weeds every year for up to three years. A Gallant/Versatill mixture can be used, but only around eucalyptus, poplar and willow species.
- Replace any lost plants and control pest weeds and animals like possums, rabbits and hares.
- Read more in the Maintaining Riparian Zones factsheet.

Further Assistance

Every farm is different, so having the expert advice of a land sustainability officer is recommended. To arrange a free visit please contact Environment Southland's land sustainability team on (03) 2115 115 or 0800 76 88 45.

The booklet *Clean Streams – A guide to managing waterways on Southland farms* is available on Environment Southland's website. You can also request a printed copy by phoning 0800 76 88 45.