

LAND MANAGEMENT

RIPARIAN MANAGEMENT

The Importance of Riparian Protection

What is a riparian margin?

A riparian margin is the strip of land that runs alongside a waterway.

What is riparian protection?

It is the protection of a waterway from pollution and/or sediment, usually by fencing and planting trees and shrubs, or by managing a grass sward.

A variety of methods help prevent stock access and allow vegetation to regenerate alongside a waterway.

Riparian protection will have the greatest impact on smaller waterways, due to a smaller volume of water in relation to the amount of pollutants. Often improved water quality in large lowland rivers is a result of good riparian management in the many small streams in the upper catchments.

Why carry out riparian protection?

1. *Improvement in water quality*

Some landuse practices in Hawke's Bay lead to a reduction in the quality of a waterway, they include:

- Intensive grazing, especially with cattle, such as break-feeding beside a waterway. This can cause pugging and overgrazing which decreases the infiltration capacity of the soil causing increased run-off into the waterway which carries nutrients and sediment.
- Grazing to the waters edge, which allows dung and urine direct entry into the waterway, can cause banks to collapse and reduces vegetation for filtering.
- Direct application of fertiliser over a waterway or transportation of nutrients by surface run-off from surrounding pastures. This is elevated if pastures are short.
- Use of agrichemicals near the waterway.
- Siting of fences, tracks, races and yards close to the waterway can cause gullying.
- Construction of silage pits close to the waterway, where nutrients such as nitrates can leak into the waterway through groundwater.

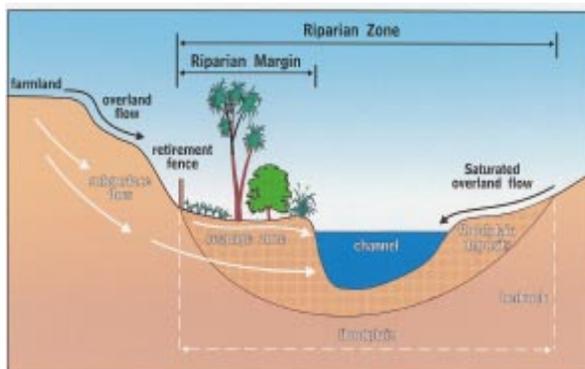


Diagram showing riparian zone and water flow.



Example of effective riparian protection.

- Draining wetlands which reduces the natural sediment trapping and nutrient filtering effects of the wetland.
2. *Stream bank protection and stabilisation*
Trees and shrubs planted along a stream help reduce stream bank erosion and create shade. The exclusion of stock also helps to protect stream banks.
 3. *Nutrient filtration*
Vegetation along a stream helps absorb nutrients and the grass sward that develops after fencing will filter both nutrients and sediment from farm runoff before it reaches the waterway.
 4. *Wildlife and stream habitat*
By shading the waterway, water temperature is reduced and weed growth is suppressed, creating a better habitat for aquatic life. Streamside vegetation provides cover for spawning fish, and food and habitat for nesting and juvenile birds. As water plants and invertebrates increase, they provide a better food supply for fish and waterfowl. Riparian vegetation and native vegetation remnants grown together also extend the habitat for native birds and create wildlife corridors for migration.
 5. *Improvement of the stream landscape, amenity and recreational values.*

What is the best width for a riparian margin?

There is no best width. The width will vary between waterways and will depend on the characteristics of the waterway, including:

- Channel shape
- Capacity of the waterway
- Topography and soils
- Natural vegetation already growing alongside the waterway.

What is involved in riparian protection?

Key tools for effective riparian protection are fencing, planting and good management.

Fencing

Fences prevent stock entering the stream and surrounding area. This reduces stream bank erosion and prevents stock faeces

and urine entering the water. Fences also allow vegetation to grow. They must be durable, stock-proof and out of the flood-path.

Planting

Trees and shrubs provide stability to the stream banks, strip nutrients from groundwater and runoff, and provide shade for the stream and its wildlife. A wide variety of trees and shrubs, both native and exotic, may be used. Grasses provide the best method of nutrient stripping and should be an integral part of the riparian margin.

Management

When choosing plants, select those which require low maintenance in the future. If planting exotics such as willows, manage them to minimise future problems.

Following the retirement of these riparian margins, plant and animal pest control will need to be maintained long-term by the landowner as these will be a haven for plant and animal pests.

What can you do to protect your riparian margins?

When deciding to begin riparian protection, the following steps should be followed:

1. Decide which waterway you want to protect
2. Find the most practical and beneficial fence line
3. Construct a stock-proof fence
4. Plant trees and shrubs for protection
5. Install an alternative stock water supply
6. Undertake weed and pest control.

For further information

For further information on riparian issues ask for the other titles in this series or contact Land Management Officers or Environmental Monitoring staff at the Hawke's Bay Regional Council for advice:

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