

LAND MANAGEMENT

RIPARIAN MANAGEMENT

Wetlands

Introduction

Over the past 150 years, New Zealand's wetlands have been developed into pasture and cropping. Now less than 10% remain, many of which have been modified by drainage and development.

What are wetlands?

The Commission for the Environment defines wetlands as:

"A collective term for permanently or intermittently wet land, shallow water and land-water margins. Wetlands may be fresh, brackish or saline and are characterised in their natural state by plants and or animals that are adapted to living in wet conditions".

Freshwater wetlands can be identified into three main categories:

1. *Lacustrine Wetlands* which are lakes, ponds and their margins, with 70% of the area being open water, e.g. Lake

Poukawa, Lake Hatuma and artificial wetlands such as farm dams.

2. *Riverine Wetlands* which are rivers and streams and their margins, e.g. Tutaekuri River and Ngaruroro River.
3. *Palustine Wetlands* are bogs and swamps which have a high water table, e.g. Pekapeka Swamp and areas around natural springs.

Saltwater wetlands in HB can be categorised as:

1. *Estuaries* which are a partly enclosed coastal area where seawater mixes with fresh water, e.g. Waitangi Estuary and Ahuriri Estuary.
2. *Lagoons* which receive both seawater and freshwater, but are non-tidal, receiving salt water only when the sand bar is breached, e.g. Whakamahi and Ngamotu lagoons.



Well fenced wetland with rank grass for nutrient supply and sediment trapping.



Large fenced wetland area with dry slopes utilised for timber production.

Why are wetlands important?

Wetlands improve water quality by absorbing nutrients and trapping sediment which would otherwise flow into the waterway.

The greater the level of land clearance and development next to a wetland, the greater the need for wetlands to act as a filter and buffer between land and water.

Functions of wetlands include:

1. Nutrient Filtering

Nitrogen and Phosphorus enter waterways through groundwater, surface runoff, effluent and direct application. Research shows that wetlands remove up to 90% of nitrates from the groundwater by denitrification (anaerobic bacteria use the nitrate to produce a gas which is released into the atmosphere), as well as trapping nutrients from surface runoff. Tile drains carry groundwater directly to waterways, whereas wetlands absorb the nutrients before they get to the waterway.

2. Sediment Trapping

Sediment is transported primarily through runoff or direct erosion. The rank vegetation of a wetland traps any sediment passing through and prevents it from entering the waterway.

3. Flooding

Wetlands slow down the speed of surface water during a high rainfall event, which can reduce flooding and erosion. They "pond" floodwaters, then release them slowly like a sponge.

4. Habitats

Wetlands are ecologically important because they provide habitats for a wide array of flora and fauna. Because wetlands occur where aquatic and land-based ecosystems meet, they provide unique habitats and breeding grounds, and are important for the survival of many species of native plants and animals. They are also essential breeding areas for some inland and offshore fish.

5. Recreation

Wetlands are used for fishing, shooting, botanising, bird watching and for water sports.

6. Education

Wetlands form excellent examples of the functioning of ecosystems. They offer a storehouse of information on climate, vegetation, vulcanology, archaeology and other events enabling a better ability to manage future events.

7. Cultural value

Wetlands are of great historic and present importance to Maori as both a food and medicinal source and for their spiritual significance.

What can you do?

1. Don't drain these important areas.
2. Fencing is the most immediate and effective way to protect wetland areas. Fences should be permanent, stock-proof, out of the way of floods and be low maintenance. Fencing keeps stock out, reducing stock losses and making mustering easier. It also allows vegetation to regenerate and water quality to improve.
3. Provide an alternative water supply such as gravity fed troughs, extensions of existing reticulation systems on the farm, or sharing troughs between two paddocks.
4. Planting of margins using damp tolerant species such as flaxes, grasses and sedges, will aid in nutrient and sediment trapping, provide shelter and habitat and improve aesthetics.

For further information

For further information on wetlands and water management issues, ask for other titles in this series, or contact Land Management or Environmental Monitoring Staff at the Hawke's Bay Regional Council for advice.

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