Making the most of wet areas on farm

A farmers’ guide to restoring natural wetlands

What is a wetland?

All of the permanent or seasonally wet areas of your farm are small natural wetlands, including bogs, swamps and parts of the paddock where cows might get stuck. Wetlands have an important part to play in reducing our environmental footprint.

Throughout New Zealand, wetlands support the greatest concentration of plants of any New Zealand habitat. They help reduce flooding by acting as a sponge, and improve water quality by trapping, filtering and removing contaminants, especially sediment, nitrogen and phosphorus. Protecting, restoring, and creating these wetland ecosystems on-farm helps improve downstream water quality.

Many different wetland types exist in New Zealand. This guide focuses on how to protect, restore and manage the small wet areas that are common on New Zealand dairy farms.
Take advice and keep it legal

If you want to restore or protect a wetland, and it involves moving dirt or damming water, you may need a consent. Always contact your local regional council or rural professional for advice and assistance before you start. They can help you prepare a wetland management plan, identify potential funding, and ensure your plans are compliant. Several years of weed and pest control may be required so having a good maintenance plan is essential.
You can recognise the types of wetlands covered in this guide based on their location on farm, they should be easy to spot. For more information on other wetland types visit www.wetlandtrust.org.nz.

**Seeps**

Seeps occur at the bottom of hill slopes where groundwater comes to the surface. Seeps can be permanent or seasonal and exist on all soil types.

Seeps can be nutrient rich because they receive runoff from the paddock and often cows have direct access to them. Losses of sediment and E.coli to water from these areas can be significant during rainfall or overland flow. Managing them will have water quality gains by preventing deposition and trampling by cows and slowing down overland flow.
**Wet areas in paddocks**

**Wet areas in paddocks** are swampy or boggy places where drainage is poor, such as hollows or valley bottoms. These areas could be fed by rainfall or a high water table, and tend to be on heavier soils. The risk of overland flow to waterways is less as they are often not connected to waterways. They are still nutrient hotspots and water quality will benefit from stock exclusion and planting.

Managing these wet areas has animal welfare benefits such as improved teat health and general cow wellbeing, it also reduces the instances of stock getting stuck. Many farmers find the most satisfying part of managing them is the aesthetic benefits and the increase in biodiversity on farm; particularly birdlife but also native fish and aquatic insects.

**Riparian wetlands**

**Riparian wetlands** are wet or boggy places bordering drains, streams, rivers and lakes. They can be included in your riparian fencing and managed as a riparian wetland.

The riparian wetlands can be nutrient rich because they receive runoff from the paddock and cows have direct access to them. Losses of sediment and E.coli to water from these areas can be significant during rainfall or overland flow. Managing them will have water quality gains by preventing deposition and trampling by cows and slowing down overland flow.

Alternatively, you may have a race, crossing, or cropping paddock uphill from the waterway and want to slow down and trap sediment and nutrients to prevent them from entering the waterway. This can also be achieved by expanding the riparian area into a wetland.

Agrecovery specialises in the safe collection and disposal of unwanted or expired agrichemicals and their containers. Many chemicals are free to dispose of, others may cost but are often subsidised. Collections are held on a regional basis.

To organise chemical disposal with Agrecovery, firstly take an inventory of unwanted chemicals for disposal and book online or call 0800 247 326. Any applicable costs will be advised before collection is confirmed.
Your aim when looking after these wetland areas is that they get to a state where they will look after themselves with little input from you.

The steps to achieve this are the same for all three wetland types:

- make a plan
- keep stock out
- keep it wet
- control plant weeds
- control animal pests
- plant if needed.

**Make a plan**

The Riparian Planner can be used to create a unique-to-your-farm plan to manage all your wetlands and riparian areas on farm. Once completed, the plan includes costs, actions and a timeline, a plant list, a map and details on where to plant, site preparation and animal and plant pest control.

![Image of wetland area]

The Riparian Planner includes a function to plan the management of your wetland or critical source area. It allows you to specify how much of the wetland needs to be planted.

To get started with your riparian plan visit [dairynz.co.nz/riparian-planner](http://dairynz.co.nz/riparian-planner).
**Keep stock out**

Excluding stock will allow wetland plants like sedges and rushes to grow back naturally without being eaten or trampled on. It also prevents direct deposition of effluent and soil disturbance from cows.

Use stakes to mark the edge at winter and summer water levels to determine where your fence should go. Leave a 1m grass buffer between the wetland and your fence, like in your riparian zones, to prevent plants tripping the electric fence.

For areas that are inconvenient to fence permanently, such as those that are only wet in winter, improved water quality can still be achieved with temporary electric fencing.

**Keep it wet**

Successful wetlands must remain wet for a large proportion of the year. This keeps the plants alive and allows a healthy colony of wetland bacteria to establish in the root zone and reduce nutrients by de-nitrification.

The water level in the wetland and how much it fluctuates determines what plants and animals will thrive. Mark water levels at different times of the year with a depth marker (a wooden post is ideal). This will help you to determine how much water you have during the year and then which plant type to use according to the planting table.

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**Tip: Ensure that new and existing drains don’t drain water from that area.**

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**Control plant weeds**

Pest plants can cause havoc on your farm, ruin your planting around wetlands.

Follow the steps modified from weedbusters.co.nz below to keeping your waterways weed-free.

1. **Identify the weed.** If in doubt ask the biodiversity officer at your regional council for help to identify the type of weed and the treatment needed. Alternatively, visit weedbusters.org.nz.
2. **Start small.** Avoid creating large cleared areas – this encourages more weeds to take hold and it ensures you don’t bite off more than you can chew.
3. **Plan work in stages.** Ensure each area is clear before moving onto the next. Start at the edges before dealing with the worst affected areas.
4. **Plant up.** Replace weeds with natives or non-weedy plants as you go. It’ll help prevent weeds returning.
5. **Take care.** Avoid over-spraying and avoid spraying your sensitive plantings. Only spray on wind-free days. Consider using a spray guard on the nozzle to avoid drift.
6. **Removal.** Seeds and stalks can grow again. Use fabric or rubbish bags, or solid containers to carry away weeds.
7. **Disposal.** Many weeds will die back and can be left in place after spraying but some will need removal or composting.

Weed control will require persistent effort over time. Continue with your weed control once plants have been planted to avoid losing all the good work you have done.

**Control animal pests**

Pests such as rabbits, hares, possums and pukeko will eat your plants.

Visit the National Pest Control Agency website ncpa.org.nz for all you need to know about vertebrate pest control, including the best types of control for each pest, licencing, where to purchase materials and monitored pest numbers. Alternatively, contact your regional council biosecurity officer.
Plant – if plants are needed

Often excluding stock and controlling weeds is all it takes for sedges and rushes to grow back naturally. These wetland plants, as well as pasture grasses, can create suitable conditions for nutrient filtering. Planting other native plants can help to improve biodiversity and aesthetics of your wetland.

Wetland plants

1. **Open water up to 2m deep**
   - Emergent plants
   - **Suggested plants**
     - Lake club rush
     - Raupo

2. **Shallow standing water**
   - Emergent and Marginal plants
   - **Suggested plants**
     - Swamp laire
     - Kahikatea
     - Carex
     - Jointed
     - Rush
     - Bamboo spike hedge
     - Lake club rush
     - Marsh club rush
     - Baumeria
     - Raupo
     - Machaerina

3. **Boggy**
   - Marginal plants, some, trees and shrubs
   - **Suggested plants**
     - Cabbage tree
     - Swamp laire
     - Kahikatea
     - Pukatea
     - Swamp coprosma
     - Manuka
     - Flax
     - Toetoe
     - Carex
     - Giant umbrella sedge
     - Lake club rush
     - Marsh club rush
     - Kutakuta
     - Machaerina

4. **Damp**
   - Trees and shrubs
   - **Suggested plants**
     - Cabbage tree
     - Swamp laire
     - Kahikatea
     - Karamu
     - Coprosma propinqua
     - Pukatea
     - Swamp coprosma
     - Manuka
     - Flax
     - Toetoe
     - Carex
     - Giant umbrella sedge
     - Bamboo spike sedge
     - Kutakuta

5. **Dry**
   - Trees and shrubs
   - **Suggested plants**
     - Cabbage tree
     - Karamu
     - Manuka
     - Toetoe
     - Coprosma propinqua
     - Totara
     - Coprosma robusta
     - Hebe
     - Flax
     - Mahoe
     - Five finger