WAIORA
MANUHEREKIA

Ephemeral Wetlands

Ephemeral wetlands are found throughout the Manuherekia Catchment, on glacial moraines, river flats and bedrock substrates (schist and limestone). Recent wetland mapping has noted hundreds of ephemeral wetlands within the Manuherekia Catchment.

They are considered historically rare ecosystems, meaning that even prior to human modification of the catchment, they were limited.

Ephemeral wetlands are usually closed depressions with seasonally fluctuating water levels and soil wetness. Water levels and soil wetness can vary from complete inundation of depressions to substantial dryness in the summer months. These unique and extreme conditions have allowed distinctive low-stature herbaceous plant communities to develop within ephemeral wetlands.

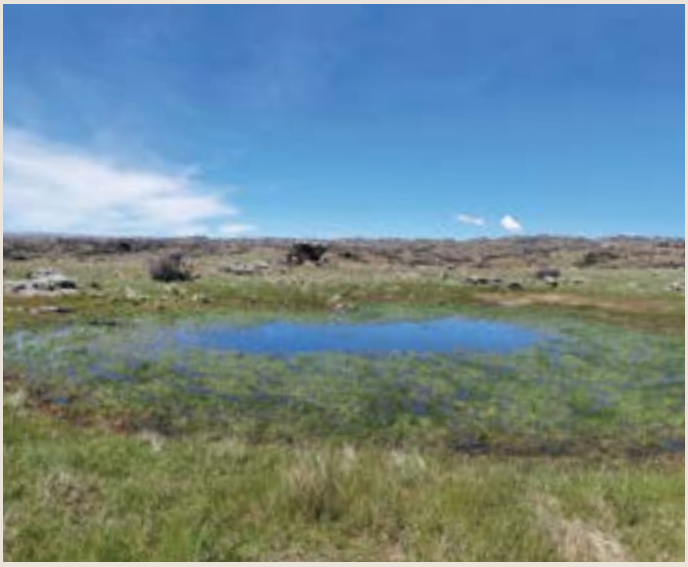
Spotting an ephemeral wetland

An ephemeral wetland is typically circular to oval with a rounded shape and can easily be mistaken for ponds or pasture at certain times of the year. Some early irrigation schemes in the catchment had small ponds linked by water races, which can look similar to ephemeral wetlands.

Look for wet depressions without an outlet on your property that experience seasonal fluctuations in water levels. Standing water may be present towards the end of autumn, winter and spring.

The wetland will typically dry out over summer and is often completely dry by the end of summer.

The vegetation in ephemeral wetlands often changes in response to these seasonal changes. A typical ephemeral wetland comprises a variety of compact turf species (dense low vegetation) and annual herbs. Sedges and rushes may be present around the edges. Ephemeral wetlands can also be dominated by exotic grasses and herbs.



How to identify a 'healthy' ephemeral wetland

A healthy ephemeral wetland will show no signs of human–induced disturbance such as cultivation, infilling, drainage, or compaction by stock or vehicles.

It will have native turf plant communities with minimal invasion of exotic weeds, including pasture grasses.

Assessing the 'health' or condition of an ephemeral wetland may require a trained ecologist or someone with botanical field skills to identify the presence of indigenous vegetation communities. The timing of assessments and surveys is important and should occur as the wetland begins to dry out in January to maximise the chance of detecting threatened plants and spring annual herbs.

> **Ephemeral wetlands are more sensitive to changes than other wetland types and are less well understood. If you suspect you have an ephemeral wetland on your property, seek guidance from experts or the council before making any major changes to current management.**

Managing ephemeral wetlands

Do you have an ephemeral wetland on your property without realising it?

The first step is to identify it. You can seek help by contacting your local Otago Regional Council Catchment Advisor or a specialist wetland ecologist.

Avoid cultivation, drainage, and habitat modification.

Many shallower ephemeral wetlands around agricultural land have been lost or modified through cultivation, infilling and drainage. Consider blocking or infilling any existing drainage channels to allow temporary ponding within the wetland basin.

Limit livestock and nutrient enrichment.

Ephemeral wetlands are fragile and prone to trampling or browsing damage by cattle or deer, as well as nutrient enrichment from stock and fertiliser. Light seasonal grazing by sheep can help manage shallower ephemeral wetlands, but only during the growing season when exotic grasses and herbs are actively growing. Once livestock are limited and cattle excluded, careful use of fertiliser around the wetland will help reduce nutrient input.

Limit vehicle access and maintain tracks.

Ephemeral soils are vulnerable to compaction. Farm or recreational off–road vehicles (e.g., 4x4s, quads, dirt bikes) can cause severe damage. You can place large rocks around the wetland to prevent vehicle access while allowing sheep and birds to enter.

Control invasive weeds.

Weeds can crowd out native plants and quickly establish in exposed soil. Priority should be given to removing large woody weeds like willows and gorse, but care is needed as ephemeral wetlands may contain uncommon or threatened plants that can be easily overlooked.

Reintroduce turf plant communities.

Some isolated ephemeral wetlands in highly modified landscapes may be completely devoid of native species. These cases require a field survey and advice from a wetland specialist or ecologist. Additional water may be needed.

Notable plants and animals

Ephemeral wetlands are a particularly unique ecosystem and support a number of threatened or rare plants adapted to the variable environmental conditions of these wetlands.

They support turf communities containing native herbs and spring annual herbs. Notable species include myrrh and sneezeweed, marsh willowherb, New Zealand mousetail, and many others. You can see a full list on page 31 of our Management Plan.

Ephemeral wetlands provide temporary foraging and roosting habitat for locally migrating birds. Grassy ephemeral wetlands with turf species attract birds such as tōrea/South Island pied oystercatcher and pied stilt for foraging, while those with significant sedges and rushes around the edges may provide temporary roosting or foraging habitat for locally migrating matuku-hūrepo/Australasian bittern.

Native lizards, such as tussock skink or McCann's skink, are unlikely but may occur in drier areas around the margins of ephemeral wetlands.

> **Ephemeral wetlands can support a wide array of invertebrates, including flies, land shrimp, and non-wetland specialist insects such as the naturally rare ground beetle.**

Ida Valley carabids have been found in wetland and dry habitats, and may be well-suited to ephemeral wetlands, though they have not been seen for over 50 years. Ephemeral wetlands are also likely to periodically support tadpole shrimp.

Threats to ephemeral wetlands

These critically endangered ecosystems are often hard to spot and easily overlooked, putting them at high risk of being filled in, drained, or, particularly for shallower ephemeral wetlands, oversown and cultivated.

Other threats include nutrient enrichment, sedimentation that alters the wetland's base permeability, weed invasion, and soil compaction by stock and vehicles.

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mcg.org.nz/waiora-manuherekia

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