WAIORA MANUHEREKIA

SUPPORTING OUR
Manuherekia wetland network

Kirk Creek Headwaters Marsh Complex (ephemeral wetlands)

Site Details

- **Landowner:** Callum and Dayna Paterson
- **Primary contact:** Dayna Paterson
- **Location**
  - Coordinates: -45.266410, 169.693502
  - Ecological District: Maniototo
  - Ecological Region: Central Otago
- **Wetland dimensions:** 6.6 ha.
- **Special designation:** Regionally Significant

Site Map

Project area

This project refers to the several ephemeral wetlands included within the Kirk Creek Headwater Marsh Complex. These wetlands are designated as Regionally Significant, more information can be found on the ORCs website: https://www.orc.govt.nz/environment/water-care/wetlands-and-estuaries/natural-wetlands/regionally-significant-wetlands/central-otago-district/kirk-creek-headwaters-marsh-complex/

The ephemeral wetlands appear depressions on the land and are only occasionally wet. Their water source being groundwater and possibly rainwater. The areas that are the focus of this plan are found within paddock Ewe block of Ida Valley Station.

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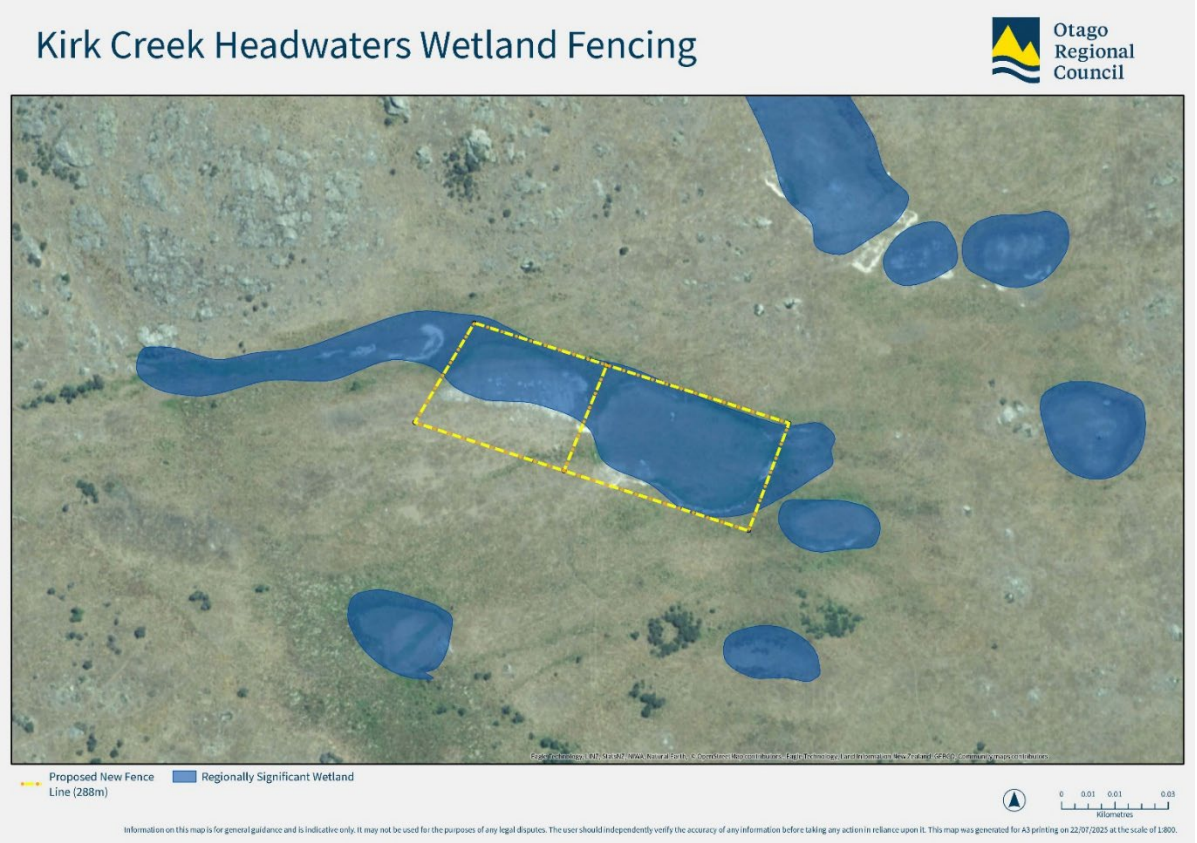
Wetland area



Wetland Planting Layout

NA – planting is not currently proposed for this site due to the lack of understanding of the impacts planting would have on these sensitive areas.

Current wetland condition photo

Photo taken November 26th, 2024.

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Figure 2. One of the ephemeral wetlands during Waiora Manuherekia project visit on November 26h.

Site Description

General

Primary hydrosystem: Palustrine
Secondary hydrosystem: N/A
Primary wetland class: Ephemeral
Secondary wetland class: N/A
Primary wetland form: broad ridge
Secondary wetland form: slight depressions
Primary structural class: Grassland (seasonal)
Secondary structural class: N/A

Current Vegetation

Vegetation communities in ephemeral wetlands change seasonally in response to seasonal fluctuations in water levels. An initial site visit was undertaken on November 26th 2024, vegetation at this time included *Ranunculus* subgenus *batrachium* (water-crowfoots) growing in standing water of ephemeral wetland and the ground cover in the surrounding area is otherwise mostly exotic pasture grasses.
A second site visit was undertaken on the 27th of February 2025, at this time standing water was absent from the ephemeral wetlands. Vegetation in the ephemeral wetland depressions was mostly dominated by exotic grasses, including marsh foxtail and either brown top or creeping bent. Exotic herbs are also common including storksbill, centaury, sheep's sorrel and *Atriplex patula*. Woolly mullein and jointed rush are also common with scattered *Juncus*

species. Some mudwort plants (an indigenous annual herb) were detected, with many drying out. It is possible that other indigenous spring annual plants are present.
Vegetation outside of the ephemeral wetlands is dominated by pasture grasses and exotic herbs including white clover, sweet vernal, thistle and storksbill. Sparse indigenous species, hard tussock and pōhuehue grow around wetland margins.

Special Features

Ephemeral wetlands are inherently special due to their unique fauna and flora associated with them and their rareness and are designated as a Critically endangered habitat type.

Nearby Natural Areas

The surrounding area of Ida Valley Station hosts many sites of high native biodiversity value. The upper slopes of the Ida Valley Range, where these wetlands lie, are not intensively farmed and much of the land hosts scattered native scrubland and tussock lands. A large area of red tussock at the back of the Poolburn block is considered an Outstanding Natural landscape (ONL) under the Central Otago District Council plan.

Wildlife

Results from eDNA samples taken from the three ephemeral wetlands showed freshwater crustaceans (*Daphnia*) present. Ida Valley Station provides habitat for a range of indigenous birds including kārearea/NZ falcon, karoro/black backed gull, and kāhu/harrier hawk. Large areas of the station provide excellent skink and gecko habitat. The Clutha flathead galaxias (*Galaxias 'species D'*) has been recorded in the headwaters of Kirk Stream, as well as Māori Creek and the tributary to the Poolburn Reservoir. The Central Otago roundhead galaxias (*Galaxias anomalus*) has been recorded in Moa Creek on the property.

Site History

This area of the farm usually only has light levels of sheep grazing, and occasionally cattle. Wild deer and pigs are present.

Description of water flow and drainage

The ephemeral wetlands are fed by ground water and rainwater.

Current condition

Somewhat degraded by stock grazing and invasion by exotic grasses and herbs.

Enhancement Proposal

Vision

To maintain and enhance the ecological values of the ephemeral wetlands. Setting an example for how to best manage this wetland type in the Manuherekia catchment.

Objectives

Investigate opportunities to enhance the biodiversity values of ephemeral wetland systems. By trialing different fencing regimes that exclude all stock, no stock, and just cattle, we can

inform management plans for enhancing ephemeral wetlands. The fencing trial will be conducted by the Otago Regional Council, with Waiora Manuherekia funding the fencing materials.

Expected outcomes

Fencing

Two exclusion plots will be constructed within the ephemeral wetland area indicated in Figure 1. One plot will exclude all stock types, the second plot will only exclude cattle and still allow grazing from sheep. There will also be a control plot that is not fenced but GPS marked. Assessing the outcomes of differing grazing regimes in these wetland systems will help inform best practice management for landowners within the Manuherekia Catchment and the Otago region. The desired outcome is to maintain or improve the rare turf communities that depend on these wetlands.

Advice from Wildlands consultant, DOC ecologist, experts from Manaaki Whenua Landcare Research and ORC wetland ecologist all concur that light grazing from sheep may be necessary to best manage this wetland type. This is because the current vegetation community hosts exotic pasture species and weeds, that with the absence of any grazing, could out compete native turf species. However, there has not been sufficient research to fully support sheep grazing as the best management practice and this trial aims to answer what grazing regime will result in the best ecological outcome.

Weed control

Ida Valley Station regularly controls broom and gorse across their property. This should be continued and the wetlands monitored for establishment of woody weeds.
The stock exclusion scenarios will inform how to manage in the long term whether sheep grazing is suitable for maintaining the turf communities within the wetlands.

Sedimentation

There is the potential risk of sedimentation from cattle, wild pigs and deer during the uncommon occurrences of standing water being present within the wetlands. These wetlands are isolated and do not deliver water overland to another waterway. Therefore, the risk of contributing run off to a waterway is very low as the sedimentation will be contained within the depression and filtered through the soil profile.

Total Investment

Fencing: $5,000
Weeds: $0
Planting: $0
Total: $5,000

Funding source

Fencing materials – Waiora Manuherekia
Fencing materials over $5,000, fencing installation & ongoing weed maintenance – Landowner.

Monitoring

Annual photopoint monitoring to be used to track vegetation changes in the wetlands is to be carried out by the landowner.
The ephemeral wetlands indicated in Figure 1 will be included within ORCs existing wetland monitoring program of works. Please refer to the ORC land management agreement (under development) that describes the methodology of the fencing trial.

The ORC will monitor changes to the vegetation communities within the wetlands under different grazing regimes, please refer to the ORC land management agreement that describes the methodology of the fencing trial. Baseline monitoring of the wetland vegetation will occur between November 2025 and January 2026, this will be carried out by suitably qualified consultant engaged by the ORC. Monitoring of the wetland vegetation will then occur after 3, 5 and 10 years.