

# WAITUNA

## CATCHMENT AND LAGOON

CATCHMENT AREA 20,423 ha  
1,350 ha Waituna Lagoon

Living Water is working in partnership with others to trial catchment wide approaches to reducing nutrients and sediments entering the lagoon and its waterways and improving habitat for threatened species.

Map 1st Edition - OCTOBER 2020

The Waituna Lagoon and nearby wetlands are internationally recognised under the Ramsar Convention on wetlands. The lagoon and catchment are also sites of cultural importance to Ngāi Tahu.

In the last 100 years, large parts of the Waituna catchment were drained and converted to pasture for farming. Waterways in the catchment have continued to be modified for agriculture, and Waituna Lagoon is periodically drained by opening it to the sea to keep the farmland dry. Ill-timed opening, in conjunction with large amounts of contaminants washing into the lagoon from farmland, impact its ecological health, as well as the cultural and recreational values the lagoon provides to the community.



LIVING WATER is a 10 year partnership between the Department of Conservation and Fonterra, focussed on finding game-changing and scalable solutions that will enable farming, freshwater and healthy ecosystems to thrive side by side.

We are working across five regions.



# LIVING WATER



[www.livingwater.net.nz](http://www.livingwater.net.nz)

Whakamana te Waituna

### Whakamana Te Waituna partnership

Whakamana Te Waituna is a partnership between Ngāi Tahu, Awarua Rūnanga, Southland District Council, Environment Southland, DOC and Fonterra. These partners have been working collectively in the Waituna catchment, alongside the community, since 2011.

**Progress:** In 2018 the partnership received Central Government funding to meet key objectives, including enhancing the role of mana whenua to be kaitiaki over the lagoon and catchment as well as reducing nutrient pollution and managing the lagoon openings to maximise ecological health.

Living Water is leading several workstreams within Whakamana Te Waituna including the development of a planning, monitoring and evaluation framework, a catchment wide nutrient reduction programme and the restoration of Waituna Creek.

### Partnering on Nutrient Reduction

Over the last decade, a substantial amount of work has been done on nutrient management in the catchment. Most recently, we led a contaminant strategy to reduce nutrient loadings to the lagoon while also enhancing biodiversity, mahinga kai opportunities and meet community and cultural expectations.

**Progress:** The Contaminant Strategy looked at a range of on and off-farm scenarios to reduce contaminant loadings to the lagoon. The results of this work showed that a combination of individual and collective approaches may strike the right balance between cost and effectiveness. We're now in the process of talking to the community about this strategy before settling on a final course of action.

### Using Physiographics Information

In 2016 we commissioned Land & Water Science Ltd to undertake a desktop 'physiographics' project to map the different pathways water takes over land and through the ground. It shows the architecture of water and contaminant flows under different conditions and gives landowners a better understanding about where best to put contaminant management interventions. Integrating this information into the Fonterra Farm Environment Plans in Waituna allows the Sustainable Dairying Advisors and Farmers to make better decisions.

**Progress:** The mapping and reporting has been completed, we are using this information to show us where to trial our other tools like Peak Run Off Control and planting critical source areas.



Community members, including landowners, school children, and partnership staff have participated in several planting days on Fonterra farms. More than 20,000 plants have been planted on eight Fonterra farms to help build biodiversity corridors and intercept contaminants before they get into waterways. This will help vulnerable native species.

Planting for biodiversity & water quality

#### On Farm Trials and Demonstrations

We worked with NIWA and DairyNZ to trial biofilters on a farm to reduce nitrogen and phosphorus. We held demonstrations to let local farmers learn about Fine Particle Application (FPA) of fertiliser which can lead to the same amount of grass growth using less fertiliser.

**Progress:** The biofilter trial was completed in 2018 and showed mixed results. The filters were able to significantly reduce the concentration of nutrients at base flow but were less effective at high flows. Following the FPA demonstration we commissioned AgResearch to review the data on FPA collected from around NZ with promising results. Fonterra is working with the fertiliser industry on next steps for the use of this method.

#### Lower Waituna Creek Transformation Project

Waituna Creek is a modified agricultural stream that has had some steep rebattering work done in the past to help stabilise the banks. Unfortunately this method on its own has also removed much of the habitat for fish. Living Water has worked closely with DOC and Environment Southland to reshape the banks for planting and shading, designed and built a two stage channel to create flow variability and flood capacity and used logs and bundles of manuka anchored to the stream bed to increase habitat for our freshwater friends.

**Progress:** To increase native biodiversity we created shade and habitat for insects and fish - using logs and bundles of manuka, and extensive riparian planting. Stream surveys one year later in March 2019 showed positive early results and reduced erosion from successful re-profiling. A Phase-2 plan is being developed to expand the habitat trials, in consultation with the local community.

#### Peak Run Off Control Structure Trial

Peak run-off control structures are being trialled in the Carran Creek catchment where small dam-like structures are built in drains to temporarily pond water, providing more time for contaminants to drop out before being carried downstream, and lessen the intensity of flows to reduce bank erosion.

**Progress:** We built four structures in 2020/21 to test the function. Based on results of how the structures function, we hope to expand this to a larger sub-catchment trial.

**Australasian Bittern / Matuku** - are classified as a critically threatened species. They depend on wetlands for food and habitat and are sometimes seen on farmland where wetlands have been protected. Restoring wetland habitat will help protect this vulnerable species.

**Giant Kokopu** - endemic to New Zealand and are in decline, and **Koura** - native fresh water crayfish also in decline.

Waituna is a national stronghold for Giant Kokopu because of the habitat the Lagoon and wetlands provide. We have found lots of koura in our fish surveys too - sometimes they are bright blue! We hope that both of these species populations will increase with the instream habitat added to Waituna Creek.



# Fact Sheet: Waituna Lagoon Catchment

July 2021



## About the area

Waituna Lagoon is 40km east of Invercargill and is part of the 20,000 hectare Awarua Waituna Wetland catchment. This coastal lagoon and surrounding wetland (an area of 3,500 hectares) was designated a Ramsar Wetland of International Importance in 1976. The Ramsar Convention is an intergovernmental treaty providing the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources.

The cultural significance to the local Ngāi Tahu people was recognised under a Statutory Acknowledgement with the Ngāi Tahu claims Settlement Act 1998. The lagoon and wetland have also been a source of food and recreation for the wider community including fishermen, hunters and trampers over many generations.

The wetlands provide habitats for a rich array of native wildlife and are a nationally important site for migrating wading birds. They are also home to a range of threatened species such as the Australasian bittern and are an important area for mahinga kai.

## The challenge

In Awarua Waituna there has been a significant loss of wetland, freshwater ecosystems and lowland habitat. Water quality is poor due to high levels of suspended sediment and nutrients (phosphorous and nitrogen). Much of this has been caused by various productive land uses in the catchment and the modification of the waterway, wetland and lagoon hydrology for drainage purposes.

## Working in partnership

Living Water is working within the Whakamana Te Waituna Partnership to improve the health of Waituna lagoon - ensuring the wellbeing of the people, the land, the waters, the ecosystems and the life-force of Waituna.

Living Water's key focus is designing and implementing a catchment-wide nutrient and sediment management approach, with the main goal of slowing the flow of water to decrease contaminants and build freshwater habitat.

Projects include trialling a nutrient and sediment reduction approach at a sub-catchment scale, developing detailed Farm Environment Plans for all 43 Fonterra farms in the catchment; and implementing the Lower Waituna Creek Transformation Project as a demonstration site.

## At a glance

- 70% converted from wetland and native bush to agricultural land over the past 150 years
- 80+ different species of bird in the wetland complex
- 130 properties in the catchment
- 5 main types of farming (arable, forestry, sheep, beef and dairy)

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