PŪKOROKORO-MIRANDA

HAURAKI - FIRTH OF THAMES / TĪKAPA MOANA

CATCHMENT AREA 6,000 ha

Site focus: Restoring and reconnecting a rural freshwater ecosystem and sensitive coastal environment using a community-led 'mountains to sea' approach

Map 1st Edition - JULY 2021

The Pūkorokoro-Miranda catchment flows into an internationally significant 8,500 hectare coastal wetland that is protected under the Ramsar Convention and is home to around 40 different migratory birds.

The shorebirds rest and refuel in the mudflats, with some having come as far as Siberia and Alaska.

Activities on the land has resulted in increasing amounts of sediment reaching the coastal area. The sediment smothers marine life which is the food source for the shorebirds, and encourages mangroves to grow, further invading their habitat.

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

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Department of Conservation Te Papa Atawhai

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Increasing wildlife habitat areas in a farming landscape

Coastal habitat at Pūkorokoro-Miranda has been reduced in size and degraded in quality, impacting on shorebirds and estuarine and freshwater wildlife. Living Water supported a project to trial effective ways of identifying, acquiring, and restoring suitable land to increase estuarine and freshwater wildlife habitat, without adversely impacting the drainage or productivity of adjoining farms.

Progress: *In 2018 DOC purchased 19.6ha of farmland to become reserve land. Living Water and local partners worked together to establish a community-led trust who will manage the reserve.*

Incubate: Establishing a public trust

To formally establish a community trust which would control and manage the restoration of the reserve, Living Water piloted a new collaboration best practice model called "Incubate" - involving Ngāti Paoa (and other iwi interests), Pūkorokoro Miranda Naturalists Trust (PMNT), Western Firth Catchment Group, Te Whangai Trust, Dalton Family Trust, Ecoquest, a community representative, DOC, and Living Water. An independent facilitator carried out one-on-one interviews to identify the participants' social, environmental and cultural aspirations. Based on this shared values, mission and vision statements were agreed upon.

Progress: *Meetings were held monthly for 18 months. Tiaki Repo Ki Pūkorokoro Trust was established in 2019, and enabled ongoing development of the restoration plan. Living Water also introduced an MOU (Memorandum of Understanding) that it had adapted from a collaborative project in Northland called a Mana Enhancing Agreement. It is different to a regular MOU in that it seeks to build the mana of all signatory parties.*

Building International Linkages

Annually, Living Water funds Pūkorokoro-Miranda Naturalists Trust (PMNT) to survey and monitor the migration of wading birds across the East Asian Australasian Flyway (Pūkorokoro-Miranda, North Eastern China, Korean Peninsula). Restoration work at Pūkorokoro-Miranda has been effective at improving wading bird habitat and food sources, however, the birds also need guaranteed shelter and food sources while migrating annually through China. PMNT's involvement and successful relationship building has been a major contributor to DOC's progress on discussions with Chinese authorities on formal ecosystem protection initiatives.

Progress: *An agreement between DOC and the Chinese Forestry Commission to protect areas of intertidal habitat in North Eastern China was signed at Pūkorokoro Miranda in 2015.*

Hydrological investigation

Living Water has completed a range of hydrological studies since 2013 to understand how to improve the environment for wading and shorebirds.

Progress: *Information from these studies has informed the majority of our work in the catchment as well as future plans for long-term solutions like large scale wetlands and improved drainage.*

To Auckland →

Predator Control Strategy

To make real improvements to freshwater and biodiversity, all landowners need to be involved. As many properties in the catchment are smaller lifestyle blocks they don't require a full Farm Environment Plan, but because they tend to be in the steeper areas around the catchment headwaters they are a significant source of sediment from erosion. Possums, rats and mustelids are a threat to native bush remnants and pasture, crops and fruit trees and a survey showed landowners supported predator control. We used this to engage landowners that may not have been interested in environmental activities to build trust and credibility for other activities like fencing waterways and retiring steep land in the future.

Progress: *A community workshop was held in a woolshed late 2019 and was attended by about 100 landowners. After the workshop, A12 possum traps were rolled out and have been monitored for effectiveness. New AT220's are also being trialled.*

Catchment Condition Survey

In 2017 we did a baseline ground survey (called Catchment Condition Survey) of all the properties in the catchment, looking out for key water quality and ecological issues.
This information shows us where to prioritise interventions which we can then test. If they are successful we can cost them for others to use. A major benefit of this survey is it's relatively cost effective and easy to repeat for measuring change.

Progress: *Information from this survey has been used as the starting point for the CAPTure tool.*

Mountains to Sea Project

We've been supporting the Western Firth Catchment Group Trust, established in 2016, with an integrated catchment management approach from the 'Mountains to Sea', Progress: accelerated delivery of Farm Environment Plans and funding prioritised actions to collectively improve water quality and biodiversity

CAPTure Tool

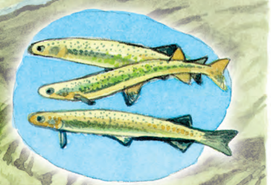
The Catchment Action Prioritisation Tool (CAPTure) is a spatial GIS-based model that brings together data from a range of sources including the catchment condition survey, land-use, and soil type, making it is easier for landowners to understand, visualise and make decisions about the best water quality mitigations to implement.

Progress: *Recommendations from CAPTure were put into landowner's Farm Environment Plans (FEPs) like planting poplars to combat erosion, creating detention bunds to manage sediment, and fencing/planting natives across streams.*

Inanga Spawning

Living Water undertook a series of waterway surveys across all the subcatchments to identify potential **Inanga** spawning habitat. Trials with strawbales were run in an attempt to create artificial habitat, engaging local schools and the community in the process.

Progress: *Although the relatively large numbers found in the sampling suggests Inanga are spawning, none of the strawbales trials were successful.*



Miranda Road

Kaiaua Road

Kaiaua

Pūkorokoro Miranda Shorebird Centre

East Coast Road

Tiaki Repo Ki Pūkorokoro Trust restoration plan area

Miranda Road

Robert Findlay Wildlife Reserve

Walking Track & Hide

Living Water funded a major upgrade of the Pūkorokoro Miranda Naturalists Trust walking track from East Coast road to the bird viewing hide, to make it wheelchair accessible.

NORTH

Firth of Thames

Drainage intervention - bypassing the reserve during floods

An alternative to the existing drainage of deep, low-land drains is being considered by the local landowners and other stakeholders. This scheme will allow flood water to bypass the new reserve to reduce the risk of flooding farmland upstream. An ideal outcome would be to create a constructed wetland to catch sediment and nutrients that would otherwise enter the Firth of Thames. Plus with managed inundation of tidal waters these ponds would be used as shorebird habitat and inanga spawning habitat.

Progress: *Landowners are currently working with Waikato Regional Council, DOC, and PMNT, to create a channel that will bypass the reserve in peak water periods and flush the floodwaters out.*

Coastal Wildlife habitat restoration

Since 2013 Living Water has supported the on-going restoration and management of the coastal land along East Coast Road through predator control, plant pest control (including fennel management trials), revegetation planting, and formalising land retirement / management options.

Bar tailed godwits (Kuaka) *Front* and **Red Knots (Huahou)** *Rear* are among the Arctic migrant species that visit Pūkorokoro-Miranda. In excess of 4000 Godwits and 1000 Red Knots visit each year. Each autumn, they leave New Zealand, flying to the tundra of Eastern Siberia and Alaska via the East Asian-Australian Flyway. There they breed, raise their chicks, and then return to our shores.