# ARARIRA / LII

## TE WAIHORA / LAKE ELLESMERE

**CATCHMENT AREA** 6,600 ha
76km of council drains
Approx. 75km of private drains

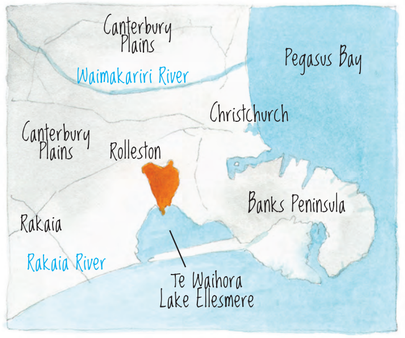
**Living Water is trialling approaches in this rural catchment to transform the drainage network into a healthy freshwater ecosystem**

Map 1st Edition - MAY 2020

The Ararira/LII catchment is a small and intensively farmed part of Te Waihora.

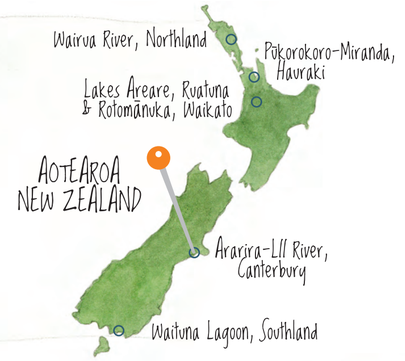
The catchment was once mostly wetlands with lots of groundwater bubbling up though springs. Now there is an extensive drainage network to keep the water off the farmland and flowing into Te Waihora.

The problem is the network of waterways have usually been seen as a way to drain water off the land but they are the majority of remaining waterways across the catchment, while their water quality is poor, they provide habitat for aquatic insects and fish.




**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

Fonterra Dairy for life

Department of Conservation Te Papa Atawhai

www.livingwater.net.nz

## Te Mana Ararira partnership

We are working with Te Taumutu Rūnanga to build capacity and capability for mana whenua to rejuvenate the mauri of Te Waihora.

**Progress:** *In 2018 we established the Te Mana Ararira Advisory group, a specific forum that allows us to engage proactively with mana whenua.*

*A cultural health assessment of waterways from Lincoln to the Lake was completed in October 2019, a second one will be carried out in 2023.*

## Partnering on Waterways

We are working with Selwyn District Council and Te Taumutu Rūnanga to redesign how drains are managed. This new approach to management will continue to provide landowners with drainage and will also allow Iwi and the wider community to reconnect with a healthy freshwater environment.

The University of Canterbury is supporting our work with catchment wide water quality monitoring and advice on alternative drain management approaches.

**Aim:** *By trialling alternative approaches to managing classified drains as waterways across a whole district we hope to develop a 'recipe' that other councils around New Zealand can use.*

Blue lines indicate drainage network
Blue dots indicate water monitoring sites

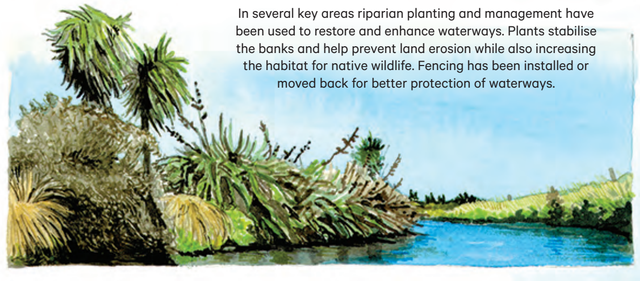
## Waterway Management Trials

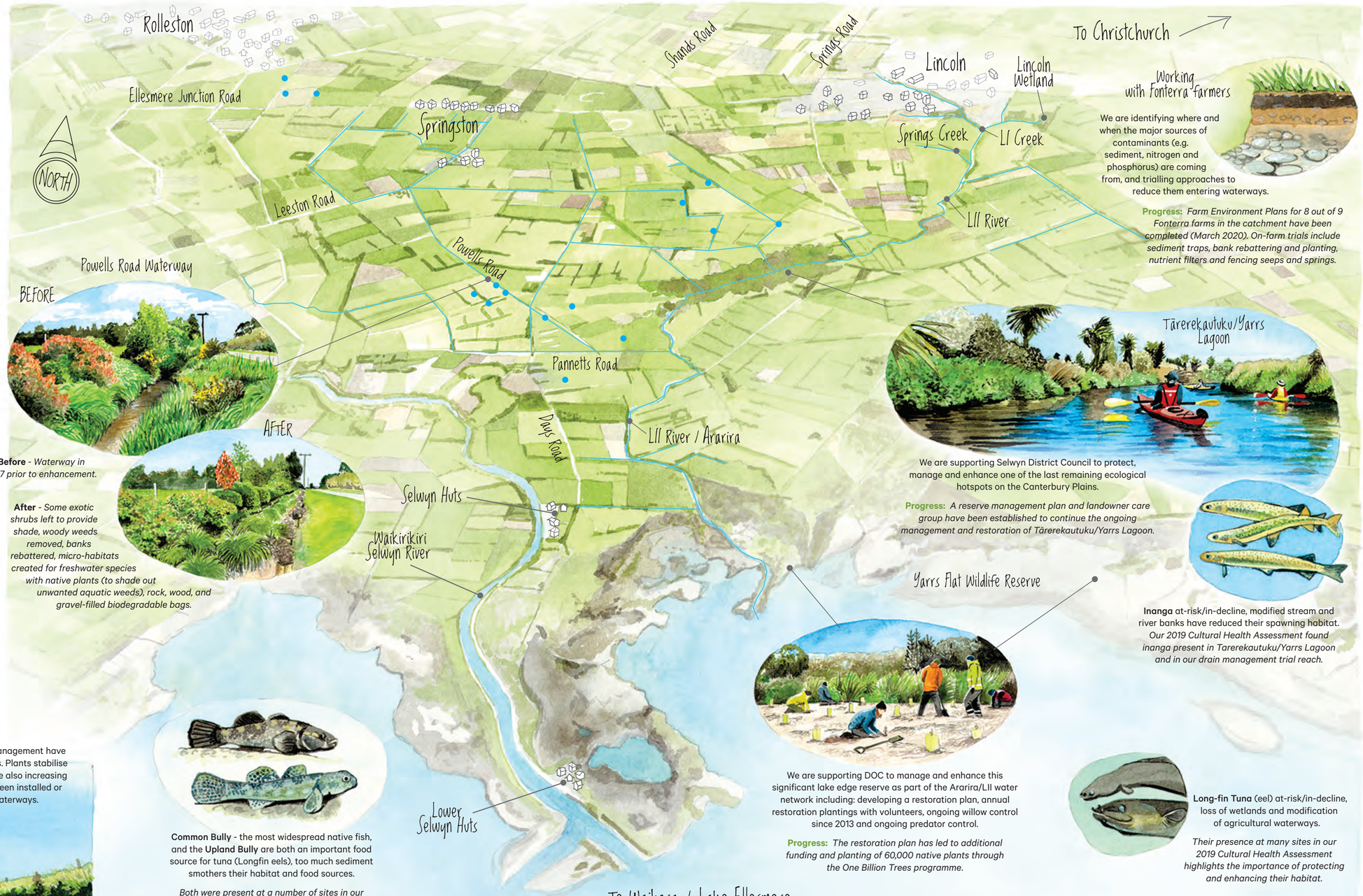
Current waterway management uses diggers and tends to release large amounts of sediment and destroy habitat for native animals. We are trialling a few different ways of rebattering, planting, creating flow variability and tools such as sediment traps to improve water quality, increase habitat for wildlife, allow access to mahinga kai and reduce the need for mechanical clearance.

**Progress:** *Trial area established along approx 4km of drains/waterways. A 2019 survey in our trial reach saw an increase in the number of fish (compared with 2017 baseline survey), as well as the abundance of native vegetation water quality clarity and habitat improvements while still providing drainage.*

## Riparian plantings & Fencing

In several key areas riparian planting and management have been used to restore and enhance waterways. Plants stabilise the banks and help prevent land erosion while also increasing the habitat for native wildlife. Fencing has been installed or moved back for better protection of waterways.






**Before** - *Waterway in 2017 prior to enhancement.*

**After** - *Some exotic shrubs left to provide shade, woody weeds removed, banks rebattered, micro-habitats created for freshwater species with native plants (to shade out unwanted aquatic weeds), rock, wood, and gravel-filled biodegradable bags.*



**Common Bully** - the most widespread native fish, and the **Upland Bully** are both an important food source for tuna (Longfin eels), too much sediment smothers their habitat and food sources.

*Both were present at a number of sites in our 2019 Cultural Health Assessment.*

## Working with Fonterra Farmers



We are identifying where and when the major sources of contaminants (e.g. sediment, nitrogen and phosphorus) are coming from, and trialling approaches to reduce them entering waterways.

**Progress:** *Farm Environment Plans for 8 out of 9 Fonterra farms in the catchment have been completed (March 2020). On-farm trials include sediment traps, bank rebattering and planting, nutrient filters and fencing seeps and springs.*




We are supporting Selwyn District Council to protect, manage and enhance one of the last remaining ecological hotspots on the Canterbury Plains.

**Progress:** *A reserve management plan and landowner care group have been established to continue the ongoing management and restoration of Tārerekautuku/Yarrs Lagoon.*



**Inanga** at-risk/in-decline, modified stream and river banks have reduced their spawning habitat. *Our 2019 Cultural Health Assessment found inanga present in Tarerekautuku/Yarrs Lagoon and in our drain management trial reach.*

Yarrs Flat Wildlife Reserve



We are supporting DOC to manage and enhance this significant lake edge reserve as part of the Ararira/LII water network including: developing a restoration plan, annual restoration plantings with volunteers, ongoing willow control since 2013 and ongoing predator control.

**Progress:** *The restoration plan has led to additional funding and planting of 60,000 native plants through the One Billion Trees programme.*



**Long-fin Tuna** (eel) at-risk/in-decline, loss of wetlands and modification of agricultural waterways.

*Their presence at many sites in our 2019 Cultural Health Assessment highlights the importance of protecting and enhancing their habitat.*