

Our progress 2022/2023

LIVING

WATER



**35,000
ha**

We are working with farmers, scientists, councils, mana whenua and local communities across 35,000 hectares in five catchments around New Zealand

98%

of Fonterra farms in Living Water catchments have Farm Environment Plans

90% in 2022

50%

of Fonterra farmers in Living Water catchments are implementing freshwater improvement actions over and above regulations

50% in 2022



70

projects underway or completed

44

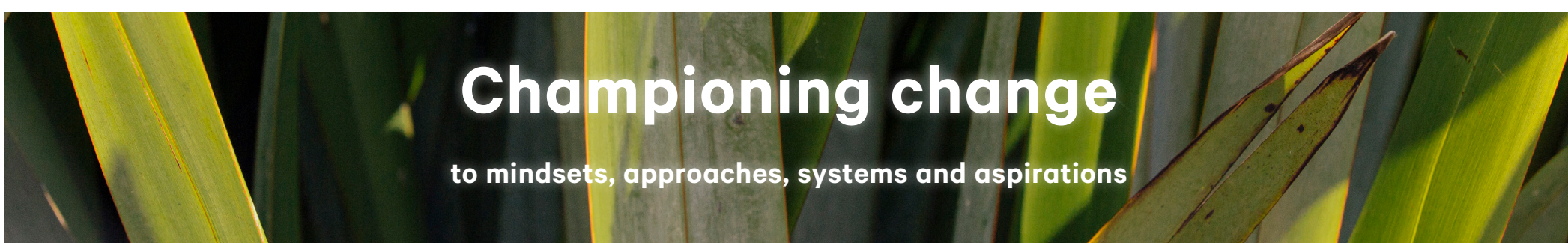
trials to see what can be scaled to improve freshwater

17

solutions that have been scaled or are being used by others

30

case studies completed about our trials



60

partners and groups we're working with to improve freshwater

3483

social media followers across all platforms

up from 2506 in 2022

12

projects supporting iwi and hapū as kaitiaki and integrating mātauranga māori

\$18m

additional funding leveraged for freshwater projects since 2013

Catchment highlights

2022/2023



Wairua River/Te awa o Wairua, Northland

Sediment and nutrient reduction: The Waimā Waitai Waiora partnership has completed its freshwater improvement funded project to reduce sediment entering the Wairoa River. 60kms of fencing and 395,000 native plants have been planted over the five years of the project. The Kaipara Moana Remediation (KMR) programme will continue to build on this work, with a longer-term plan to reduce the amount of sediment reaching the Kaipara Harbour by 50%.

On-farm support: Living Water also completed its support for on-farm activities in the Okarika pocket, with 16 of 17 Fonterra farms in the pocket now having a Farm Environment Plan, fencing of 15km of waterways and riparian planting along 11km of waterways.

Mātauranga Māori: The Waima Waitai Waiora partnership will continue, led by Ngā Kaitiaki o Ngā Wai Māori. The hapū collective received funding from the Ministry for the Environment Te Mana o Te Wai fund to increase capacity for hapū to participate within the partnership and develop their Kaitiaki network.

Pūkoro-Miranda, Hauraki

Sediment and nutrient reduction: The Western Firth Catchment Group have been working to create a green corridor from mountains to sea involving fencing, planting and predator control. With help from Living Water, the catchment group has supported landowners to fence 43km and increase native vegetation along 11km of waterways.

Partnering for progress: The Tiaki Repo ki Pūkoro Trust was established in 2019 to manage farmland purchased to expand critical shorebird habitat named the Repo ki Pūkoro coastal wetland reserve. The trust, made up of community members has written a restoration plan which successfully secured a bid to the DOC community fund for a \$295,000 grant for restoration. An application for funding for hydrological monitoring of the reserve was recently accepted by the Ministry for the Environment.

The Trust and The Nature Conservancy (TNC) have an in-principle agreement to further explore the Repo ki Pūkoro to be used as a study site for their blue carbon research initiative. DOC and Hauraki District Council continue to explore opportunities for the creation of a coastal wetland and how to manage drainage that flows through and around the reserve.



Lakes Areare, Ruatuna and Rotomānuka/Ngā roto o Areare, o Ruatuna, o Rotomānuka, Waikato

Sediment and nutrient reduction: The Manga-o-tama Ōhaupō Peat Lakes to Waipā River Connection project is aiming to reduce sediment and nutrient inputs into the Waipā and Waikato Rivers. So far the project has planted 10,500 natives on farm, installed 3km of fencing and 92% of Fonterra farms in the catchment now have a Farm Environment Plan.

The project has received additional support from Waikato Regional Council. It is proposed that a further 28,000 plants and 3.5km of fencing will be completed over the next 6 months.

Mātauranga Māori: Eleven varieties of harakeke/flax are thriving in the Pā harakeke rongoā education trail run in collaboration with Ngāti Apakura at Lake Ruatuna. Interpretation boards have been created and installed to provide information for visitors about the gardens and their significance to local iwi.

A Mokihi - named after the traditional rafts of similar construction - was trialed as an organic alternative to a floating wetland. It was constructed out of raupō leaves and harakeke flower stalks by Rama Kete, Pita Te Ngaru and Janaya Waitere of Ngāti Apakura. The Mokihi was launched in the sediment ponds of Lake Ruatuna in October 2022 after being planted with Carex plants to help remove sediment and nutrients from the water. The mokihi is now breaking down as intended, but is remaining stable and buoyant enough for the Carex to root. Rama and others are exploring future possibilities for mokihi.



Ararira-LII River/Te awa o Āraiara, Canterbury

Catchment scale change: Our work with Te Taumutu Rūnanga, Selwyn District Council, LII Drainage Committee and Environment Canterbury to reimagine how lowland waterways can be managed resulted in the completion of a catchment management plan (CMP). The CMP outlines how the Ararira/LII Drainage network can be managed differently to enhance biodiversity and cultural outcomes while also providing effective drainage. The project also co-designed a guide to support the implementation of the CMP. The guide identifies organisational and institutional changes, funding options and delivery arrangements that are needed to bring about change. The plans have gained support from across the organisations involved and Selwyn District Council has adopted the approach for developing plans for other catchments in the district.

Partnering for progress: Living Water supported the development of a restoration plan for Tārekautuku/Yarrs Lagoon, one of the last remaining biodiversity hotspots on the Canterbury Plains. Being plan ready resulted in Selwyn District Council securing almost 800K from Ministry for the Environment to complete restoration activities in the lagoon over the next three years.



Waituna/Waipārerā, Southland

Sediment and nutrient reduction: Through the collective efforts of the Whakamana Te Waituna partnership, a 3ha site has been selected for the trial of a wetland designed specifically for nitrogen removal. Construction is being targeted for early to mid-2024.

On-farm action: Through the combined efforts of Living Water and Whakamana Te Waituna, 25,500 native plants were planted on farms, and 48 farm plans were created in the catchment. The plans outline key/good management practices. Farm plan follow-ups are being progressed by Fonterra as business-as-usual across Waituna and the wider Southland region. Waituna farm plans will be updated into Fresh Water Farm Plans in the coming 12-18 months. A subsidy was provided to farmers to protect biodiversity on private land, resulting in the installation of 3km of fencing to protect seven hectares of forest remnants.

Catchment scale change: Completed a cost benefit analysis of three different approaches to the restoration of Waituna Lagoon and surrounding catchment. The analysis showed that despite significant up-front costs, catchment-level interventions are likely to be more beneficial than farm-level interventions in the long-term with the largest benefits coming from land purchase/land retirement. This supports planning for, and investing in, catchment level interventions (such as wetlands) to better achieve outcomes.



National impact projects

2022/2023

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WATER



Farming with Native Biodiversity

In June 2023 we completed the two-year Farming with Native Biodiversity pilot, a project led by the NZ Landcare Trust and supported by Living Water, Silver Fern Farms and the BioHeritage National Science Challenge/Ngā Koiora Tuku Iho, with funding from the Ministry for Primary Industries.

The pilot developed resources including a [website](#), podcasts, e-learning modules and links to a range of other information that are now available nationally to support farmers and farm advisors to identify, enhance and restore biodiversity on farm.

The pilot supported three ecologists who worked with 40 farms to create farm biodiversity management plans, with a total of 224 individual biodiversity management projects identified including: 34 wetlands, 29 forest remnants, 63 riparian margin restorations, and 45 new planting projects. The pilot also worked closely with Fonterra's Sustainable Dairying Team to develop e-learning and resources that will be integrated into Fonterra's Tiaki sustainable dairying service.

Understanding the economics of lowland waterway restoration

In 2023 we initiated a project to assess the costs and benefits of restoring Aotearoa New Zealand's lowland drainage networks at a national scale. Through much of our work to date it has become clear that there isn't a good understanding of the costs and benefits of large-scale restoration and the potential future costs of not acting. This is a nationwide problem, with landowners and rural water network managers grappling with how to improve management practices and fund work to restore the natural function to these lowland waterways. This is becoming increasingly important in the face of climate change and building resilience into rural landscapes. We hope this information will be useful for those making investment decisions to reverse biodiversity decline and meet climate and nature obligations.

The project involves estimating restoration costs at a catchment level using the [Ararira-LII catchment](#) as the example, and then scaling up these results to the national level using cost and benefit transfer functions. The study will identify and value the benefits of the restoration programme and conduct a Social Cost Benefit Analysis (CBA) to evaluate the economic viability of the programme from a whole-of-society point of view. The study will also factor in the social and change management aspects that often get left out of projects that cost environment restoration. This is critical to include as the social process is fundamental to achieving any change for the environment.

We hope to have results by December 2023.

LandscapeDNA

We have been supporting the development of LandscapeDNA to provide better spatial landscape data for land stewards. Water composition and quality varies widely between regions and catchments around New Zealand, even where there are similar land uses and pressures on the surrounding land. This is due to the influence of natural landscape features, which can account for more than twice the variability in water quality than land use alone. Physiographic science works 'backwards', using water composition to trace the water's journey back through the landscape to understand the landscape controls over water composition, and hence quality.

The physiographic approach has been further developed by Land & Water Science Ltd into the [LandscapeDNA website](#), where a range of next-generation datasets and spatial information has been compiled into one platform. The website explains the science behind the mapping and includes an actions section that identifies what on-farm actions and mitigations are recommended based on the physiographic environment.

LandscapeDNA information can be integrated into farm environment plans to support on-farm actions and understand how contaminants move through the water system. The LandscapeDNA team has also done an incredible amount of outreach to farmers, catchment groups, regional councils and government. The next stage of LandscapeDNA is looking to provide automated reporting that will empower landowners to make their own decisions on how to manage their land.



Remediating fish barriers on farm

New regulations for freshwater now include a focus on barriers to native fish. There is a lack of targeted information, advice and support for farmers and farm advisors about fish barriers and how to ensure fish passage is provided for on farm. In 2023 we initiated a project with Taranaki Regional Council and the National Institute of Water and Atmospheric Research (NIWA), along with the support of the NZ Fish Passage Advisory Group, to identify common fish barriers on farms and carry out works to remove, replace or remediate on-farm structures to improve fish passage. This work will be developed into videos, case studies and supporting "how to" guides in 2024. The project will also investigate options to incorporate fish passage remediation into on-farm extension programmes and Farm Environment Plans.