



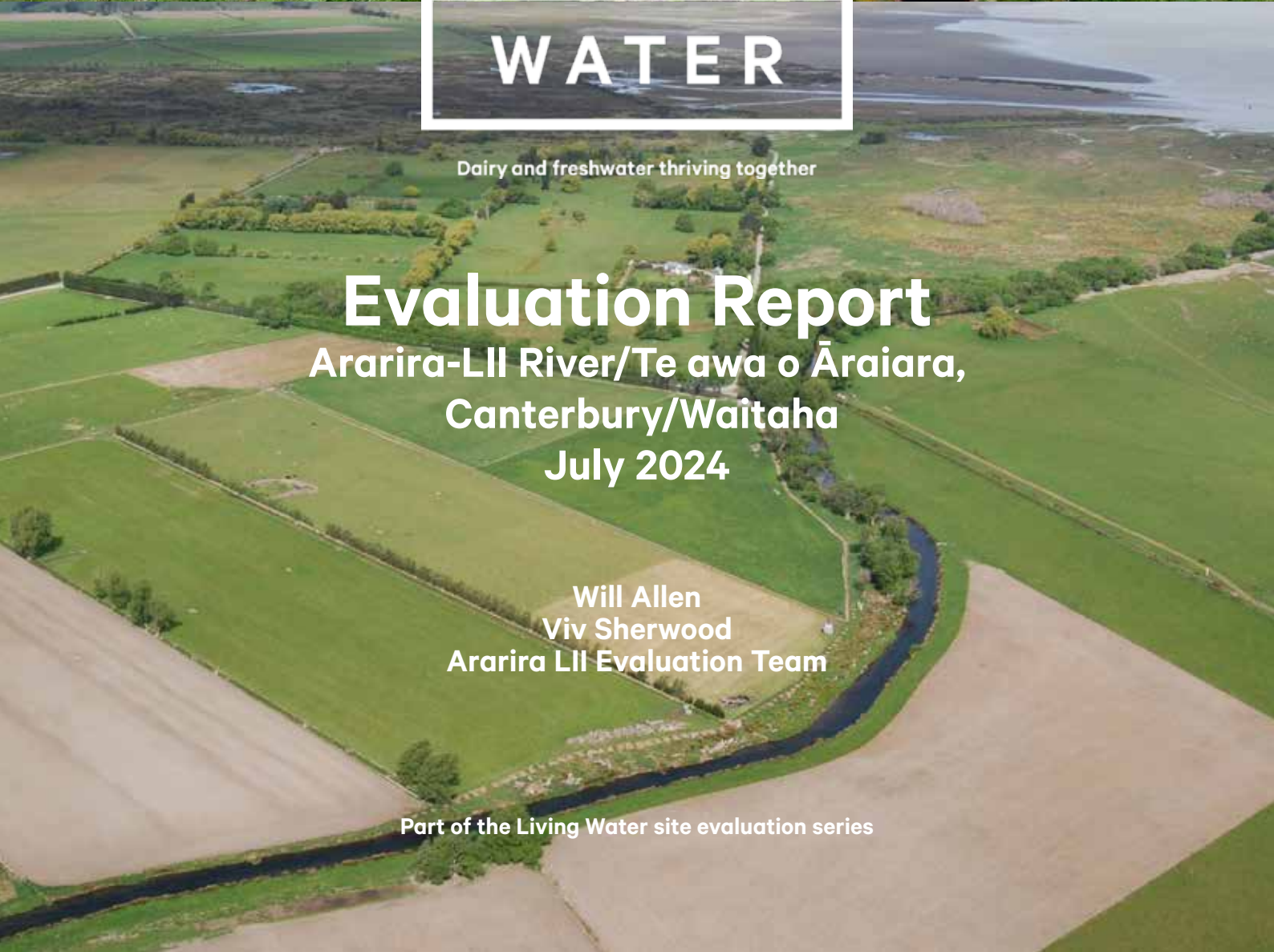
# LIVING WATER

Dairy and freshwater thriving together

## Evaluation Report Ararira-LII River/Te awa o Āraiara, Canterbury/Waitaha July 2024

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Part of the Living Water site evaluation series





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**Note:** Will Allen and Viv Sherwood have been involved in the monitoring and evaluation activities of the programme through the initial M&E design phases, and more recently in the development and implementation of this final evaluation phase. Additionally, Will Allen was a co-design facilitator for the Ararira LII waterway network redesign group and a contributing author to the Ararira LII Implementation Guide content.

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# Executive summary

## Introduction

The Ararira LII River/Te awa o Āraiara programme, part of the Living Water partnership between the Department of Conservation (DOC) and Fonterra, aimed to enhance the health and sustainability of the Ararira LII River catchment within a productive agricultural landscape. This evaluation, intended for the primary audience of programme stakeholders and partner agencies, assesses the programme's impacts and development through a participatory and complexity-aware methodology. The report's layout facilitates a comprehensive understanding and constructive reflection on the programme. It highlights insights, challenges, and lessons gained over the 10 years of the programme. Recommendations suggest attention needs to be paid to key areas such as strengthening inter-agency collaboration processes, diversify capability and capacity, placing more emphasis on evaluation and adaptive management, leverage co-benefits, and integrating technical innovations into adaptive management.

This evaluation employs a performance story approach, which integrates key partners in collaborative activities to assess the programme's outcomes and impacts. Chapter 1 outlines the evaluation framework and sets out the programme context and development over time. Chapters 2 and 3 build on the programme's Theories of Change (ToC) and logic model structure to provide a holistic perspective on activities and outcomes.

Chapter 4 focuses on key areas to explore insights, challenges, and lessons learned, presenting them in a way that supports non-personal, facilitated discussions. Finally, Chapter 5 provides a performance summary and offers strategic recommendations to guide future work in similar contexts.

Importantly, this evaluation is not intended to conclude with these reports but to serve as a background document for facilitated discussions, helping stakeholders move forward. The reports have been designed with this use in mind, aiming to support discussions with programme partners and local communities, using the findings and insights to foster continued progress and adaptation.

## Visualising the programme

Chapters 2 and 3 provide framings that enable the evaluation team to look across the individual activities and view the operation of the programme as a whole. The programme's ToC serves as a guide illustrating the process and rationale behind its expected impact, linking activities and outputs to desired outcomes, and serving as a guide for strategic planning and execution.

**Chapter 2** begins with a brief overview of the governance and management of the Living Water programme, detailing the structured approach that underpins its operational success. It then illustrates the programme's various contributions and resources (inputs) and the scope and reach of the activities and outputs. These contributions, alongside the range and reach of activities and outputs delivered, are illustrated through two different

lenses. In the “Activities and Outputs” section, we acknowledge those who have been involved in the programme. This highlights the range of engagement and partnerships, as well as the contributions made by the different participants. This acknowledgment serves as a testament to the collaborative spirit of the programme and a recognition of the diverse expertise and resources that were brought together to achieve common goals. We then detail the activities that were undertaken, and the immediate results obtained (outputs). Activities encompass restoration support for Yarrs Flat Wildlife Reserve and Tārerekautuku/Yarrs Lagoon, on-farm initiatives, research and trials aimed at enhancing the water network, and various strategic partnerships, and research, as well as monitoring and evaluation efforts. This chapter concludes with metrics that reflect the programme’s achievements and underscore the tangible impact of collective efforts towards environmental sustainability.

**Chapter 3** highlights the impact of the Ararira LII programme and examines who and what has changed over the course of the Living Water programme. Recognising that environmental change is a long-term endeavour, with desired state changes often taking 15–20 years or more to materialise, this chapter outlines the changes the programme has contributed to so far. These changes are presented in two different ways. Firstly, a results table offering a quick snapshot of progress based on the programme’s 2018 logic model. Outcomes are then grouped by themes that represent the drivers and enablers of change within the wider human and ecological systems: organisational changes, relational changes, ecological changes and valuing the environment, capability, and capacity changes (particularly social and organisational), financial investment, and scaling up and out. This strategic theme categorisation not only facilitates a structured analysis of the programme’s impact but also highlights the multifaceted nature of environmental change, emphasising the importance of a holistic approach to catchment management.

## **Insights, challenges, and lessons**

**Chapter 4** looks at three different aspects of the programme to support a reflective view of its overall impact and processes. It focuses on identifying insights, challenges, and lessons – elements commonly found together, but not always addressed, in complex programmes. The co-benefits identified are the additional positive outcomes that arise from a single programme activity, often spanning different areas of impact. Understanding co-benefits illustrates how integrating activities across various work areas has broadened our impact.

Through a reflective lens, we examine the insights and lessons derived from this programme, viewing challenges and surprises as catalysts for deeper learning, flexibility, and adaptation, acknowledging that challenges are often hard to write about. This chapter doesn’t aim to provide an exhaustive overview but rather to spotlight specific initiatives that embody the programme’s holistic and participatory ethos. These insights, challenges, and lessons draw from a collective assessment, offering valuable perspectives

on the programme's effectiveness and its potential guidance for future land and water management projects. The three key areas address the following aspects:

- **Focusing on ecological wins:** The Tārerekautuku/Yarrs Lagoon restoration underscores the importance of targeted ecological initiatives. Co-benefits include enhanced habitat for indigenous species, improved community relations, and effective weed and pest control. Insights emphasise the importance of collaboration, community involvement, and strategic funding.
- **Scaling up:** Moving from trials to redesigning catchment waterways: The waterways network redesign project highlights the integration of ecological and cultural values within lowland waterway management. The development of the Catchment Management Plan (CMP) and Implementation Guide (IG) provides a replicable model for other lowland catchments. Key insights include the benefits of co-design and the necessity of a long-term strategic approach based on understanding systemic connections.
- **Building capacity and capability:** The Ararira LII programme has enhanced the capacity and capability of various catchment groups, improving skills and knowledge within the Living Water team and solidifying a partnership with the Selwyn District Council. Challenges include integrating social skills into technocentric frameworks and bridging knowledge gaps. The programme's focus on capacity building has improved technical and ecological understanding, fostering collaboration and innovation for future environmental stewardship and community resilience.

## Progress assessment and recommendations

**Chapter 5** encapsulates the journey of the Ararira LII programme, offering a comprehensive overview of its progress, key achievements, and forward-looking recommendations. This chapter acts as a pivotal reflection point, assessing the programme's impact and charting the path ahead.

The Ararira LII programme has marked significant advancements in environmental management and community engagement. Noteworthy activities and outputs include the advocacy and implementation of the Tārerekautuku/Yarrs Lagoon restoration, the innovative redesign of the Ararira LII catchment water network, and the significant building of capacity and capability among stakeholders. These initiatives have fostered ecological and cultural integration and reinforced collaborative practices across groups, leading to improvements in local indigenous biodiversity.

The programme achieved several intermediate outcomes that can be seen as important stepping stones towards long-term environmental and social goals. These include enhancing habitats for indigenous species, weaving ecological and cultural values into catchment management, and building stronger, more informed partnerships. Progress in these areas not only met immediate programme goals, but also established a solid foundation for continued environmental stewardship and community engagement.



The recommendations underscore the importance of focusing on intermediate outcomes - or 'supporting structures' - that are essential for advancing long-term environmental and social catchment goals. These areas, often overlooked or underfunded, are crucial for sustainable catchment management. The recommendations are as follows:

- **Strengthen cross-sector and inter-agency collaboration:** This evaluation highlighted the essential role of collaboration among key partners in achieving programme objectives. Future programmes should build on existing collaborations, and review and address administrative and implementation barriers to collaboration to enhance future initiatives.
- **Diversify capability and capacity:** Emphasise the importance of a diverse skill set, combining technical expertise with interpersonal and relational skills. Recommend building teams with varied skill sets to navigate complex management challenges effectively.
- **Provide more emphasis on evaluation and adaptive management:** Adopt a flexible approach incorporating robust monitoring and evaluation systems. Include formal review points within programmes, taking care to consider assessing environmental, social, economic, and cultural dimensions.
- **Leverage co-benefits:** Encourage the identification and utilisation of co-benefits from complex programme activities. Identify potential co-benefits early in the planning process and remain open to emergent benefits to maximise programme impact.
- **Integrate technical innovations into adaptive management:** Incorporate advanced techniques like co-design, real-time monitoring, and data-driven decision-making into adaptive management to support sustainable catchment-wide ecological improvements.



Drain rebattering and native planting on a farm in Silverstream.

# Contents

Executive summary .....	1
<b>1. Evaluation and programme introduction .....</b>	<b>1</b>
1.1 Evaluation process, design and report structure .....	2
1.2 Programme context and development .....	5
1.2.1 National context .....	5
1.2.2 Catchment context .....	6
1.2.3 Social/cultural context .....	6
1.2.4 Programme development .....	7
1.3 Programme milestones .....	9
1.4 Theory of change .....	10
1.4.1 Logic model .....	10
1.4.2 Underpinning assumptions and guiding principles .....	11
<b>2. Inputs, activities and outputs .....</b>	<b>13</b>
2.1 Governance, management, and resourcing .....	13
2.2 Activities and outputs .....	15
2.2.1 Restoration support .....	15
2.2.2 On-farm initiatives .....	16
2.2.3 The water network .....	16
2.2.4 Strategic partnerships .....	17
2.2.5 Monitoring and evaluation .....	18
2.2.6 Documentation and advocacy .....	18
2.3 Outputs - by the numbers .....	19
<b>3. Outcomes - results and themes .....</b>	<b>20</b>
3.1 Results table .....	21
3.2 Outcomes by theme groupings .....	23
3.2.1 Organisational changes .....	23
3.2.2 Relational changes .....	25
3.2.3 Ecological changes and valuing the environment .....	25
3.2.4 Capability/capacity changes .....	27
3.2.5 Financial investment and impact .....	28
3.2.6 Scaling up and out .....	28

<b>4. Insights, challenges, and lessons .....</b>	<b>29</b>
4.1 Focusing on ecological wins.....	30
4.2 Scaling up – moving from trials to redesigning catchment waterways.....	32
4.3 Building capacity and capability.....	34
<b>5. Progress assessment and recommendations .....</b>	<b>36</b>
5.1 Programme achievements and outcomes .....	36
5.1.1 Achievement of activities and outputs.....	36
5.1.2 Contribution towards outcomes.....	37
5.1.3 Areas for improvement.....	38
5.1.4 Contribution to unplanned outcomes.....	38
5.1.5 Reflecting on guiding principles and assumptions.....	39
5.2 General recommendations .....	40
<b>Appendix 1: Information sources for evaluation .....</b>	<b>42</b>
<b>Appendix II: Author biographies .....</b>	<b>47</b>

## Abbreviations

CAME - Complexity-Aware Monitoring and Evaluation

CCS - Catchment Condition Survey

CMP - Catchment Management Plan

DOC - Department of Conservation

ECan - Environment Canterbury

FEP - Farm Environment Plans

IG - Implementation Guide

MfE - Ministry for the Environment

MOU - Memorandum of Understanding

SDC - Selwyn District Council

ToC - Theory of Change

UC-CAREX - University of Canterbury - Canterbury Waterway Rehabilitation Experiment



# 1. Evaluation and programme introduction

Living Water, a partnership between the Department of Conservation (DOC) and Fonterra, was a ten-year programme to find ways to improve freshwater ecosystem health while enabling farming to thrive. The partnership was formed in 2013, marking the first national collaboration of its kind in New Zealand - between a government conservation agency and a primary industry cooperative - and emerged at a time of growing national concern about the impact of dairy farming on water quality.

Fonterra pledged \$20 million over 10 years for programmes, operationally overseen by DOC, complemented by DOC's commitment of approximately \$500,000 annually in staff time. The partnership aimed to improve freshwater ecosystems and increase biodiversity in agricultural landscapes. Five catchments, all with intensive dairying and challenging freshwater issues, were selected to trial a variety of tools and approaches. These catchments were: Wairua River, Northland; Pūkoro-Miranda, Hauraki; Lakes Areare, Ruatuna and Rotomānuka, Waikato; Ararira LII River, Canterbury; and Awarua-Waituna Lagoon, Southland. Moving beyond a focus on individual farm enterprises, this partnership has embraced a comprehensive catchment-scale approach, deepening our understanding of effective environmental change on a larger scale, and showcasing the contributions agencies and sectors can make at this level.



**Figure 1.** The Living Water sites

This report synthesises key insights, challenges, and lessons developed from an evaluation from the Ararira LII programme in Canterbury. It is part of a series of five evaluations conducted across the Living Water sites, each building upon the valuable lessons learned. This report aims to provide a comprehensive analysis of the Ararira LII programme, assessing its effectiveness and impact within the broader context of the Living Water Partnership. By synthesising key insights, challenges, and lessons, this report contributes to the collective understanding of catchment-scale environmental management and highlights how the Ararira LII programme fits into and supports the overall objectives of the Living Water initiative.

## **1.1 Evaluation process, design and report structure**

The evaluation process for each site was designed and implemented using a participatory model. In addition to forming evaluation teams comprising Living Water Partnership (Fonterra and DOC) staff at each site, the evaluation consultants conducted interviews with various stakeholders, reviewed relevant literature, and facilitated workshops with the entire Living Water team. The joint authorship of each of the site evaluation reports includes both the consultant evaluators, Will Allen and Viv Sherwood, and the Living Water Ararira LII Evaluation Team: Sarah Yarrow (Living Water National Manager), Katie Collins (Living Water Science Lead), and the appropriate Living Water site staff for each catchment. This collaborative approach ensured that the evaluation was co-created with people involved in and impacted by the programme, incorporating diverse perspectives and fostering a sense of shared ownership. While each evaluation is site-specific, the authors' collective work across the entire Living Water programme informs and enhances our understanding, enabling us to draw broader lessons and insights that benefit all sites.

The performance story design is based on methods that facilitate joint evaluation activities, ensuring a range of perspectives are considered. This approach ensures that each evaluation not only assesses the outcomes and impacts of interventions but also fosters a collaborative environment where insights and learning are shared and integrated into ongoing and future projects. For the Ararira LII site specifically, the performance story report (PSR) design is used to explore and detail the extent of the intervention's contribution to outcomes. The report also notes intended accomplishments, reports achievements against expectations, and discusses lessons learned and what will be changed. The process steps include clarifying the programme logic, developing guiding questions for the performance inquiry process, and evidencing outcomes.

In addition to this evaluation, the Living Water programme utilised its comprehensive website to report on the implementation and results of various trials and processes. This website served as a key platform for monitoring and documentation of the programme's activities, complementing the formal evaluation processes. The programme also produced a Living Water eBook highlighting eight key lessons learned, that further contributed to the overall evaluation landscape.

Recognising the dynamic and interconnections of environmental programmes, this evaluation utilises complexity-aware monitoring and evaluation (CAME) approaches. These approaches include systems thinking to understand interconnections, adaptive management to adjust strategies based on new learning, participatory methods to engage stakeholders, developmental evaluation to support innovation, outcome harvesting to identify contributions to change, and contribution analysis to establish links between activities and outcomes. These approaches were well-suited for capturing the nuanced and evolving impacts of the programme, providing a holistic understanding of its outcomes and the broader context in which it operates. The evaluation approach aimed to:

- Complete the ongoing monitoring and reporting of Living Water Ararira LII programme activities as part of transparent and sound management.
- Establish a credible case for the programme's contribution while providing a common language for discussing different activity streams and focusing on results – including from a wider programme perspective.
- Support the programme and its partners as they look to encourage, guide, and catalyse future activities that support agency and sector staff looking to support similar place-based initiatives.
- Assess the sustainability and scalability of the programme's outcomes and practices.
- Document and analyse the lessons learned and insights gained throughout the programme's implementation.

Importantly, this evaluation process was never designed to conclude with this report. The reports (across all Living Water sites) were intended as aids to facilitate discussions with each site's partners and local communities, using the findings and aspects of the evaluation as prompts for facilitated learning debriefs or social learning discussions. This approach is particularly highlighted in the way Chapters 2 and 3 build on the structure of a logic model but provide a whole programme perspective. Similarly, Chapter 4 was designed to pick a few key programme areas and use them to explore insights, challenges, and lessons. This method helped address challenges in a non-personal way, setting the stage for future facilitated discussions in a safe environment.

The findings, conclusions, and recommendations of this report were designed to offer valuable insights and lessons that could inform and enhance future work by the site partners. This evaluation, as one of five conducted across different Living Water sites, serves as a foundational piece for extracting broader lessons, particularly focusing on how agencies can improve catchment-level initiatives. Through this structured approach, the Living Water programme aspires to leverage this evaluation to inform and guide other catchment programmes, ensuring that the lessons learned are applied to achieve greater environmental resilience and community well-being.



## Report structure

To effectively support a utilisation phase and future discussions, the structure of this report is designed to systematically present the evaluation findings and insights. The following outlines the structure of this report:

**Chapter 1:** Outlines the evaluation framework and introduces the Ararira LII catchment context, the development of the Living Water work programme over time, and its underlying Theory of Change (ToC), which forms the framing for the remainder of the report.

**Chapter 2:** Delves into the inputs of the programme: the partners, knowledge, and resources. It outlines activities and outputs produced and, together with the milestone timeline, provides a snapshot of the programme's collaborations over the past ten years.

**Chapter 3:** Focuses on outcomes - the actual difference the programme has made in the real world. This analysis is conducted across themes instead of their relation to individual activity areas, as some outcomes achieved often span multiple activity areas. Detail is provided on intermediate outcomes, changes in practices, and the impacts across diverse clusters such as organisations, farmers, community groups, and schools.

**Chapter 4:** Presents insights, challenges, and lessons learned from working in the Ararira LII catchment, illustrating how these experiences can inform and enhance future collaborative initiatives. The chapter highlights the interconnected benefits of programme activities, demonstrating how they contribute to broader environmental and community objectives.

**Chapter 5:** Offers a broader evaluation of the programme's impact by outlining progress towards the desired long-term outcomes. This assessment looks at the contribution of intermediate outcomes, the potential unintended impacts, and the effectiveness of the programme's strategies. The chapter concludes by offering recommendations for future work.

## 1.2 Programme context and development

Understanding the broader context is crucial in evaluating any programme. A programme does not operate in isolation; it both draws from and contributes to the larger societal and environmental system. Understanding this interaction is essential in assessing the programme's effectiveness and relevance. This brief context section acknowledges the national and local conversations, initiatives, policies, and cultural histories that influence environmental management and agricultural practices in New Zealand.

### 1.2.1 National context

Over the past twenty years, New Zealand has witnessed a transformative shift in its agricultural practices and environmental management. Over this period, we have seen the gradual introduction of a raft of guidelines, policies and regulations aimed at enhancing water quality and resource management. In addition to increased water usage efficiency and a growing focus on biodiversity, there has been a great deal of attention paid to encouraging sustainable farming practices. Increased community involvement and participation in both policy development and research have supported these developments. More recently there has also been considerable evolution of community catchment group initiatives, as communities recognise the need to work at a catchment scale and seek to work together locally to address water quality challenges ahead of regulation.

Living Water's collaborative approach to catchment management reflected this contemporary approach to environmental management. It encouraged collaboration and integrated management at the catchment level and beyond, emphasising the interconnection of land and water resources. It looked to address issues like water pollution and biodiversity loss. Within this context, the Living Water programme focused on identifying practical, scalable solutions, reinforcing a comprehensive catchment-scale approach that deepened our understanding of effective environmental change on a larger scale and showcases the contributions agencies and sectors can make at this level.

The programme recognised the significance of wetlands, rivers, and other water bodies to the communities, particularly mana whenua. Living Water aimed to include mana whenua in the journey to address widespread environmental issues, and to acknowledge their whakapapa, values, and perspectives on understanding and improving environmental health. The Living Water programme also played a role in facilitating stakeholders to think about sustainable practices and biodiversity restoration.

Alongside Living Water, we can recognise several other key initiatives that contribute to an evolving catchment management system. These initiatives operated across a spectrum of scales, from farm-specific projects to comprehensive national strategies and were supported by government, industry, councils and non-government organisations. They included the Sustainable Dairying: Water Accord, Fonterra's Sustainable Dairying Tiaki Programme, riparian planting projects, Predator-Free New Zealand 2050, National Policy Statement for Freshwater Management, regional water management strategies, and various research and development initiatives. All these collective efforts underscore a commitment to building a more sustainable and environmentally conscious agricultural sector.

## 1.2.2 Catchment context

Transitioning from the national to the local, this evaluation focuses on the Ararira LII programme, one of the five sites under the Living Water programme. The Ararira LII River is a spring-fed tributary of Te Waihora/Lake Ellesmere, New Zealand's fifth largest lake and an important wetland ecosystem. The Ararira LII catchment was selected because although it is highly modified with waterways which are primarily managed for land drainage, these waterways are also a significant source of water for Te Waihora and contain remnant habitat for native fish, bird, and plant species. The Ararira LII River starts near Lincoln township, flows through the rural landscape to the coast, passing through two large catchment wetlands - Tārerekautuku/Yarrs Lagoon Reserve and finally Yarrs Flat wildlife reserve on the northern shore of Te Waihora / Lake Ellesmere.

Historically, the catchment was a wetland with kahikatea and matai swamp forest. From 800 years ago, this forest was removed, leading to a gradual reversion to a forest through stages of harakeke and raupo. However, European settlers' land drainage and development for farming and settlement stopped this natural progression. Consequently, the Ararira LII River catchment has seen substantial loss of wetlands, freshwater ecosystems, and lowland habitats. Today, high levels of suspended sediment, nitrogen, phosphorus, and faecal coliforms contribute to poor water quality, including in Te Waihora/Lake Ellesmere. The degradation of water quality, wetland, and lagoon hydrology primarily results from land use changes and alterations to the waterway network for drainage, initiated in the mid-1800s to enable farming and settlement.

Currently, the catchment features approximately 76 km of council drains, matched by an equal length of private drains. The Ararira LII catchment covers 6,600 ha and includes 12 dairy farms, lifestyle blocks, sheep and beef, deer, horticulture and cropping, and the townships of Lincoln and Springston. Over the last decade, Selwyn has become New Zealand's second-fastest-growing district, expanding from 42,900 residents in 2011 to approximately 83,000, with most growth occurring in the townships of Rolleston and Lincoln.

## 1.2.3 Social/cultural context

Te Waihora has special significance to Ngāi Tahu as a tribal taonga representing a major mahinga kai area (including eels (tuna) that are still harvested today), and an important source of mana. Unique features of this catchment include numerous headwater springs, an extensive network of drains and waterways, and two large wetland areas: Yarrs Flat and Yarrs Lagoon/Tārerekautuku. The catchment's network of highly modified waterways and remnant wetlands provides some habitat for native fish, bird, and plant species, although it is severely degraded.

In 2012, Te Rūnanga o Ngāi Tahu and Environment Canterbury initiated a shared commitment to restore the mauri and ecosystem health of Te Waihora / Lake Ellesmere and its catchment. This co-governance group, later joined by Selwyn District Council, Christchurch City Council, and the Department of Conservation Te Papa Atawhai, represents a voluntary partnership with equal representation of mana whenua and local



government/Crown interests. The Whakaora Te Waihora programme, launched in 2012, is the operational arm of this group, focusing on restoring the lake's mana, mauri, and ecosystem. Acknowledging that achieving their vision may take two generations, the partners are dedicated to ensuring the lake's sustainability for future generations by restoring the lakeshore, in-lake habitat, tributaries, and enhancing water quality, mahinga kai, and biodiversity values. A lot of work is underway by the various partners, and Living Water chose the Ararira LII catchment because it had fewer existing projects compared to other catchments.

## **1.2.4 Programme development**

The Ararira LII programme, reflecting Living Water's three-phase process across all catchments, began with establishing foundational relationships, collecting baseline data, and focusing on initial restoration work. Following a strategic reset for refined focus, it advanced into a tailored, systemic catchment management approach. This evolution from restoration on public land to a holistic catchment-level strategy, culminating in a district-wide environmental management model, exemplifies the programme's journey towards integrating ecological needs with community collaboration for sustainable ecosystem stewardship.

### **Getting started**

The programme was initiated in Te Waihora/Lake Ellesmere, focusing on drain rehabilitation within the Ararira LII catchment. Early efforts involved building relationships with Te Taumutu Rūnanga as mana whenua, Selwyn District Council (SDC), the LII drainage committee and other catchment stakeholders. Restoration work on public land and support for bringing biodiversity expertise in-house at SDC led to support for a restoration plan for Yarrs Lagoon/Tārerekautuku. This included willow control, planting, and restoration planning efforts. A strategic partnership with the University of Canterbury - Canterbury Waterway Rehabilitation Experiment (UC-CAREX) was established, enhancing understanding of the waterways' drainage systems.

### **Middle phase – the reset**

In 2017, Living Water marked a strategic shift towards redesigning the programme's focus. The goal was to redesign the Ararira LII drainage and waterway network to support a healthy freshwater ecosystem within a productive agricultural landscape and provide a guiding framework for implementation efforts. Recognising the importance of considering the drainage system at the catchment level, rather than individual site-specific actions, trials were undertaken based on research by the University of Canterbury and best international practices. Living Water also reinforced its strategic partnership with UC-CAREX by providing financial support for ongoing research on local agricultural drains. This initiative aimed to inform and support a long-term strategy to transform the drain and water network into a healthy freshwater ecosystem within the productive agricultural landscape.

## Final phase - the last push

Based upon this research to better understand the waterways in the catchment, Living Water approached SDC and Te Taumutu Rūnanga with a proposed Memorandum of Understanding (MOU) to work together on re-designing the entire Ararira LII Drainage District. The goal was to combine small-scale trials with other mitigations, such as strategic land use change, surface water treatment wetlands and large-scale sediment traps, to create a plan that supports ecological, cultural and drainage values across the whole catchment. Following a 2020 MOU with Living Water, SDC, and Te Taumutu Rūnanga, a co-design group was established to lead the catchment redesign project. By 2023, the Ararira LII Catchment Management Plan (CMP) and Implementation Guide (IG) were completed, with SDC using it as a model for district-wide drainage. The CMP outlines how to manage the Ararira LII Drainage network to enhance biodiversity and cultural outcomes while providing effective drainage, and the accompanying IG offers guidance across a range of key activity areas to support a collective and joined-up approach to implementation and management.



Cultural health assessments helped develop a shared understanding of the values of the drains and waterways of the Ararira-LII catchment, with mana whenua, farmers and scientists all taking part.

## 1.3 Programme milestones

The following timeline highlights key milestones and significant achievements of the Living Water programme in the Ararira LII catchment. These milestones mark important moments of progress, collaboration, and impact, showcasing the programme journey, its evolution, and its outcomes.

2013	2014	2015	2016	2017
<p><b>Project launch</b> Programme initiated in Te Waihora focusing on drain rehabilitation, initially targeting the Ararira LII catchment.</p> <p><b>Relationship building with Te Taumutu Rūnanga</b> Established groundwork for Te Mana Ararira advisory group, enhancing collaboration for Te Waihora waterway restoration.</p>	<p><b>Tārerekautuku/Yarrs lagoon &amp; Yarrs flat willow control</b> Marked Living Water's catchment presence with quick wins in willow control and planting, building stakeholder relationships.</p> <p><b>Supported University of Canterbury stream rehabilitation trials in Silverstream</b> UC-CAREX ran region-wide stream rehabilitation trials involving farmers, council, iwi and the wider public, including in the adjacent Silverstream catchment, with potential to scale up building stakeholder relationships.</p>	<p><b>On-farm biodiversity assessments trial</b> Conducted biodiversity assessments on five farms, these findings contributed to development of biodiversity information in Fonterra's Tiaki Farm Environment Plan.</p>	<p><b>LII Drainage Committee – relationship building underway</b> Fostered a direct relationship with the Drainage Committee, enhancing operational decisions for drain maintenance.</p> <p><b>Selwyn District Council biodiversity support officer</b> Supported the creation of an in-house biodiversity officer role, facilitating easier project integration and further council-funded positions.</p>	<p><b>Sprint planning exercise</b> A strategic refocus towards transforming drains into healthy freshwater ecosystems within an agricultural landscape.</p> <p><b>Strategic partnership with University of Canterbury</b> Through the partnership, UC-CAREX research helped identify the biggest issues in the catchment, particularly sediment, and supported in-stream sediment trap trials and costings drains.</p>
2017	2018	2020	2021	2023
<p><b>On farm tool scoping assessments</b> Initiated farm-specific assessments, highlighting the complexity of water quality improvements and the need for a catchment-wide focus.</p>	<p><b>Habitat enhancement at Powells road</b> Supported an in-drain restoration trial with SDC and LII Drainage Committee, testing habitat enhancement while maintaining drainage.</p> <p><b>Yarrs Flat One Billion Trees (MPI) Funding</b> DOC secured \$420,000 from One Billion Trees for native shrub planting, with additional funding and native plants in 2020 through Jobs for Nature.</p>	<p><b>MOU with Te Taumutu Rūnanga, SDC, and Living Water</b> Agreed to a catchment-wide approach for managing lowland waterways, balancing ecological, cultural values, and drainage.</p>	<p><b>Catchment redesign co-design group established</b> Formed a co-design group with diverse catchment partners and research consultants to advance the catchment redesign project.</p>	<p><b>Ararira LII Catchment Management Plan and Implementation Guide completion</b> Finalised an SDC-endorsed Catchment Management Plan and Implementation Guide, proposing new waterway management strategies.</p> <p><b>SDC uptake of CMP and IG to support other catchments</b> The Ararira LII catchment plan and implementation guide are now being extended by SDC to develop similar plans for other catchments in the district, primarily around Te Waihora.</p> <p><b>SDC public good rate introduction</b> Introduced a new ecological enhancement rate, expanding funding for alternative drain management and extending catchment planning efforts.</p>

**Table 1:** The Ararira LII programme milestones and timeline



## 1.4 Theory of change

A Theory of Change (ToC) describes how we think change happens. A programme's ToC serves as a foundational roadmap, outlining the desired outcomes, the steps necessary to achieve these outcomes, and the causal relationships between these actions and outcomes. It fosters a shared understanding that is essential for both coordination and evaluation, encapsulating the programme's context, a logic model, and its underlying assumptions. This framework is instrumental in articulating a programme's intended achievements, providing a basis for both coordination and evaluation. The initial ToC for all the sites under the Living Water programme was broadly oriented towards holistic environmental and community well-being outcomes. This encompassed supporting diverse wetland ecosystems, embedding biodiversity within sustainable dairy farming practices, enhancing water quality and biodiversity through knowledge sharing, documenting the programme's impact, revitalising cultural and natural heritage, and elevating awareness of ecosystems' roles in community health. Several main activity themes were organised around ecosystem enhancement - farm management sustainability, community and iwi support, research and monitoring, and effective storytelling.

Living Water's National Strategy was revised in 2017, moving from a predominantly on-the-ground 'restoration' programme to a 'proof of concept' focussed more on testing tools and approaches that could be scaled and sharing lessons along the way, both successes and 'failures'. The National Planning Monitoring & Evaluation Framework followed in 2018.

### 1.4.1 Logic model

Following the strategic realignment in 2017, the site team identified a select number of key strategic activity areas for the Ararira LII programme. These were envisioned to guide the programme towards success, as depicted in the accompanying 2018 logic model (table 2). They emphasised activities and outcomes aimed at delivery on the site's focus of transforming the drainage network into a vibrant freshwater ecosystem within a productive agricultural landscape.

Activities	Outputs	Medium term outcomes (by 2023)	Longer term outcomes
<b>On-farm:</b> Trialling tools, monitoring at farm & catchment scale, FEPs	Farm Environment Plans (FEP) Fencing, riparian and wetland planting	Other landowners in the catchment implement freshwater management actions on-farm	Healthy resilient lowland freshwater ecosystems Profitable responsible dairying
<b>Restoration Support:</b> for public land at Yarrs Flat and Tārerekautuku/Yarrs Lagoon	Weed control Tool trials	Yarrs Flat and Tārerekautuku/Yarrs Lagoon are valued by the catchment community as key ecological assets in the water network for their ecological integrity and as source areas for biodiversity	A shared understanding of the interdependence of agriculture, economics and environment by the broader community
<b>The water network:</b> Trialling alternative drain management approaches, improving instream habitat and function	Instream habitat trials Memorandums of understanding with partners Sharing learnings through website, social media, professional forums, community events	Biodiversity, ecological and cultural values are improving in the drainage network Councils and other land managers have scaled techniques from Living Water activity to other catchments	
<b>Strategic partnerships:</b> working with mana whenua, operational agencies & others			
<b>Monitoring our progress, Telling our story and Championing change</b>			

**Table 2:** The Ararira LII programme logic model (2018)

As table 2 shows, activities included on-farm initiatives such as tool trials, monitoring at both farm and catchment scales, and the development of Farm Environment Plans (FEPs). It also involved restoration support for Yarrs Flat and Tārerekautuku/Yarrs Lagoon, and trials of alternative drain management approaches to enhance instream habitat and function. Strategic partnerships were formed with mana whenua, operational agencies, and others, focusing on monitoring progress, sharing learnings, and championing change.

In terms of outcomes, the programme aimed to contribute to both intermediate (short/medium) and long-term impacts. The logic model presupposed that achieving the desired ecological and social state changes was a long-term endeavour, extending beyond the programme’s 10-year timeframe. These intermediate outcomes were seen as pivotal, laying the groundwork for long-term ecological improvement and serving as key indicators of the programme’s short to medium-term success.

In the short to medium term, it sought to enhance the engagement of landowners in freshwater management actions and to recognise Yarrs Flat and Tārerekautuku/Yarrs Lagoon as key ecological assets within the water network. The goal was to establish healthy, resilient lowland freshwater ecosystems and promote profitable, responsible dairying, alongside fostering a community-wide understanding of the interdependence of agriculture, economics, and the environment.

### 1.4.2 Underpinning assumptions and guiding principles

The assumptions and principles outlined below are from the Living Water National Planning, Monitoring and Evaluation Framework (2018, updated 2020), which serves as a foundational reference for the programme’s strategic approach.

### Causal assumptions are:

- **Partnership:** Effective change requires collaboration, as no single organisation possesses all the necessary resources or influence.
- **Social learning:** Learning occurs through action, reflection, and collaboration, offering new perspectives and pathways forward.
- **Behaviour change:** Enduring change in farming practices involves a comprehensive change cycle, from motivation to the embedding of new habits.
- **Systems thinking:** Addressing change at the individual farmer level is just one aspect; broader systemic changes are also necessary for accelerated impact.

These assumptions align with the Living Water Programme’s guiding principles, emphasising collaboration, the integration of mātauranga Māori, knowledge sharing, economic viability, scalability, and the importance of learning and sharing. These principles underpinned the programme’s approach to achieving its long-term goals and reflect a commitment to a holistic and inclusive strategy for catchment management.



Sharing information through conversation helps with understanding different perspectives and builds trust.



## 2. Inputs, activities and outputs

This chapter delves deeper into the foundational elements of the Ararira LII programme, focusing specifically on inputs, activities, and outputs. These components form the backbone of any programme, providing the necessary support and direction. They also served as the driving forces that kept staff engaged and active throughout the programme lifecycle.

### 2.1 Governance, management, and resourcing

#### Governance and management

The Living Water partnership operated at three levels:

- **Strategic oversight** was managed by the Steering Committee, which comprised senior representatives from both partners, the Department of Conservation (DOC) and Fonterra.
- **National Programme Management** was led by the National Manager, supported by a programme group of staff from both DOC and Fonterra. This group was responsible for the delivery of national projects and maintaining consistency across catchment programmes.
- **Site-level delivery teams** were directed by a full-time DOC Site Lead, with support from DOC and Fonterra staff. DOC was responsible for operational delivery at the site level, working in close collaboration with Fonterra staff. The Site Teams were also supported by a Freshwater Technical Adviser (DOC), and Sustainable Dairying Advisor (Fonterra). These teams conducted project trials and implemented restoration work alongside mana whenua, stakeholders, researchers, contractors, and consultants.

The operating model of Living Water was adapted over the ten years of the partnership as the programme of work moved through three phases:

- Establish, engage, investigate, and ‘quick wins’
- Confirm strategy, consolidate, plan, trial and build alliances
- Share lessons, grow impact

As the Living Water programme entered its final phase (2020-2023), it focused management resources on broadening impact and sharing the tools and insights from the programme more widely.

#### Inputs – Resourcing, expertise and collaborations

The Living Water Ararira LII catchment programme benefited from a wide range of partnerships and collaborations, gaining access to in-kind support, valuable knowledge, and expertise. These contributions, often difficult to quantify, were crucial yet not always visible or fully recognised in planning or reporting processes. They came from a variety of sources, including:

- **Department of Conservation (DOC):** Offered institutional knowledge and expertise, and support from operations, communications, and aquatic units.
- **Fonterra:** Provided expertise and support from teams, such as the Sustainable Dairying Team, Sustainable Catchments Team, and On Farm Excellence Team.
- **Te Taumutu Rūnanga:** Shared critical mātauranga Māori and local knowledge, led the Te Mana Ararira stakeholder group, and supported a partnership and systems-based approach.
- **Selwyn District Council:** Offered expertise, support, and collaboration on projects like the Yarrs Lagoon/Tārerekautuku restoration and agricultural waterways enhancement.
- **Environment Canterbury:** Facilitated important linkages and discussions on drainage management, and funded willow control at Yarrs Flat and Yarrs Lagoon/Tārerekautuku.
- **Community organisations:** Waihora Ellesmere Trust (WET) and Te Ara Kākāriki Greenway Canterbury Trust helped connect the programme with the wider Te Waihora catchment and assisted with wider community engagement.
- **University of Canterbury - Canterbury Waterway Rehabilitation Experiment (UC-CAREX):** Provided expertise on waterway rehabilitation and community and farmer engagement.
- **Lincoln University:** Contributed a master plan for Yarrs Flat Wildlife Reserve and funded ecological monitoring through a student scholarship.
- **Fish & Game North Canterbury:** Helped align restoration and recreational interests with the programme's goals.
- **Consultants, researchers, and contractors:** Provided specialised knowledge and technical support.
- **Landowners and community members:** Provided invaluable in-kind support, participation, and collaboration, contributing to the success of various programme activities.

### Inputs – Direct funding

The funding outlined below includes both Living Water funding, and funding provided for linked Ararira LII catchment work.

- \$2.7 million invested by Living Water over 10 years
- \$444,000 from One Billion Trees and Jobs for Nature funding for native planting at Yarrs Flat
- \$50,000 from ECan funding for Willow Control at Yarrs Flat
- \$796,000 from Ministry for the Environment (MfE) Freshwater Improvement Fund for Tārerekautuku/Yarrs Lagoon restoration

## 2.2 Activities and outputs

In the “Activities and Outputs” section, the tasks undertaken (activities) and the immediate results (outputs) obtained are explored. Understanding how our actions translate into outcomes is essential for assessing the effectiveness of the Living Water Ararira LII programme.

The Ararira LII activities are organised according to the components identified in the logic model, ranging from on-farm efforts and tool trials to restoration at Yarrs Flat and Tārerekautuku/Yarrs Lagoon. It’s important to recognise that these activities are connected, not isolated. Through these efforts programme staff collaborated with mana whenua, farmers, science providers and agencies. Key outputs included Farm Environment Plans (FEPs), fencing, native planting, and Memorandums of Understanding (MOU). There was also a focus on sharing stories, lessons, and insights. More specific commentary on how activities and outputs manifested in the programme follows.

### 2.2.1 Restoration support

**Baseline information gathering:** Initial work involved developing a comprehensive understanding of the Ararira LII catchment, including its ecology, water quality, and hydrology, to inform future action. Monitoring at both farm and catchment scales was undertaken, including cultural health index studies, water quality monitoring and fish surveys.

**Yarrs Flat Wildlife Reserve and Tārerekautuku/Yarrs Lagoon:** Sustained engagement with Selwyn District Council (SDC) fostered collaborative efforts for waterway enhancement and restoration of the significant Tārerekautuku wetland. This resulted in a reserve management plan, formation of a Landcare Group, and the initiation of willow control at the site. Actions for willow control and planting were undertaken at both sites, with a Lincoln University summer scholarship student completing a baseline report and ecological monitoring. The School of Landscape Architecture also provided a master plan for community engagement, public access, and restoration of Yarrs Flat Wildlife Reserve. Strategic support and plan writing input were also provided for SDC’s successful application to the Ministry for the Environment Freshwater Improvement Fund for the restoration of Tārerekautuku/Yarrs Lagoon.

**Silverstream site:** Initiated in 2014 by UC-CAREX and supported by Living Water, this restoration trial began downstream of a wetland, and involved site preparation of a 200-metre stretch of on farm drain/waterway through the removal of hedges and willow poisoning. The banks were reshaped and re-battered, and fencing was set further back from the waterway. Ecological monitoring was initiated to track the progress of the restoration. The project expanded wetland planting and extended restoration of the waterway, covering an additional 800 metres downstream. Community planting events were initiated to reinforce public commitment to environmental restoration. The rehabilitation of the neighbouring **Snake Creek** was a related collaborative effort with the Water and Wildlife Habitat Trust, an initiative of North Canterbury Fish and Game.

**Powells Road drain restoration trial:** Starting in 2014, this project aimed to transform a roadside drain into a thriving freshwater ecosystem. This initiative demonstrated a collaboration between UC-CAREX and Living Water as the project enablers, and the SDC, LII Drainage Committee and neighbouring farmers as landowners/managers. Various techniques were employed to enhance water quality and biodiversity, including planting *Carex secta* to provide shade, and strategically placing rocks, stones, and logs to diversify the flow and available habitats.

**Communities and schools** have actively contributed to Living Water activities. The first Canterbury Plant-Out Day at Yarrs Flat, organised by Te Ara Kākāriki, drew support from multiple organisations, including Living Water and Environment Canterbury. This was followed by the Lincoln Envirotown Kidsfest event and community plant-outs at Yarrs Flat Wildlife Reserve. The following year, the Canterbury Plant-Out Day saw participation from around 200 individuals and the planting of 2,600 native plants. Another highlight was the Kids Discovery Plant Out, which engaged approximately 150 children in diverse activities. Collaborative community efforts were further solidified through MOUs with Waihora Ellesmere Trust and Lincoln Envirotown, emphasising community engagement and sustainable objectives.

### **2.2.2 On-farm initiatives**

Farm Environment Plans were delivered in collaboration with farmers, alongside a pilot of Biodiversity Assessments on farms.

Building on UC-CAREX trials at Silverstream, Living Water partnered with UC-CAREX in 2017 to identify key water quality issues in the catchment, including flooding, nuisance weeds, high sediment levels, excessive nutrients (notably nitrate), and ecological damage from drain clearance. Various tools were trialled, including re-battering farm drains, improving habitat in roadside agricultural drains, and implementing in-stream sediment traps, a woodchip bioreactor and two-stage channel.

### **2.2.3 The water network**

Following on from the UC-CAREX trials on-farm and the strategic reset, Living Water initiated discussions with Te Taumutu Rūnanga and Selwyn District Council (SDC) around the catchment redesign proposal. In October 2020 SDC, Te Taumutu Rūnanga, and the DOC and Fonterra (as the Living Water Partnership) signed an MOU to produce a Catchment Plan for the Ararira LII River drainage district. The new plan aimed to ‘fundamentally change the way waterways were valued and managed by incorporating ecological and cultural principles into the design while also recognising that drainage would remain a key value’. The project team comprised hydrological and ecological consultants, a social consultant, DOC and Fonterra staff, representatives of Te Taumutu Rūnanga (mana whenua), landowners (via the LII Drainage Committee), and Environment Canterbury and Selwyn District Council staff, and used a co-design process to create a holistic management approach at the catchment scale. This work provided two reports as outputs: i) Ararira-LII Catchment Management Plan; and ii) Ararira LII Implementation Guide.



**Powells Road drain restoration trial:** Starting in 2014, this project aimed to transform a roadside drain into a thriving freshwater ecosystem. This initiative demonstrated a collaboration between UC-CAREX and Living Water as the project enablers, and the SDC, LII Drainage Committee and neighbouring farmers as landowners/managers. Various techniques were employed to enhance water quality and biodiversity, including planting *Carex secta* to provide shade, and strategically placing rocks, stones, and logs to diversify the flow and available habitats.

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#### **2.2.4 Strategic partnerships**

**Te Mana Ararira:** Recognising the significance of Te Waihora and its catchments to Ngāi Tahu, Living Water formalised a partnership with Te Taumutu Rūnanga in 2018, establishing the advisory group Te Mana Ararira to facilitate structured engagement and support the aspirations of mana whenua for the catchment.

**UC-CAREX:** From 2014 to 2017, Living Water supported UC-CAREX with restoration trials in the Silverstream catchment. This evolved into a strategic partnership in 2017 to enhance research for New Zealand's waterways, focusing on restoring agricultural waterways and building robust partnerships between scientists, communities, and decision-makers.

**Redesigning the lowland waterway network:** A strategic partnership formed in October 2020 between SDC, Te Taumutu Rūnanga, DOC and Fonterra (as Living Water) facilitated a multi-stakeholder approach to redesign the lowland waterway network in the Ararira LII catchment, ensuring an innovative and inclusive process. This collaboration brought together a wide range of expertise and perspectives from hydrological, social, and ecological consultants, DOC and Fonterra staff, representatives of mana whenua, landowners, and local council staff.

#### **2.2.5 Monitoring and evaluation**

Living Water has developed a comprehensive monitoring and evaluation framework at a national level to assess the environmental, economic, social, and organisational impacts of its trials. This includes biophysical measurements, economic impact assessments, and social and organisational performance assessments, all designed to ensure that the interventions lead to meaningful and valuable outcomes for the range of partners involved. This national framework has been adapted collaboratively with partners for each of the Living Water sites. Living Water supported Te Taumutu Rūnanga in undertaking cultural health assessments.

## 2.2.6 Documentation and advocacy

The Ararira LII programme advocated for change, tracked progress, and told the programme story using a variety of techniques. Living Water staff have utilised a range of methods to drive change and share its narrative. Media engagement was key, with Living Water staff actively sharing milestones on platforms like LinkedIn, Twitter (now X), through local and national media and the programme’s website. The Living Water website serves as a repository of in-depth case studies and updates. Collectively, those records not only offer a comprehensive view of the various activities and projects and their associated contexts but also delve into specifics like project costs, lessons learnt, and the communities involved.

Living Water Ararira LII’s strategic digital outreach and hands-on experiences helped showcase the programme and its activities and lessons. Field trips involving the farming and science communities, Fonterra and DOC staff, school children and local catchment communities offered participants firsthand views of the programme’s initiatives and lessons. Over the life of the partnership, progress on projects and lessons were shared and advocated to central and local government and key organisations, such as the NZ Landcare Trust, who continue to support better outcomes for farming, freshwater and biodiversity. Across the wider Living Water programme collaborations with academic institutions, sponsorship and participation in conferences and symposiums demonstrated wider community engagement efforts.



Installing a woodchip bioreactor on-farm.

## 2.3 Outputs - by the numbers

Many indicators help assess success across multiple workstreams. These metrics are particularly useful for acknowledging progress in achieving outputs (the goods and services delivered by the programme).

<b>11</b> projects	<b>6</b> trials	<b>8</b> case studies
<b>100%</b> of Fonterra Farms have a Farm Environment Plan	<b>47k</b> natives planted at Yarrs Flat	<b>\$2.7m</b> invested over 10 years
Additional <b>\$2.67m</b> leveraged for restoration activities	Worked with <b>20</b> groups or organisations, including mana whenua	<b>\$25k</b> funding support for SDC Biodiversity Advisor
<b>1</b> instream sediment trap design	<b>4km</b> of habitat restoration trials along roadside waterways	<b>2</b> cultural health assessments done on the Ararira LII River

### 3. Outcomes - results and themes

This chapter highlights the impact of the Ararira LII programme and looks at who and what has changed because of Living Water activities. The 2018 Living Water logic model identified several intermediate outcomes. These outcomes, expected in the short to medium term (5-10 years), are crucial steps and foundational to the achievement of the desired long-term goals. The logic model acknowledged that the desired state changes at both the ecological and social levels happen over longer timeframes (15-20 years plus), so the full impact of Living Water activities would not be visible within the 10-year time frame of the programme.

For the Ararira LII programme, these intermediate outcomes included an emphasis on the importance of Yarrs Flat and Tārerekautuku/Yarrs Lagoon as central ecological assets within the water network. The programme also aimed to enhance the prominence of biodiversity, ecological, and cultural values within the drainage system. It sought active participation from mana whenua in projects and envisaged a wider adoption of innovative techniques by councils and land managers.

It is important to note that the organisational changes and outcomes for the two Living Water partner organisations are the result of collective efforts across all five catchments involved in the programme. Each catchment, including the Ararira LII programme, contributed to these overarching changes, underscoring the collaborative impact of the five Living Water catchment initiatives.

This chapter explores the contributions of Living Water to the outcomes of the Ararira LII programme, presented through two frameworks:

- A results table, offering a quick snapshot of progress based on the programme's 2018 logic model (refer to section 1.4 Theory of Change for a summary version of the logic model and its underlying assumptions)
- Outcomes by theme, which highlights broader changes resulting from the programme. These frameworks clarify how specific actions align with Living Water's overall goals and illustrate both the tangible and perceived intangible benefits in the community and ecosystem due to the programme's efforts

Outcome themes for the Ararira LII site include organisational changes, relational changes, ecological changes and valuing the environment, capability/capacity changes, financial investment and impact and scaling up and out.



### 3.1 Results table

This table below offers a snapshot of the progress made towards the outcomes identified in the programme’s 2018 logic model. The table outlines some of the results and changes observed.

Short and medium-term outcomes	Contributions to outcomes
<p>All Fonterra farmers are implementing freshwater actions in their FEP’s and targeted farms are participating in trials for freshwater management on-farm</p> <p>Other landowners in the catchment are implementing freshwater management actions on-farm</p>	<p>All catchment dairy farmers have FEPs. Living Water supported stream bank re-battering projects, nutrient and sediment reduction trials and riparian planting across four dairy farms (of nine). The Powells Road Waterway Enhancement project revitalised a 500-metre stretch of a roadside spring-fed drain, targeting the reduction of excessive aquatic weeds, stabilisation of banks, and improvement of riparian and instream habitat, while still providing drainage functions. The project became a focal point for education and engagement, hosting numerous field visits from diverse groups across New Zealand and internationally. This has extended its influence beyond the immediate community.</p>
<p>The ecological enhancement and management of Yarrs Flat and Tārerekautuku/Yarrs Lagoon is included in the plans of the responsible agencies</p> <p>Yarrs Flat and Tārerekautuku/ Yarrs Lagoon are valued by the catchment community as key ecological assets in the water network for their ecological integrity and as source areas for biodiversity</p>	<p>The restoration of Tārerekautuku/Yarrs Lagoon benefited significantly from Living Water’s early collaboration with the Selwyn District Council (SDC). 40,000 natives were planted at Yarrs Flat. Key initiatives such as developing a reserve management plan, forming a Landcare Group, and initiating willow control enhanced the wetland’s ecological health. This partnership also secured \$796,000 from the MfE Freshwater Improvement Fund for a four-year project beginning in 2022, funding extensive weed and pest control, waterway remediation, and native planting. These efforts aim to improve biodiversity, water quality, and hydrology.</p> <p>The collaboration between Living Water, SDC, Environment Canterbury, and Te Taumutu Rūnanga demonstrates the impact of joint efforts on ecological restoration, fostering community involvement and environmental stewardship within the Selwyn District. The community’s active involvement in Living Water activities, like the Canterbury Plant-Out Day at Yarrs Flat and the Kids Discovery Plant Out, underscores their recognition of Yarrs Flat and Tārerekautuku/Yarrs Lagoon as crucial ecological assets valued for their integrity and biodiversity significance.</p>

Short and medium-term outcomes	Contributions to outcomes
Biodiversity, ecological and cultural values are improving in the drainage network on Fonterra farms	Intermediate steps through supporting increased capacity for biodiversity advice for farmers (additional positions within SDC) and the wider water network redesign project focusing on the entire catchment drainage network is working towards improving biological, ecological and cultural values while continuing to support drainage.
Mana whenua are actively involved in Living Water projects and mātauranga Māori is integrated into our work	The programme strengthened its collaboration with Te Taumutu Rūnanga in 2018, establishing the advisory group Te Mana Ararira to facilitate structured engagement with various groups and agencies involved in the Ararira LII catchment. This partnership enabled two cultural health assessments of the catchment waterways. In 2020 the programme initiated a comprehensive redesign of the Ararira LII Drainage District, developing a plan that harmonised ecological, cultural, and drainage values throughout the catchment. This effort was supported by an MOU between the Living Water partners, Selwyn District Council, and Te Taumutu Rūnanga, emphasising the active involvement of mana whenua in enhancing the catchment’s management and sustainability.
Councils and other land managers have scaled techniques from Living Water activity to other catchments	Selwyn District Council has increased its biodiversity capability, supported by a new team of three full-time experts. Living Water directly supported the development of Fonterra’s digital platform for FEPs, trialled on Ararira LII catchment farms. This helped to provide access to biodiversity information and accelerate the delivery of FEPs by Sustainable Dairying Advisors (SDAs). The Catchment Management Plan and Implementation Guide are being used as a model by SDC for its other catchments, promoting the value of multifunctional drainage networks.

**Table 3:** The Ararira LII programme results table

## 3.2 Outcomes by theme groupings

The following outcome theme groupings reflect the people-centred changes that influence the long-term outcomes sought. Examples and snapshots reflect changes that the Living Water programme has contributed to.

### 3.2.1 Organisational changes

Organisations are inherently complex and relational, and changes to their functioning are influenced by multiple factors. Notably, Living Water contributed to adjustments in ‘business as usual’ practices and commitments, rather than initiating or directly leading these changes. It’s crucial to recognise that the changes and outcomes experienced by the two partner organisations were due to the collective efforts at all five Living Water sites. Each site, including Ararira LII, played a role in these broad changes, highlighting the collaborative impact across the Living Water catchments.

The partnership enabled staff directly involved from both organisations to gain a deeper understanding of each other’s perspectives, reducing polarisation. This fostered a more collaborative environment where solutions were jointly identified and trialled. As Living Water was a limited-term partnership, it was important that other local partners committed to sustaining the gains over time. Some stakeholders have made organisational changes and commitments because of Living Water.

**Fonterra:** The influence of the Living Water partnership led to organisational changes within Fonterra in some of the following ways:

- Directly supported the development of a digital platform for farm environment plans (FEP), trialled on Ararira LII catchment farms. This resulted in the integration of regionally specific environmental information within the FEP tool (such as soil types, physiographic information, significant habitats) and access to biodiversity information and accelerated the delivery of FEPs by Sustainable Dairying Advisors (SDAs).
- At a broader system level, through Living Water’s support for the national Farming with Native Biodiversity pilot, Fonterra developed its own formal in-house capability and training for SDAs so they can directly support farmers with biodiversity on-farm.
- Lessons from Living Water influenced the design of Fonterra’s Sustainable Catchments programme and guided how strategic decisions about partnering with the right people and groups in the right places to achieve objectives were made.
- Lessons from Living Water guided how and who Fonterra supported for system level change, such as Fonterra supporting the development and use of LandscapeDNA with Fonterra farmers and continued Fonterra involvement in the Whakamana Te Waituna partnership in Southland.

**Department of Conservation:** The influence of the Living Water partnership led to organisational changes within DOC in some of the following ways:

- Lessons from Living Water were instrumental in helping to shape DOC’s Ngā Awa programme, launched in 2019, which focuses on restoring the biodiversity of 14 rivers across New Zealand, from mountains to sea. The programme builds on the knowledge gained

through Living Water about the complex nature of land and water management and that it is intertwined with human influence and community dynamics. Approaches within Ngā Awa underscores the importance of this through a critical focus on collaboration, co-design, and co-leadership with iwi, hapū, and whānau.

- This more holistic view has also influenced internal structuring, particularly highlighting the importance for DOC rangers to establish and maintain positive local relationships, recognising these as key to successful conservation alongside scientific and technical expertise.
- The Living Water work helped raise the profile of DOC obligations and work related to freshwater species and habitat. This work takes DOC staff and projects beyond Public Conservation Land (PCL), which was not well recognised as “core work” at the time. The visibility of the Living Water partnership - which in itself was challenging given that perceptions of ‘dirty dairying’ were common - and its effort and resourcing invested in “Telling our story” helped elevate the profile of freshwater work within DOC. In 2018 significant additional funding was provided within DOC for freshwater focused work aligned to its revised strategy.

**Selwyn District Council:** As the Living Water partnership was time-bound, it is essential for local partners like Selwyn District Council (SDC) to sustain the improvements achieved. The Ararira LII programme has significantly contributed to three main areas, with the Council building on these advancements:

- Improving biodiversity in the catchment: SDC has aligned with Living Water’s focus on enhancing biodiversity within the catchment. Over a span of two years, the Living Water programme partially funded the role of an SDC Biodiversity Advisor. Recognising the importance of this position, the Council upgraded this part-time role to a full-time, permanent job and added two additional roles dedicated to biodiversity.
- Developing catchment scale plans: These plans were developed in the final phase of the programme and designed to enhance both biodiversity and drainage functions simultaneously. The co-designed Catchment Management Plan and Implementation Guide have subsequently become templates for other SDC catchments. This project not only facilitated the creation of effective catchment scale plans but also prompted wider discussions on the importance, and communal benefits of, the drainage network. In response to this evolving understanding, SDC introduced an environmental enhancement rate to secure more funding for advanced drain management strategies.

**Tārekeautuku/Yarrs Lagoon:** The long-term commitment to restoring and managing Tārekeautuku/Yarrs Lagoon provides a good example of a contribution to longer-term organisational changes and commitments. Building on this work, SDC has worked to help establish a reserve management plan, a local Wetland Care (or Landcare) Group, a website page with links to resources, and a collective commitment to the wetland’s restoration. With assistance from Living Water and other partners, the Council applied to the MfE’s Freshwater Improvement Fund and was awarded a \$796,000 grant for a four-year restoration programme. In 2023, contractors were engaged in a variety of restoration actions at the wetland.



### 3.2.2 Relational changes

Over the past decade, the Ararira LII programme bridged gaps and fostered collaborative relationships among stakeholders, leaving a legacy of strong foundations for future initiatives. While some of these relationships have concluded, leaving positive outcomes behind, others have initiated or supported partnerships that are ongoing, continuing to influence the catchment's management and restoration efforts.

- **Strategic alliances:** Living Water and UC-CAREX's partnership expanded waterway restoration experiments, sharing outcomes nationally and internationally. Similarly, the links with the Waihora Ellesmere Trust and Te Ara Kākāriki underscored the programme's commitment to working with others to build engagement with the community.
- **Te Mana Ararira establishment:** In 2017, this formalised the relationship between Living Water and Te Taumutu Rūnanga, providing a structured platform for dialogue and collaboration.
- **Tārerekautuku/Yarrrs Lagoon collaboration:** This project offered a valuable opportunity to strengthen connections between mana whenua, local organisations, and other key stakeholders. Securing funding and delivering conservation outcomes on the ground has laid a positive foundation for these relationships to continue growing and evolving, further enriching collaborative efforts in the district.
- **Reimagining Ararira LII waterways:** A 2020 MOU between Selwyn District Council, Te Taumutu Rūnanga, the Department of Conservation, and Fonterra set a collective vision for waterway management, integrating both ecological and cultural principles through a co-design approach. This has resulted in a Catchment Management Plan now serving as a model for other district catchments.

### 3.2.3 Ecological changes and valuing the environment

The Living Water programme in the Ararira LII catchment has achieved tangible ecological outcomes and contributed to an increase in environmental appreciation among various stakeholder groups. Through targeted efforts, the programme has directly contributed to environmental restoration, and supported a growing recognition of the value of natural landscapes.

- **Powells Road Waterway Enhancement Project:** This project revitalised a 500-metre stretch of a roadside spring-fed drain, targeting the reduction of excessive aquatic weeds, stabilisation of banks, and improvement of riparian and instream habitat, while still providing drainage functions. By transforming a former 'roadside drain' into a multifunctional demonstration site, it clearly demonstrated the potential of managing waterways to fulfil ecological, cultural, and drainage needs simultaneously within the drainage district. Moreover, the project became a focal point for education and engagement, hosting numerous field visits from diverse groups across New Zealand.
- **On-farm ecological changes:** Farm Environment Plans (FEPs) for Ararira LII catchment farmers bridged the gap between identifying issues and implementing solutions. This change, along with farmer involvement in on-farm trials, saw stream bank re-battering projects, riparian planting, sediment traps, nutrient filters and the fencing of springs taken up by farmers.

- **Tārerekautuku/Yarrs Lagoon restoration:** In the Ararira LII catchment, Living Water’s involvement directly contributed towards the ecological restoration and public appreciation of Tārerekautuku/Yarrs Lagoon. Living Water’s collaboration with the Selwyn District Council (SDC) in the early years of the project can be seen to have laid the groundwork for a series of targeted restoration efforts. Initiatives such as developing a reserve management plan, establishing a landcare group, and beginning willow control have been key early steps towards enhancing the wetland’s ecological health. This partnership also supported a successful bid for funding from the MfE’s Freshwater Improvement Fund, bringing \$796,000 to the project over four years starting in 2023. This funding boost has expanded the scope of activities to include comprehensive weed and pest control, waterway remediation, and native planting, contributing to the programme’s overarching goals of biodiversity improvement, water quality enhancement, and hydrological restoration. This contribution from Living Water, alongside those from SDC, Environment Canterbury, and Te Taumutu Rūnanga, highlights the value of collaborative efforts in ecological restoration, setting a foundational model for future endeavours. The widespread support from these stakeholders underscores a growing public commitment and valuation of the environment, manifesting through collective action and stewardship for the Selwyn District’s landscapes. As part of this community involvement a Tārerekautuku Yarrs Lagoon Care Group was formed.
- **Community engagement and education:** The programme’s emphasis on generating social value underscores the significance of community engagement and fostering appreciation for conservation values. This work aimed to foster connections with local people (families, groups and as individuals) by facilitating ongoing planting days and learning activities. Additionally, these activities, including engagement with primary schools, serve to educate and involve the community in long-term restoration efforts.



The Powells Road waterway enhancement trial demonstrated that riparian and instream habitat could be improved while still maintaining effective drainage.

### 3.2.4 Capability/capacity changes

The Ararira LII programme was a catalyst for the enhancement of skills and knowledge among staff from Living Water and various partner organisations, making a substantial contribution to building capacity and capability within the agencies and organisations involved.

- The Living Water team, with their foundation in ecology, agriculture, and water management, saw their collaborative and strategic skills grow through the programme. This growth in expertise facilitated a nuanced approach to the programme's social and organisational objectives as it progressed. The formation of collaborations and partnerships across the programme base, including with farmers, mana whenua and agencies, emerged as a key achievement. Importantly, the soft skills developed have been carried forward into other roles and positions by the staff involved.
- The adoption of a co-design approach in the LII Drainage District redesign proved essential, bringing together experts from diverse disciplines to pool knowledge and experiences. This strategy nurtured a co-design culture, blending scientific expertise with local insights from those on-the-ground to develop sustainable and appropriate waterway restoration solutions. By prioritising clear communication and the amalgamation of varied viewpoints, this approach prepared the ground for similar collaborative planning and waterway management efforts for other catchments in the district.
- On the ground, the programme led to practical insights. Knowledge about effective riparian planting in agricultural areas improved because of trials (such as the Powells Road Waterway Enhancement project). Involving both Canterbury and Lincoln University teams provided ideas on new tools for waterway challenges, innovative restoration methods, and enhanced student learning through applied real-world examples.



Living Water trialled and developed innovative methods for riparian planting on-farm.



### **3.2.5 Financial investment and impact**

Over the course of a decade, the Ararira LII programme saw significant financial investment and leveraging, with a total of \$2.7 million directly invested by Living Water and an additional \$2.67 million leveraged for restoration activities. Notable funding includes \$444,000 from the One Billion Trees and Jobs for Nature initiatives for native planting at Yarrs Flat, and \$50,000 from ECan for willow control in the same area. A substantial grant of \$796,000 was also secured from the MfE Freshwater Improvement Fund for a four-year restoration programme at Yarrs Lagoon, which commenced in 2022 with various restoration actions. Much of this funding has been spent within the catchment and wider community, directly benefiting the local economy by supporting local contractors and suppliers.

### **3.2.6 Scaling up and out**

The Ararira LII programme has effectively harnessed resources from partner organisations, facilitating the expansion of key programme components across the Selwyn District and further afield. This expansion leveraged existing resources, fostered networks of collaborative individuals, and motivated the sharing of experiences and successes.

Selwyn District Council has put more emphasis on biodiversity and now has a team of three experts who work full-time on biodiversity. This signals a deepening commitment to biodiversity and environmental stewardship in the district. This increased capability and capacity contributes to addressing waterway challenges but also supports bringing this knowledge into related areas. The results of biodiversity studies on farms have contributed to farm planning as part of Fonterra's Tiaki Sustainable Dairying Programme.

SDC is now using the Catchment Management Plan and Implementation Guide as a model for other SDC catchments. This work contributed to discussions about how important and helpful a well-maintained multi-goal drainage network is for the whole community. In line with this new way of thinking, SDC introduced a 'public good' rate to raise additional funding to help ensure that cultural and ecological values are part of waterway/drainage management in the district.

The Living Water partners have integrated the relationships, tools, and methods developed in Ararira LII, along with learnings from other catchment sites, into their broader organisational strategies. This integration encourages continued collaboration and innovation among the partners.



## 4. Insights, challenges, and lessons

Over the past decade, the Living Water Ararira LII programme emerged as a significant learning platform. Along the way, staff and programme partners had to navigate through real-world challenges, including unexpected events like the COVID-19 pandemic, to pursue the programme's goal of farming and freshwater thriving together. This chapter aims to distil the essence of these collective experiences and focuses on three key areas from the Ararira LII programme that highlight the breadth of our learning through these collaborative endeavours.

This exploration examines the insights, challenges, and lessons arising from our collaborative efforts in these three areas. It acknowledges how a range of catchment participants and activities contributed to the overarching success of environmental and community objectives. Through a reflective lens, the insights and lessons derived from this programme are examined, viewing challenges and surprises as catalysts for deeper learning and adaptation. This approach honours the diverse contributions of partners and stakeholders, fostering a culture of shared learning and continuous improvement.

Understanding the concept of co-benefits is vital in appreciating the complexities of such programmes. Co-benefits are the additional positive outcomes that arise from a single programme activity, often extending beyond the primary goal to impact multiple areas. In complex programmes like Living Water, where activities are interconnected, co-benefits illustrate how actions in one area can lead to positive effects in others. For example, an ecological restoration project might not only enhance biodiversity but also strengthen community relationships and boost local economies. Understanding co-benefits illustrates how integrating activities across various work areas broadens the impact.

While this chapter concentrates on three specific areas within the Ararira LII programme, it is important to recognise that the insights derived are not confined to this site alone. Many lessons resonate across other Living Water catchments, underscoring the interconnected nature of our learning and efforts. Additionally, lessons from evaluations at other sites can inform understanding in this catchment. This chapter can also serve as a resource for facilitators and catchment communities, providing relevant prompts, insights, and practical guidance to aid future discussions, reflections, and strategic planning.

## 4.1 Focusing on ecological wins

The Tārerekautuku/Yarrs Lagoon restoration stands out as a significant project within the Ararira LII programme. Despite the wetland's degradation due to land drainage, weed invasion and habitat modification, it remains a vital freshwater habitat for Te Waihora catchment due to its diversity of indigenous species and significant scale. The project aimed to highlight the lagoon's significance, improve biodiversity values, and support restoration efforts.

### Co-benefits

- **Relational:** Initiating work on the margins of Te Waihora linked the project to a broad network of people, communities, and organisations with an interest in the area, providing the relational co-benefit of strengthened community ties and broadened support for the project.
- **Community involvement:** Restoration work, particularly planting, provided many opportunities for schools and community groups to engage “hands on”, directly connecting with Tārerekautuku/Yarrs Lagoon. SDC support for a local landcare group also fostered community engagement and participation in restoration efforts, highlighting the community involvement co-benefits.
- **Expanding funding support:** A four-year restoration effort began in 2022, with the support of mana whenua and the local community. The project, led by SDC, received a \$796,000 MfE grant for weed and pest control, planting, waterway remediation, and other restoration activities, showing the funding support co-benefit that enabled comprehensive restoration activities.

### Insights, challenges, and lessons

- **Long-term gains:** The focus on restoration in this area provided significant long-term ecological benefits. The restoration efforts not only contributed to the ecological health of the lagoon but also raised awareness about its significance. This insight underscores the value of sustained effort and commitment.
- **Collaboration:** The project demonstrated the importance of collaboration between stakeholders, including the Council, mana whenua, community groups, and funding agencies. Working together boosted funding, expanded skills, knowledge and networks that were key to the success of the restoration efforts.
- **Initial focus areas are important:** There was some initial concern that the early focus of the Ararira LII programme had a traditional conservation land focus rather than working on-farm, but it provided an opportunity to get quick wins on the board, while also building relationships and profile in the catchment. This lesson emphasises the importance of strategic initial focus areas.
- **Practical insights:** On-the-ground activities have yielded valuable insights, such as improved methods for riparian planting in agricultural areas and innovative restoration techniques, enhancing the practical application of project learnings.

- **Biodiversity advisor role:** Establishing a council biodiversity advisor position facilitated easier integration of biodiversity advice into projects. Living Water’s support for the initial position helped demonstrate the value of the role being in-house, which resulted in it being made a full-time, permanent role, with additional roles subsequently added. This lesson highlights the importance of dedicated in-house roles in building capability and capacity.
- **Being plan ready:** Securing nearly \$800,000 for further restoration underscored the importance of having comprehensive information and monitoring resources to support restoration initiatives. This insight highlights the value of being ‘plan ready’ for funding opportunities.



Tārerekautuku/Yarrs Lagoon, with willow control underway.

## 4.2 Scaling up – moving from trials to redesigning catchment waterways

The Ararira LII Catchment Water Network Redesign Project represents a significant step forward in the management of lowland waterways. It focused on developing a Catchment Management Plan (CMP) and Implementation Guide (IG) to enhance biodiversity and cultural outcomes while providing effective drainage.

The CMP details strategies for managing the Ararira LII drainage network, and the IG identifies key areas for effective catchment transformation, integrating considerations of practice change into the network's biotechnical design. Other SDC catchments have subsequently adopted the Catchment Management Plan and Implementation Guide as benchmarks. These developments have sparked conversations on the significance and utility of a well-kept multi-purpose drainage network for the community. Embracing this progressive perspective, SDC has introduced a 'public good' rate to generate additional funds, ensuring that cultural and ecological considerations are integrated into waterway and drainage management across the district.

### Co-benefits

- **Enhanced collaborative skills:** The improvement in collaborative skills through the co-design process stands out as one of the most significant co-benefits. These skills are crucial for the success of future environmental projects and foster a culture of effective teamwork and shared problem-solving across various contexts.
- **Valuing the environment:** The increased appreciation and understanding of ecological and cultural values among the wider SDC drainage management team supports a holistic approach to environmental management. This co-benefit influences decision-making and prioritisation in future projects, embedding a deeper respect for biodiversity and cultural heritage in environmental policies and practices.
- **Scalable model for waterway management:** The development of a replicable and adaptable blueprint for managing waterways at the catchment level represents a fundamental shift in approach. This co-benefit supports a unified and efficient strategy for waterway management, embodying elements of innovation and strengthened inter-organisational relationships through its potential for widespread application.

### Insights, Challenges, and Lessons

**Adapting contracting and initial setup:** Flexibility in contracting is crucial for accommodating the changing needs of environmental projects, especially in complex endeavours aiming for innovative approaches. This emphasises the importance of adapting contracting practices to ensure projects can effectively respond to evolving requirements within co-design arrangements.

**Establishing collaborative foundations:** The unseen but essential groundwork of engaging key stakeholders from the council, rūnanga, and drainage committee for several years prior to signing an MOU was pivotal in aligning perspectives and fostering a unified vision for



the project. This early collaboration formed the basis for successful project implementation, emphasising the importance of building strong collaborative foundations for environmental initiatives.

**Learning about co-design:** Early, inclusive stakeholder collaboration through co-design encourages meaningful dialogues between professionals and those with lived experience. This insight is recommended as best practice for future projects.

**Resourcing projects to support co-design:** Effective co-design necessitates two-way communication and a supportive culture. This sounds simpler to achieve than is often evident in practice. Facilitation by a social coach is often necessary, beginning with a clear vision and a shared understanding of values.

**Implementation guide development:** The IG supports the CMP's application by aligning partner efforts with the plan's vision, framing the challenge as a people issue and requiring clear communication and coordination.

This lesson emphasises the need for a structured process for collaboration which is essential for successful implementation while allowing for adjustments in response to changing conditions.

**A wider-scale systems approach:** A 'whole of catchment' approach to planning encourages understanding of systemic connections. This insight highlights the importance of interconnectedness from diverse perspectives.

**Enhancing monitoring and evaluation (M&E) practices in catchment change:** The Implementation Guide (IG) promotes an emphasis on M&E for adaptive management. Current catchment monitoring primarily focuses on data collection rather than on informing decision-making, particularly given evaluation is often overlooked. This challenge underscores the need to improve M&E practices across projects to ensure data are effectively used to inform adaptive management and enhance overall effectiveness.



The Catchment Management Plan (CMP) and Implementation Guide (IG) for the LII/Ararira Drainage District.



## 4.3 Building capacity and capability

The Ararira LII programme contributed to the capacity and capability within various organisations, catchment groups, and individuals engaged in the initiative. While the programme substantially uplifted the skills and knowledge base of the Living Water team, it also aimed to foster a culture of collaboration and co-design among partners. Despite these advancements, the programme underscored the challenges associated with integrating social skills and co-design methodologies into conventional organisational frameworks, spotlighting the need for their broader acknowledgment and implementation to bolster freshwater restoration efforts effectively.

### Co-benefits

- **Skills and knowledge development:** The programme provided capability building by offering the opportunity for the Living Water team to develop improved “soft” skills on the job. This knowledge and development equipped them to navigate the programme’s social, cultural, and organisational objectives more effectively.
- **Partner engagement:** A robust partnership with the Selwyn District Council led to extended efforts in catchment planning and biodiversity projects. This co-benefit reflects the positive impact of collaborative efforts on local governance and environmental restoration.
- **Co-design approach:** The programme’s adoption of a co-design approach in the LII-Ararira Drainage District redesign brought together a diverse array of experts. This co-benefit offers a more inclusive and often more effective mode of operation, despite being relatively novel among consultants and organisations.
- **Biodiversity focus:** Selwyn District Council now has three in-house biodiversity experts, highlighting the co-benefit of prioritising biodiversity in catchment management. This underscores the need to build internal expertise for effective ecological management.



By helping to fund a biodiversity adviser role within Selwyn District Council, Living Water helped to increase the capacity and capability for biodiversity gains in the catchment.

## Insights, challenges, and lessons

- **Skills development:** The programme’s experience underscores the importance of acknowledging and leveraging interpersonal and organisational capability building opportunities, even when they are not explicitly outlined in project plans or role descriptions. Soft skill development among team members, although not initially prioritised, proved invaluable for managing multi-stakeholder initiatives and navigating complex project dynamics.
- **Capacity-building trial:** The experience with establishing in-house biodiversity expertise within the Selwyn District Council also illustrates the importance of providing first-hand experience to recognise the value of certain skill sets. This highlights the necessity of investing in initial (short term) capacity building efforts to demonstrate the benefits and garner broader support for similar initiatives in the future.
- **Collaboration skills:** The programme highlighted the importance of having skilled management to bring people together, facilitate collaboration, and support learning of collaborative processes. This requires having skills that link facilitation and co-design, alongside a process that empowers and builds the skills of the group too.
- **Challenges of co-design:** Introducing co-design into the process brings uncertainty, necessitating organisations to balance power dynamics and actively listen to other stakeholders.
- **Challenges of integrating social skill sets:** The programme revealed difficulties in integrating social skills into predominantly technical frameworks. Recognising and valuing these “soft” skills is essential for effective multi-stakeholder management, yet this remains a challenge in mainstream organisations.

Collectively, these and other evaluation reflections on collaborative initiatives from the other Living Water sites, lay the groundwork for future planning. They aim to sustain the positive impacts of this work, providing guidance for future environmental stewardship and community engagement. The potential of these insights to reach a broader audience underscores the hope that the experiences and lessons detailed here will inspire and support similar efforts elsewhere, fostering a culture of collaboration, sustainability, and resilience. Presenting these areas as prompts for facilitated discussions raises the possibility that the evaluation report will serve as a living document, guiding and informing ongoing and future initiatives.

# 5. Progress assessment and recommendations

This concluding chapter synthesises the diverse experiences and outcomes from the decade long Ararira LII programme, guided by its ambitious goal to transform the drainage network into a thriving ecosystem within a productive agricultural landscape. Here, we critically evaluate the programme’s alignment with its initial Theory of Change, assess the efficacy of its underlying assumptions, and revisit the guiding principles of the Living Water initiative. This reflective examination will highlight both the achievements realised and the issues faced, culminating in a set of strategic recommendations aimed at informing future environmental management initiatives. Drawing these together, we aim to contribute to broader discussions on sustainable catchment management practices.

## 5.1 Programme achievements and outcomes

The Ararira LII programme has navigated a ten-year developmental trajectory characterised by evolving strategic focuses— from initial nature restoration efforts to a more comprehensive systemic redesign in lowland catchment waterway management. Initially guided by an implicit set of assumptions, the programme formalised its national planning, monitoring and evaluation framework following a strategic reset, introducing a detailed Theory of Change and logic model as outlined in Chapter 1. This pivotal adjustment marks both the national and catchment programmes’ adaptive response to emerging insights and challenges.

This section outlines how the Ararira LII programme has met the planned activities and outputs and assesses its contributions to the expected outcomes. The subsequent discussion examines these achievements considering the evaluative evidence gathered across the programme’s lifecycle, aiming to provide a balanced view of both the accomplishments and areas where expectations have not been fully realised.

### 5.1.1 Achievement of activities and outputs

The Ararira LII programme successfully delivered a range of activities and outputs, many of which were charted in the logic model. The scope of the programme was marked by partnerships and collaborations that extended beyond traditional organisational boundaries, drawing in a broad spectrum of in-kind support, knowledge, and expertise. These collaborative relationships were instrumental in the successful implementation of activities ranging from habitat restoration at Yarrs Flat and Tārerekautuku/Yarrs Lagoon, to developing an improved waterway catchment management plan approach and template applied across the district.

Key strategic alliances with partners, particularly Te Taumutu Rūnanga and Selwyn District Council, played a crucial role in these achievements. This cross-sector partnership

approach not only ensured the accomplishment of specific activities and outputs but also cultivated a strong culture of cooperation and shared objectives. This was demonstrated in the Tārerekautuku/Yarrs Lagoon collaboration, the shared interest in developing biodiversity expertise within Selwyn District Council, and the co-design process used to develop the Ararira LII Catchment Management Plan. The collaborative framework underpinning the programme not only aligned well with operational deliverables, but also enhanced the overall impact of the programme. These synergies fostered innovative solutions and leveraged the collective capacities of the organisations, leading to significant ecological and community benefits.

Technical advancements have played a crucial role in the programme's success. The co-design process for waterway management and the use of innovative tools in on-farm trials exemplify how technical innovations were integral to achieving programme goals. Embedding these technical innovations within adaptive management practices has contributed to a process of continuous improvement, allowing the programme to better respond to emerging challenges and opportunities, thereby achieving long-term sustainability goals.

The programme's success in these areas reflects an appreciation of the need for integrated approaches to environmental management, where cultural, ecological, and community dimensions are interwoven. By maintaining a focus on both immediate outputs and broader systemic impacts, the Ararira LII programme has set a precedent for future restoration efforts, emphasising the importance of collaboration, strategic alignment, and holistic planning in achieving sustainable outcomes.

### **5.1.2 Contribution towards outcomes**

The Living Water Ararira LII programme demonstrated impact beyond its immediate objectives, contributing to both anticipated and emergent outcomes. Chapter 3 outlines how the programme led to substantial changes in organisational, relational, ecological, and environmental spheres. Notably, the Selwyn District Council (SDC) effectively leveraged insights from Living Water to enhance its biodiversity capabilities. By expanding its team and adopting co-designed management plans, SDC demonstrated a proactive shift towards integrating ecological and cultural values into catchment (and 'drainage network') management that supports broader community benefits and sustainable environmental stewardship.

A key aspect of the programme's success was the effective communication channels maintained with Te Taumutu Rūnanga, that were matched by the Rūnanga's supportive involvement in Living Water activities and objectives. The programme facilitated increased stakeholder engagement, successful implementation of freshwater management actions, and increased awareness and understanding of the issues and solutions among stakeholders and the broader community.

The programme's efforts in promoting biodiversity and ecological restoration, as seen with the Powells Road Waterway Enhancement and Tārerekautuku/Yarrs Lagoon projects, have led to visible improvements in habitat quality and biodiversity indices. Building relationships

with the Council, Rūnanga, and drainage committee laid the foundation for project implementation. This early collaboration underscores the importance of building strong collaborative foundations for environmental initiatives.

The mix of relational and on-the-ground outcomes laid a strong foundation for the co-design approaches utilised in waterway management planning (CMP & IG), subsequently adopted as models for other Selwyn District catchments.

### **5.1.3 Areas for improvement**

Despite its many successes, the Living Water Ararira LII programme did encounter areas where the initial Theory of Change proved overly optimistic. For instance, the programme's initial focus on public conservation land within the Ararira LII catchment secured quick wins and built a profile in the catchment, but it was difficult to engage landowners directly. This underscores the challenge of balancing immediate ecological gains with long-term sustainable community engagement.

Reflecting on this and broader lessons learned from Living Water, it is evident that a more integrated approach to social and organisational performance assessments is required to engage with diverse landowners. While successful in enhancing biodiversity and engaging Selwyn District Council as a key partner, this programme revealed the complexities of managing the diversity of catchment-wide land manager (farmer/landowner) expectations, highlighting the need to develop better, more diverse outreach strategies for the diversity of land users (such as arable farmers, drystock farmers and lifestyle block owners). These insights suggest that future programmes could benefit from a more nuanced understanding of stakeholder dynamics and community engagement.

### **5.1.4 Contribution to unplanned outcomes**

The programme also yielded unexpected outcomes that were not initially outlined in the original planning documents. For example, the impact of co-funding a biodiversity adviser within Selwyn District Council exceeded expectations, resulting in the establishment of three full-time biodiversity officers at SDC. Additionally, groundwork initiated for the development of a restoration plan for Tārerekautuku/Yarrs lagoon, with the input and support of the newly created biodiversity role within SDC, set the partners up for gaining significant funding in later years by being plan ready.

These unplanned outcomes, while not initially foreseen, have provided valuable insights for the Living Water programme partners and are also likely to be useful to local and regional councils and others managing lowland waterways.



### 5.1.5 Reflecting on guiding principles and assumptions

Throughout the Ararira LII programme, the guiding principles and assumptions remained pivotal in shaping the programme's trajectory and outcomes. The principles of collaboration, knowledge sharing, and commitment to scalable solutions have been evident in the strategic partnerships formed and the inclusive approaches adopted. These partnerships have facilitated a broad spectrum of ecological improvements and aimed to make these enhancements culturally relevant. The middle and final phases of the Ararira LII programme recognised the importance of considering the drainage system at the catchment scale, rather than focusing solely on individual reach-specific actions. This holistic catchment management plan (CMP) approach has been adopted by the Selwyn District Council (SDC) and is now being used to develop management plans in their other catchments.

The assumptions that effective change requires long-term collaboration, and that systemic thinking is necessary to achieve meaningful impact have been validated through the programme's efforts to foster a wide understanding and engagement in sustainable practices. This systemic approach has proven crucial in navigating the complexities of catchment management and in advancing towards the programme's long-term goals of establishing resilient ecosystems and responsible farming practices. Importantly, the operation of the programme supports the growing recognition of the need to engage widely for practice change—from mana whenua, agencies, and sector bodies to land managers, schools, rural intermediaries, and other community groupings—to fully realise catchment-scale change. The Implementation Guide (IG) supports the CMPs application by aligning partner efforts with the plan's vision, framing the challenge as a people issue and requiring clear communication and coordination across partners, organisations, and other groupings.

The evaluation of these principles and assumptions, considering the programme's achievements and challenges as discussed throughout this report, demonstrates an alignment between the programme's strategic intent and its operational execution. This reflection not only affirms the validity of the initial theoretical framework but also highlights areas for refinement. By aligning actions with these foundational principles and learning from each phase of implementation, the Ararira LII programme can help inform future environmental management projects, aiming for holistic, sustainable outcomes that are both environmentally sound and inclusive.

## 5.2 General recommendations

Reflecting on the Ararira LII programme's journey illustrates the power of collaboration and adaptive management in achieving environmental and community objectives in complex place-based initiatives. While celebrating the accomplishments, this analysis also recognises areas for improvement and the emergence of valuable unplanned outcomes. These experiences offer critical lessons for the Living Water programme partners and stakeholders involved in managing lowland waterways.

For future environmental projects, it is essential to learn from both the challenges faced and the unexpected successes encountered. Adapting strategies based on these experiences, seizing new opportunities as they arise, and committing to continuous learning will enable future initiatives to build on the solid foundations laid by this programme. This approach aims to foster more effective and inclusive environmental management efforts, enhancing the well-being of both communities and natural environments.

Despite the conclusion of the decade-long Living Water partnership activities, catchment management remains a dynamic and ongoing process. These general recommendations are intended for organisations, mana whenua, and communities as they continue to steward their catchments, emphasising the need to focus on intermediate results—the critical “supporting structures”—as a pathway towards achieving desired long-term environmental and social goals.

- **Strengthen cross-sector and inter-agency collaboration:** This evaluation highlights the role of inter-agency and cross-sector collaboration in achieving significant outcomes, such as the development and implementation of the Catchment Management Plan. Future programmes should continue to build on this collaborative momentum, reviewing and enhancing organisational processes to overcome administrative and implementation challenges.
- **Diversify capacity and capability:** The programme's success, in areas ranging from habitat restoration to catchment plan development, underscores the need for a diverse skill set. This includes technical expertise as well as interpersonal and relational skills. Future initiatives should prioritise building teams that are not only technically proficient but also adept in facilitation, collaboration, and communication.
- **Provide more emphasis on evaluation and adaptive management:** Adopting a flexible approach to catchment management is crucial. Future strategies should include robust monitoring and evaluation systems with formal review points to adapt based on ongoing insights. This adaptive management should extend beyond environmental impacts to consider social, economic, and cultural dimensions, ensuring comprehensive programme effectiveness.
- **Leverage co-benefits:** Recognising and integrating the extensive benefits of waterway management—from biodiversity enhancement to fostering community engagement and participation in restoration efforts—is crucial. Early identification of potential co-benefits during the planning stages, coupled with openness to emergent benefits, will maximise the impact of environmental programmes.

- **Integrate technical innovations into adaptive management:** Integrate technical innovations into adaptive management frameworks to support sustainable catchment-wide ecological improvements. This can involve the application of innovations in areas such as co-design, restoration techniques, real-time monitoring systems, and data-driven decision-making processes to enhance the effectiveness and resilience of environmental initiatives.

These recommendations, derived from the insights, challenges, and practical experiences of the Ararira LII programme, contribute to advancing catchment management practices that are inclusive, adaptive, and sustainable. Collectively, these and other evaluation reflections from the Living Water sites aim to guide future planning. By presenting these recommendations as prompts for facilitated discussions, we hope the evaluation will continue to serve as a dynamic resource, informing ongoing and future collaborative initiatives.



Longfin tuna/eel exist in the waterways of the Ararira LII catchment, with ‘drains’ being some of the last remaining habitat for this taonga freshwater species within farming landscapes.

# Appendix I: Information sources for evaluation

The development of this evaluation report is grounded in a participatory model that prioritises collaboration and inclusive engagement across a wide array of stakeholders. The approach has integrated insights and contributions from various partners, enriching understanding of the outcomes and impacts of the Living Water initiatives. Presented below is an outline of the key information sources and participatory processes that have informed the evaluation.

## Ararira LII programme specific sources

- Living Water Evaluation Team: Developed in close collaboration with an evaluation team comprising 6 members (See Appendix II). The team comprised two independent evaluation consultants, and included site-specific staff and national programme staff from both Fonterra and the Department of Conservation (DOC).
- Four individual interviews with programme participants.
- Living Water [Ararira LII River/Te awa o Āraiara](#) webpages: Served as a primary source of both current and archived information on programme objectives, activities, and outcomes.
- Ararira LII programme monitoring data - from national Living Water site monitoring data (unpublished).
- Ararira LII Living Water webpage project summaries:
  1. [Ararira-LII Catchment Water Network Redesign Project](#)
  2. [Bioreactor trial: reducing nitrates](#)
  3. [Co-designing solutions for a complex catchment network](#)
  4. [Farm Impact Reduction](#)
  5. [Living Water & Selwyn District Council Partnership](#)
  6. [In-stream sediment traps](#)
  7. [Powell's Road Waterway Enhancement](#)
  8. [Silverstream Project – University of Canterbury, CAREX Initiative](#)
  9. [Te Mana Ararira](#)
  10. [Two-stage channel: flood management and reducing contaminants](#)
  11. [Yarrs Flat Wildlife Reserve](#)

## Wider Living Water evaluation activities

### 1. Evaluation design and ethics

- Development of [Living Water National Planning, Monitoring & Evaluation Framework](#) (July 2017-2018).
- [Logic model, indicators and monitoring plans for site](#) (April 2018).
- An evaluation ethics plan was developed with the Living Water management team and agreed with the Senior Responsible Owners for the Living Water Partnership from the Department of Conservation and Fonterra. Those involved in the Living Water programme evaluation followed the agreed processes and complied with the ethics protocol.
- The independent evaluation consultants were responsible for undertaking individual and group interviews to assure participant confidentiality and anonymity.
- Development of Performance Story and CAME evaluation methodologies underpinning final individual site evaluation reports. This evaluation design was developed by the independent consultants, and then fine-tuned in consultation with each site Evaluation Team.
- Cross-site Learning: The evaluation methodology was significantly enriched by learnings from across all the Living Water sites. This broader perspective was crucial in shaping insights and understanding of each site's unique challenges and successes, fostering a comprehensive understanding that reflects the interconnectedness of the Living Water initiatives.
- Development and implementation of the Whakamana te Waituna Monitoring & Evaluation Framework, Programme & Action Plan in 2019.
- Two participatory partnership evaluations for Living Water management and governance groups (2018 and 2021).
- Waima Waitai Waiora (Wairua) Mana Enhancing Partnership review (March 2022).
- National evaluation reflection with Living Water team (December 2022).

### 2. Interviews with past and present staff

- Conducted one-on-one interviews with past Living Water staff across 3 sites, gaining historical perspectives and insights into the evolution of programme activities and strategies.

### 3. Engagement with representatives outside the Living Water Partnership

- At certain sites, we engaged with 1 or 2 representatives from other partner organisations, broadening our perspective on collaborative efforts and their impacts

### 4. Regular meetings with programme management

- Fortnightly meetings with two members of the Living Water programme management team were instrumental in aligning the evaluation process with the programme's overarching goals and objectives. These two members were also involved as members of the site evaluation teams (See Appendix II)



## 5. Annual Living Water hui and reflections

- Including a final closure hui and field trip held with both Living Water staff and stakeholders and presentations and field trip for NZARM conference (November 2023).

## 6. Living Water Site Evaluation Reports

The development of these reports provided detailed insights into the specific activities, outcomes, and lessons learned at each site, contributing to a nuanced understanding of local and site-specific contexts.

- Wairua River Evaluation Report
- Pūkoro-Miranda Evaluation Report
- Waikato Peat Lakes Evaluation Report
- Ararira LII Evaluation Report
- Whakamana te Waituna Evaluation Report<sup>1</sup>
- Site reports found on the [Living Water website](#)

## 7. Living Water National Evaluation Summary

A national evaluation summary provides an overview of the achievements and outcomes of the Living Water partnership and draws together the lessons and recommendations from the five site evaluation reports.

- Report can be found on the [Living Water website](#)

## 8. Place-based Engagement and Impact tool

The Place-based Engagement and Impact tool was created to aid organisation staff and stakeholders in place-based initiatives. It provides flexible guidelines for implementing complex environmental and community programmes.

- The tool can be found on the [Living Water website](#)

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1. The Whakamana te Waituna Evaluation Report was commissioned by the Whakamana te Waituna Trust, of which Living Water was a key member and funder.

## 9. General documentary and secondary sources

- [Living Water programme](#) website: Served as a primary source of both current and archived information on programme objectives, activities, and outcomes
- [Living Water \(2018, updated 2020\) National Planning, Monitoring & Evaluation Framework](#)
- Living Water [Governance and Operating model](#)
- [Living Water Story \(ebook\)](#): A celebration and summary of experiences and learnings from all five sites offered a holistic view of the programme's objectives and achievements
- General material: Reviewed additional materials of a more popular nature, including newsletters, media releases, and public communications. These sources helped capture the broader narrative and public engagement strategies of the Living Water initiative

This multifaceted approach to gathering information has enabled a comprehensive and nuanced evaluation of the Living Water initiatives across the sites. It reflects our commitment to a participatory and inclusive methodology, ensuring that the insights and learnings derived from this evaluation are deeply informed by the experiences and expertise of all stakeholders involved.

## Reports and other programme documentation

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# Appendix II: Author biographies

## External evaluation consultants

### Will Allen

Consultant Evaluator

Dr Will Allen is an independent evaluator and systems scientist with over 30 years of experience in sustainable development and resource management. His work bridges local, indigenous, and organisational perspectives, helping multi-stakeholder groups develop shared goals, actions, and indicators. An inaugural Board member of the Aotearoa New Zealand Evaluation Association (ANZEA), he has managed the Learning for Sustainability (LfS) website since 2006. The site is a knowledge hub for methodologies, skills and processes needed to support collaboration and address complex sustainability issues.

### Viv Sherwood

Consultant Evaluator

Viv Sherwood (VM Works) is an independent consultant with almost 20 years' experience in government sector operational roles in community development and environment sectors. Viv has also worked with and within iwi structures on environmental management. Her monitoring and evaluation work is informed by practical experience - in operational planning and delivery, the complexity of working in partnerships, as well as community development approaches - with participatory and complexity-aware monitoring and evaluation (CAME) approaches preferred.

## Living Water Ararira LII Evaluation Team

### Sarah Yarrow

Living Water National Manager

Sarah Yarrow managed the national Living Water programme, bringing together a diverse range of stakeholders to enhance freshwater ecosystems while supporting sustainable agriculture. Her leadership and strategic vision have been instrumental in guiding the programme's development and implementation across multiple catchments.

### Katie Collins

DOC Freshwater Science Lead

Dr Katie Collins was the Principal Scientist for the Living Water programme, providing scientific guidance and expertise to ensure the programme's activities are grounded in robust evidence and best practices. Her work involved close collaboration with site leads, researchers, practitioners, and community members to drive impactful environmental outcomes.



**Robin Smith**

DOC Site Lead

Robin Smith has extensive experience in conservation and natural resource management, having recently served as a Senior Ranger for the Department of Conservation (DOC) in Christchurch. In his role as Site Lead for the Living Water programme at the Ararira LII site, Robin was instrumental in driving initiatives aimed at enhancing waterway health and promoting sustainable land use practices.

**Nicki Atkinson**

Living Water Impact & Partnerships Manager

While in the role of Impact and Partnerships Manager for the Living Water programme, Nicki was instrumental in driving catchment level science and engagement in Living Water and established the Ararira-LII Network Redesign project. Nicki subsequently moved on to a role within the Department of Conservation as Manager, Freshwater Ecosystems and Threats and continued her strategic involvement with Living Water as a member of the Steering Committee.