

OUR PROGRESS

MAKING A DIFFERENCE IN
FIVE KEY CATCHMENTS

ANNUAL REPORT
JULY 2014–JUNE 2015

**LIVING
WATER**



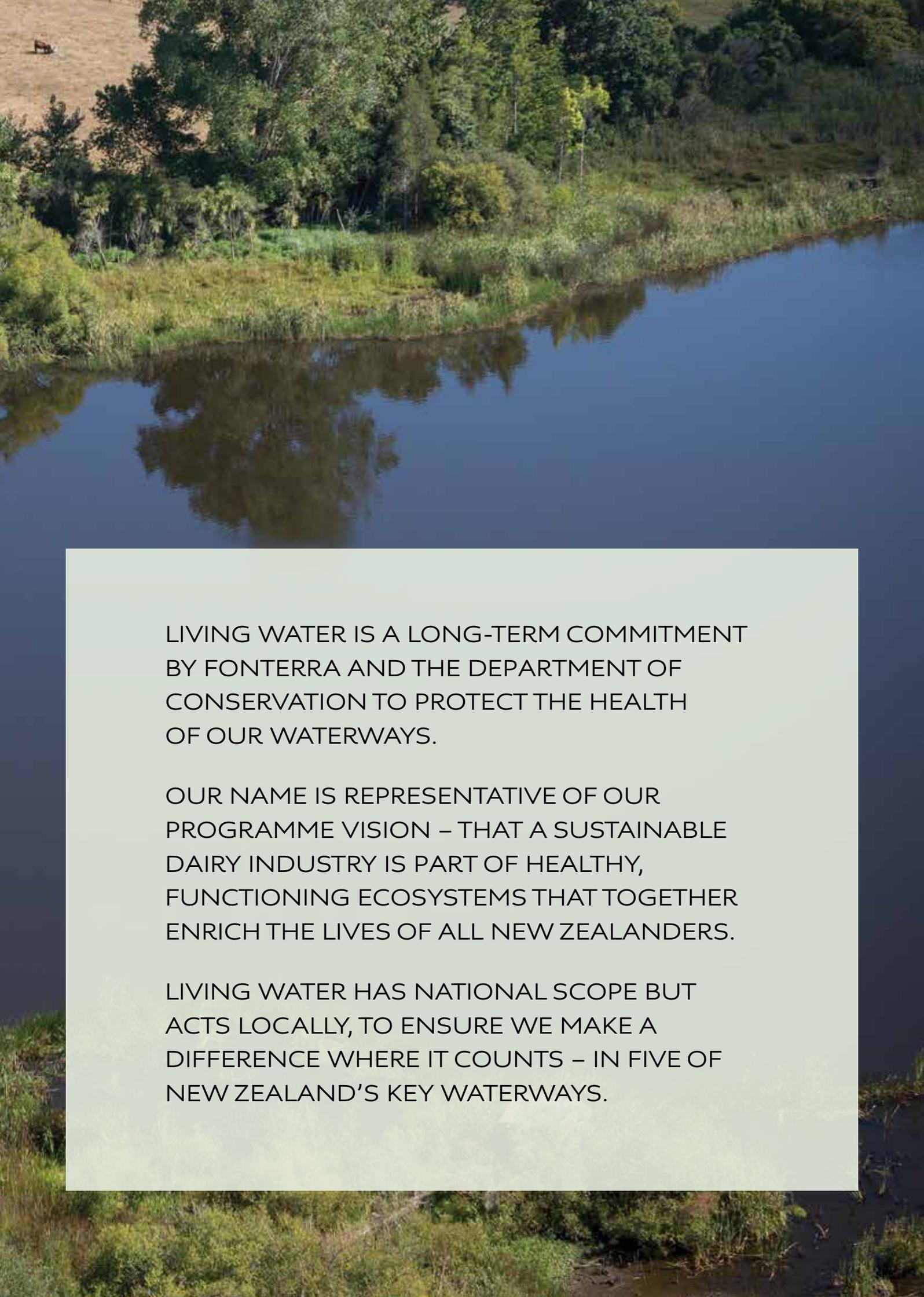
WORKING TOGETHER TO CARE
FOR FIVE KEY CATCHMENTS



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LIVING WATER IS A LONG-TERM COMMITMENT BY FONTERRA AND THE DEPARTMENT OF CONSERVATION TO PROTECT THE HEALTH OF OUR WATERWAYS.

OUR NAME IS REPRESENTATIVE OF OUR PROGRAMME VISION – THAT A SUSTAINABLE DAIRY INDUSTRY IS PART OF HEALTHY, FUNCTIONING ECOSYSTEMS THAT TOGETHER ENRICH THE LIVES OF ALL NEW ZEALANDERS.

LIVING WATER HAS NATIONAL SCOPE BUT ACTS LOCALLY, TO ENSURE WE MAKE A DIFFERENCE WHERE IT COUNTS – IN FIVE OF NEW ZEALAND'S KEY WATERWAYS.

FOREWORD

The Living Water partnership is an important part of our Co-operative's ambition to making a difference in the lives of 2 billion people.

Water is an essential resource for dairying and as stewards of the land our farmers are dedicated to improving water quality, and protecting and supporting restoration of natural habitats. They are doing good work to support this on their farms – fencing waterways, undertaking riparian planting and investing in infrastructure – and they extend their work beyond the farm gate to support the Living Water partnership.

Taking responsibility for water is at the heart of who Fonterra is. The Living Water partnership is part of the work we are doing to champion the health of our farms and waterways.

After the first full year of operation for the partnership I am encouraged to see real progress on the ground. It has been a team effort between our farmers, iwi, local councils, schools, experts and our partners in the Department of Conservation.

Projects underway include the trialling of a filter to reduce nitrate levels at the Waituna catchment, riparian planting around one of the Waikato peat lakes, a wetland developed on one of our farmer's farms in Hikurangi and the planting of more than 25,000 plants.

In each project, partnerships have provided the brain power and manpower to achieve success. As a Co-operative we know collective effort is always better than individual effort. The Department of Conservation is the logical partner to help us achieve our long term commitment of reducing our environmental impact and improving biodiversity, and the other groups we work with add another level of expertise.

We have made good progress through collaboration and I look forward to seeing more achieved.

There is no one overnight solution but I am certain this work, along with the on-farm sustainability work our farmers are doing, will make a real change in the health of our waterways and wetlands for future generations.



Theo Spierings
Chief Executive Officer,
Fonterra Co-operative Group Limited



The period since the last Living Water Annual Report has been a busy one for DOC staff, Fonterra and our other partners involved in the Living Water programme.

We've finished laying a solid foundation that has involved gathering baseline information on water quality, hydrology and native wildlife and vegetation at each catchment. This will enable us to measure how effective our work is in improving water quality and increasing the range and abundance of native wildlife in the catchments. It's also enabled us to develop strategic plans and work programmes with significantly increased expenditure to achieve these goals.

The exciting news is that together with farmers, iwi, conservation groups, schools, councils and other agencies, DOC and Fonterra staff have begun rolling out our work programmes in each catchment.

Restoration plantings will reduce sediment and nutrient run-off into waterways and provide a habitat for native birds and fish. We've fenced waterways, installed sediment traps and begun weed control, predator trapping and work to protect tuna/native eels in the catchments.

A highlight for me is the work at Pūkoro/Miranda to protect red knots and bar-tailed godwits, which spend summer in the catchment. We've twice hosted the Chinese Ambassador to New Zealand at the catchment, once to farewell red knots and godwits as they fly north to China and then onto their breeding grounds in Alaska and Siberia, and once to welcome the birds back with new fledglings, hatched in the northern hemisphere.

DOC, Fonterra, Ngāti Pāoa, and the Pūkoro/Miranda Naturalists' Trust are now working with Chinese officials to protect a 7km stretch of coastal wetlands in China where red knots rest and feed on their way to and from their Siberian breeding grounds. This is a wonderful example of how Living Water is successfully bringing people and agencies together to protect and enhance our natural world.



Lou Sanson
Director-General,
Department of Conservation



ABOUT LIVING WATER

Fonterra and DOC have a common interest in protecting New Zealand's waterways. We recognise that quality water from healthy ecosystems underpins New Zealand's environmental health, community well-being and economic prosperity.

Signed in 2013, our 10-year, \$20 million partnership is focused on improving biodiversity and water quality at five significant catchments where intensive dairying exists. We work with farmers, iwi/hapū, community groups and key stakeholders on programmes, including pest control and riparian restoration that benefit freshwater and coastal environments. Our vision is that: "A sustainable dairy industry is part of healthy, functioning ecosystems that together enrich the lives of all New Zealanders."



TĪKAPA MOANA/FIRTH OF THAMES,
PŪKOROKORO/MIRANDA CATCHMENT



KAIPARA HARBOUR,
HIKURANGI CATCHMENT

WAIKATO PEAT LAKES, AREARE,
RUJATUNA & ROTOMĀNUKA



TE WAIHORA/LAKE ELLESMERE,
ARARIRA/LII CATCHMENT



AWARUA-WAITUNA, WAITUNA CATCHMENT



OUR PROGRESS

Key programme activities included:

- Ongoing close working relationships with stakeholders and the wider community.
- Implementation of the 2014–2015 operational plans, including understanding issues within the catchment and establishing baselines for measuring change and improvements.
- Development of three-year site strategic plans and annual work plans for 2015–2016.
- Local community participation in programme activities.
- Activities to trial science and innovation to improve water quality and drain management on farms.

Highlights

- **Completing baseline assessments:** These are to establish the current state of water quality, ecology and hydrology. Baseline reports will enable us to make informed decisions on priorities for operational work and measure the effectiveness of projects.
- **Support for East Asian-Australasian Flyway Initiatives:** Supporting work DOC and the Pūkoro/Miranda Naturalists' Trust are doing to raise awareness of protecting the flyway for migratory birds. The Chinese Ambassador to New Zealand visited the Pūkoro/Miranda Shorebird Centre on the Firth of Thames in March 2015 to farewell bar-tailed godwits and red knots. This led to the June 2015 announcement that the Hebei Provincial Government proposes to protect provincial wetlands that include a migration recovery point for red knots.
- **Enhancing the habitat of tuna (fresh water eels):** We are supporting tuna protection projects at Hikurangi and Waituna (see Case study opposite).
- **Working with communities:** All sites had a community open day to celebrate the partnership, and inform farmers, local community members and school students about the programme.
- **Planting projects underway:**
 - Hikurangi: Constructed wetland planting with the Whitebait Connection and Kamo High School at Hikurangi.
 - Pūkoro/Miranda: Rangipo – East Coast Road Reserve – Support for Arbor Day planting with Kaiaua School and Ecoquest.
 - Waikato: Secured plants for extensive plantings around the lakes.
 - Ararira/LII: Supported Te Ara Kākāriki and Enviroschools with the Lincoln Primary School Kids Discovery Plant Out and the Canterbury Plant Out, both at Yarrs Flat Wildlife Reserve.
 - Waituna: Demonstration planting of biodiversity corridors on a local farm.
- **Support for national and community biodiversity protection initiatives:**
 - Celebration of the registration of the 4,000th Queen Elizabeth II National Trust covenant in Waikato.
 - Environmental Defence Society 'Wild Things' conference in Auckland, which focused on addressing the biodiversity loss in New Zealand.
 - Kidsfest event themed 'The Living World of Water', hosted by Lincoln Envirotown.
 - Waihora Ellesmere Trust Te Waihora Living Lake Symposium 2015 – contribution towards the field trip.
 - National Ramsar symposium, 17–19 March 2015, Waitkato.

Our Expenditure

Fonterra has committed to paying \$20 million to DOC over 10 years. This money is held in trust and only drawn down as activities are approved. The final expenditure for the 2014–2015 financial year was \$1.07 million.

This reflects that the second year of the programme's operation has been dedicated to startup projects, baseline data collection and engagement with local communities to understand where the partnership can make the biggest difference. These insights have been built into confirmed three-year strategic plans and clear operational plans. Expenditure is expected to ramp up significantly over the coming year as these plans are delivered.

FINANCIAL EXPENDITURE BY ACTIVITY THEME (\$)	2013–14	2014–15	TOTAL
Wider ecosystem enhancement	84,259	421,400	505,659
Sustainable farm management	9,007	64,980	73,987
Support for community programmes	26,054	143,651	169,705
Research, measurement and monitoring	109,567	341,317	450,884
Telling the story	1,298	99,823	101,121
TOTAL	230,185	1,071,171	1,301,356

FINANCIAL EXPENDITURE BY SITE (\$)	FY2013–FY14	FY2014–15
National	22,710	117,396
Hikurangi	86,219	59,001
Waikato peat lakes	25,938	381,615
Pūkoro/Miranda	18,163	102,823
Ararira/LII	7,278	199,648
Waituna	69,876	210,688
TOTAL	230,185	1,071,171

CASE STUDY



Enhancing tuna/eel habitat

We want to enhance tuna habitats at all our sites. Habitat restoration provides the opportunity for farmers to assist with improvements to streams, drains and wetlands, while also creating better living conditions for tuna. In 2014–15 we undertook tuna monitoring at Hikurangi and a tuna habitat assessment at Waituna.

Hikurangi – Tuna transfer, monitoring and education

We are supporting Ngā Kaitiaki O Ngā Wai Māori, a collective of local hapū who run an elver trap and transfer programme, tuna tagging and a school education programme.

A project at our Hikurangi catchment led by local hapū is working to protect tuna in Mangakahia and Wairua River catchments. Numbers have dramatically declined, most likely due to the reduction and degradation of freshwater habitats, as well as significant migration barriers, in particular at the Wairua Power Station.

Over the past four years Ngā Kaitiaki O Ngā Wai Māori, working alongside NIWA, has transferred an estimated 14 million elvers upstream of the Wairua Power Station.

During this time NIWA has been working with Northpower to determine the impact of the power station on downstream migrants and to find a way to provide a safe downstream passage route. Bypasses have been installed at the station intake and an electric barrier is being trialled. Migrant tuna are being implanted with tracking devices to monitor the effectiveness of this work.

Ngā Kaitiaki O Ngā Wai Māori is also very active in promoting tuna education in local schools as well as working alongside the Whitebait Connection with freshwater advocacy.

Waituna – Tuna habitat assessment

The Cawthron Institute has completed an assessment of the Waituna Catchment as a habitat for tuna. More than 20 representatives from Fonterra, DOC, Fish & Game New Zealand, DairyNZ, Environment Southland, farmers, local runanga and the Waituna Landcare Group collaborated on fieldwork for the assessment. High-level results of this research include:

- The habitat for tuna in the catchment is in a poor to average condition. There is excessive fine sediment on and within the stream bed, shallow run habitat, and little stream edge cover.
- Overall riparian habitat is in average to good condition.
- Stream edge banks are more stable where there is full stock-exclusion fencing.
- Sediment going into the Waituna Creek could be reduced by 20 per cent by fencing the remaining waterways.

KAIPARA HARBOUR, NORTHLAND

Hikurangi catchment

Highlights

- Community open day held in October 2014.
- Survey of opportunities for restoration across the floodplain completed and prioritised through workshops with farmers, hapū and key stakeholders.
- Engagement with Ngā Kaitiaki O Ngā Wai Māori to understand and support their aspirations in Hikurangi.
- Support for tuna habitat development and tuna tagging project in collaboration with scientists and Ngā Kaitiaki O Ngā Wai Māori.
- Tradescantia weed control at Wairua River completed.
- Farm biodiversity assessment pilot held at the Fonterra Jordan Valley Farm.
- Wetland construction workshop for farmers held in collaboration with Fish & Game New Zealand.
- Pilot demonstration of a constructed wetland held on a Fonterra shareholder's farm.

FOCUS AREA AND TARGETS

PROGRESS TO DATE

WIDER ECOSYSTEM ENHANCEMENT

OPPORTUNITIES FOR ECOLOGICAL RESTORATION

Investigate and prioritise opportunities for biodiversity restoration. Report and recommendations endorsed by consultation with farmers, hapū and key stakeholders.

- Ecological opportunities report completed.
- Recommendations discussed in workshop with farmers, hapū and key stakeholders. One-on-one discussion with individual farmers started.
- Restoration opportunities included in three-year strategic plan.

GOOD PRACTICE RIPARIAN PLANTING

One kilometre of riparian planting and fencing planned along Mangahuru Stream. Swamp drainage scheme advisory committee informed and supportive of trial.

- Investigation completed.
- Swamp drainage scheme advisory committee informed and supportive of trial.
- Project to be completed 2015–16, subject to finalising site selection and obtaining resource consent.

WEED MANAGEMENT

Tradescantia weed control at Wairua River Reserve completed.

- Tradescantia and privet weed control undertaken at site.
- Monitoring to be undertaken in 2015–16.

SPECIES

Freshwater species management workshop to identify mitigation of threats to these species delivered.

- We supported a Northtec student research project on distribution, abundance and sustainability of black mudfish populations on the Hikurangi floodplain.

SUSTAINABLE FARM MANAGEMENT

COMPLETE FARM ENVIRONMENT PLANS

Complete 10 Farm Environment Plans with a number of initiatives implemented.

- Templates for Farm Environment Plan and On-Farm Biodiversity Assessment developed.
- Successful pilot of Biodiversity Assessment on Jordan Valley Fonterra farm.

SUPPORT FOR IWI AND COMMUNITY PROGRAMMES

WORK WITH IWI

Work with Ngā Kaitiaki O Ngā Wai Māori to develop a project plan for the restoration and enhancement of an oxbow within part of the Wairua River grazing lease land.

- Good discussion around oxbow restoration.
- Will progress restoration project in 2015–16 in collaboration with Whangarei District Council, Fish & Game New Zealand and Ngā Kaitiaki O Ngā Wai Māori.

FARMER AND COMMUNITY PARTICIPATION

Encourage farmers and wider community participation in projects.

Volunteer opportunities created for local community participation within the catchment.

- Wetland construction workshop delivered to farmers in collaboration with Fish & Game New Zealand.
- 180 volunteer hours spent on weed control and planting of constructed wetland on farm.
- Community open day held.
- Living Water attended Mountains to Sea Trust Freshwater and Marine Wananga and Integrated Kaipara Harbour Management Group Kaipara Moana Symposium.

RESEARCH, MEASUREMENT AND MONITORING

HYDROLOGY MODEL

Catchment hydrology model commissioned and completed to inform restoration opportunities.

- Hydrology modelling will be part of an Ecosystem Services Assessment Project to be undertaken in 2015–16.

IMPLEMENT MONITORING

Implement water quality monitoring recommendations and complete annual programme.

Water quality contaminant sources report completed and actions developed.

- Draft Monitoring Plan developed for Hikurangi catchment based on baseline and monitoring report recommendations.
- Monitoring Plan will be implemented in 2015–16, in collaboration with Northland Regional Council.

ENHANCING WETLANDS AND FLOODPLAIN MANAGEMENT



SPECIAL VALUE

The Hikurangi catchment of 32,000 hectares includes the Hikurangi floodplain (around 13,140 hectares), which has been developed for agriculture but features two ecologically significant natural areas: the Otakairangi Swamp and the Wairua River reserves.

These wetlands are nationally significant because of their rarity, size, unique habitats and rich biodiversity.

Our focus is on opportunities to protect remnant wetlands within the Hikurangi floodplain. We want to join together wetland remnants to enhance ecosystem health within and beyond the flood plain. We aim to develop new knowledge on flood, sediment and nutrient control to benefit farmers and other groups.



Planting of a constructed wetland on Steve Browns farm with Kamo High School, DOC, Fonterra and local community. This wetland was constructed as part of a wetland construction workshop supported by Living Water in 2014.



*Mark Douglas (Whangarei, Farmsource Store), Steve Brown (Fonterra Farmer), Tim Brandenburg (Fonterra) and Rowan Taylor (Fencer) inspecting new fence around two remnants of wetland vegetation and oxbows on Steve's land. These two remnants contain 25 per cent of the known population of a rare plant *Pittosporum obcordatum* discovered during one of our Living Water biodiversity inventory projects. Farmsource organised a massive discount on fencing materials and is keen to continue to leverage their suppliers who are all keen to support on farm environmental work.*

TĪKAPA MOANA/FIRTH OF THAMES

Pūkorokoro/Miranda catchment

Highlights

- Community open day held in April 2015.
- Baseline catchment data report on hydrology and water quality completed.
- Baseline upper catchment report on biodiversity and values of small streams completed.
- Resource consent application for mangrove removal prepared.
- Report on biodiversity values to underpin funding application for land acquisition and possible funding agencies identified.
- Coastal strip predator trapping network extended.
- Fencing and planting at the Rangipo-East Coast Road Reserve completed.
- Support for Arbor Day planting by EcoQuest and Kaiaua School.
- Support for Pūkorokoro Miranda Naturalists' Trust in its activities to protect East Asian Australasian Flyway Network Sites.
- Chinese Ambassador visit to Pūkorokoro/Miranda to raise the profile of the site and linkages with Chinese shorebirds habitats.

FOCUS AREA AND TARGETS

PROGRESS TO DATE

WIDER ECOSYSTEM ENHANCEMENT

ENHANCE BIODIVERSITY ALONG THE CHENIER PLAIN

Implement biodiversity restoration enhancement priorities along the chenier plain. Work includes water level manipulation, grazing management, predator control, mangrove management and indigenous revegetation.

- Resource consent application for mangrove removal prepared.
- Removal of mangroves will be carried out during 2015–16.
- Fencing and plantings (total 2,160 plants) at the Rangipo Reserve completed.
- Coastal strip predator trapping network extended by 40 new traps.

SUSTAINABLE FARM MANAGEMENT

COMPLETE FARM ENVIRONMENT PLANS

Complete five Farm Environment Plans with a number of initiatives implemented.

- On-farm biodiversity assessments will be undertaken in 2015–16.

SUPPORT FOR IWI AND COMMUNITY PROGRAMMES

SUPPORT FOR NGĀTI PĀOA

Identify Ngāti Pāoa priority project and complete project plan and implement key activities from this priority project.

- Several meetings with Ngāti Pāoa, including our presentation at Wharekawa Marae.
- Living Water display at Wharekawa Marae on Waitangi Day.

SUPPORT COMMUNITY

Fund one-off support for community initiatives that align with our objectives.

- Supported Pūkorokoro Miranda Naturalists' Trust to carry out annual migrant bird survey in China and North Korea.
- Facilitated Chinese Ambassador Wang Lutong's visit to Pūkorokoro/Miranda and briefed him on international conservation efforts to protect key stopover sites for migratory shorebirds in China.
- Supported EcoQuest to deliver Arbor Day planting project.

FARMER AND COMMUNITY PARTICIPATION

Encourage farmers and wider community participation in projects. Volunteer opportunities created for local community participation within the wider catchment.

- Community open day at Wharekawa Marae.
- Completed stakeholder meetings and introduction to Living Water programme.
- 85 children and parents from Kaiaua School, Fonterra and DOC staff, and EcoQuest students participated in an Arbor Day planting event, planting 1,300 plants.
- Country TV production featuring Kaiaua School pupils and farmers.
- Living Water stories in various print media, as well as on social media.

RESEARCH, MEASUREMENT AND MONITORING

BASELINE WATER QUALITY ASSESSMENT

Investigate the water quality and water regime to produce a Catchment Hydrology and Water Quality Report and implement quick wins if identified. Identify sediment hotspots and design mitigation measures including completing a Riparian Management Plan and implementing a range of activities within this.

- Baseline report completed, summarising current hydrology and water quality issues and recommendations.
- Priority actions included in 2015–16 work plan.

INVESTIGATE BIODIVERSITY OPPORTUNITIES

Complete biodiversity enhancement opportunities investigation for balance of catchment and prioritise projects for subsequent years.

- Report completed and biodiversity hotspots and sites with important aquatic values identified.
- Discussions with land owners started.

LAND ACQUISITION ASSESSMENT

Complete Pūkorokoro/Miranda Stream land acquisition assessment and funding report and create a business case for land acquisition funding agencies.

- Report completed on biodiversity values of site.
- Business case for land acquisition in preparation.

SHOREBIRD HABITAT, INTERNATIONAL FLYWAYS AND FARMING ON THE COAST

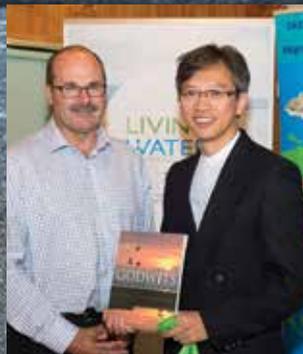


SPECIAL VALUE

This 8,500-hectare wetland on the Firth of Thames includes a floodplain, saline wetlands, intertidal zone and active chenier plain. As a Ramsar site, it is recognised as a wetland of international importance.

It provides a feeding and breeding ground for thousands of migratory birds including the bar-tailed godwits that migrate to Alaska and back every year.

Our focus is on protecting and expanding the shorebird habitat, supporting advocacy to protect international flyway sites and showcasing examples of sustainable dairy farming practices.



Chinese Ambassador Wang Lutong, with Lou Sanson, DOC Director-General at Pūkoro Mirānda Shorebird Centre.



Chinese Ambassador visit to Pūkoro /Mirānda March 2015. Fonterra, DOC, Iwi, Government and Chinese representatives inspecting birds on the shoreline.



Kaiaua School planting day - Rangipo Reserve.

WAIKATO PEAT LAKES, WAIKATO

Lakes Areare, Ruatuna and Rotomānuka

Highlights

- Community open day held in April 2015.
- Baseline catchment data report on hydrology, water quality and biodiversity completed.
- Upper catchment hydrology scoping completed with input from Waikato University, DairyNZ and Waikato Regional Council.
- Lake shore restoration undertaken, including weed management and restoration plantings.
- Improved access and management facilities built at the lakes to support implementation work for the coming years.
- Pest fish baseline assessment completed and predator trapping started.
- Cultural health assessment and project proposal for Ngāti Apakura received.
- Support for National Wetland Trust with fencing and for the community through upgrade of cabinets at amenity block at Lake Ruatuna.

FOCUS AREA AND TARGETS	PROGRESS TO DATE
WIDER ECOSYSTEM ENHANCEMENT	
BASELINE MONITORING – PEST FISH Complete pest fish baseline threat management assessment and action plan and carry out actions.	<ul style="list-style-type: none"> • Pest fish baseline assessment completed and predator trapping started.
SEDIMENTS Complete a sediment plan and implement any identified quick wins.	<ul style="list-style-type: none"> • Baseline water quality reports completed, identifying good drain management practice as key step to manage sediment. • Drain silt trap sites identified through stakeholder engagement and existing records.
IMPLEMENTATION ACTION PLAN LAKE AREARE Collaborate with Waikato District Lake and Wetland Agreement Forum to implement components of the Inter-agency Action Plan for Lake Areare for the 2014–15 year.	<ul style="list-style-type: none"> • Living Water contribution to implementation of Lake Areare Action Plan agreed, including improving public access and planting of additional silt traps. • Undertook lake shore weed management and restoration planting, in collaboration with Department of Corrections.
SUSTAINABLE FARM MANAGEMENT	
COMPLETE FARM ENVIRONMENT PLANS Complete 15 Farm Environment Plans (10 at Ruatuna and Rotomānuka and five at Areare) with a number of initiatives implemented.	<ul style="list-style-type: none"> • On-farm biodiversity assessments will be undertaken in 2015–16.
SUPPORT FOR IWI AND COMMUNITY PROGRAMMES	
ENGAGE WITH LOCAL IWI Work with Ngā Iwi Toopu o Waipa and Waikato-Tainui to identify opportunities for iwi engagement and projects that will contribute positively to Mātauranga Māori.	<ul style="list-style-type: none"> • Initial hui and follow up hui for Ruatuna and Rotomānuka held. • Project proposal for Ngāti Apakura received. • Iwi aspirations included in 2015–16 work plan.
SUPPORT LOCAL COMMUNITY Fund community initiatives that align with Living Water objectives.	<ul style="list-style-type: none"> • Supported National Wetland Trust with funding for fencing. • Supported Ruatuna amenity block upgrade by contributing cupboards, paint and posters.
FARMER AND COMMUNITY PARTICIPATION Encourage farmers and wider community participation in projects. Volunteer opportunities created for local community participation within the wider catchment.	<ul style="list-style-type: none"> • Community open day held at Lake Ruatuna. • Planting day at Lake Areare with Fonterra and DOC staff (1,500 plants).
RESEARCH, MEASUREMENT AND MONITORING	
BASELINE WATER QUALITY MONITORING Prepare a baseline catchment water quality and hydrology report with recommendations for a water quality monitoring framework and implement the monitoring programme.	<ul style="list-style-type: none"> • Reports completed summarising current hydrology and water quality and making recommendations for future work.
BASELINE HYDROLOGY MODEL Complete baseline upper catchment hydrology modelling project. Implement any identified quick wins from this project.	<ul style="list-style-type: none"> • Project scoping undertaken with Waikato University. • To be progressed in 2015–16 as combined Living Water and Waikato Regional Council project.

RESTORING UNIQUE PEAT ECOSYSTEMS



SPECIAL VALUE

Peat lakes are a rare phenomenon globally and the Waikato is home to 31 of them.

Peat lakes, formed over thousands of years, are home to endangered and at-risk native birds such as Australasian bittern, New Zealand dabchick, spotless crane and little black shags.

We are targeting three lakes: Areare, Ruatuna and Rotomānuka.

Our focus is on restoration and habitat enhancement along lake margins and drains, and working with farmers around the three lakes to support the adoption of best farm management practices.



Hamilton and Te Rapa Fonterra staff planting at Lake Areare.

TE WAIHORA/LAKE ELLESMERE, CANTERBURY

Ararira/LII catchment

Highlights

- Community open day held in October 2014.
- Baseline reports on hydrology, water quality and ecology for the catchment drafted.
- Ecological assessment for Yarrs Flat Wildlife Reserve completed.
- Preparation of a draft master plan for improved habitat, access and recreational opportunities at Yarrs Flat Wildlife Reserve by Lincoln University School of Landscape Architecture.
- Support for Canterbury University's Silverstream project to trial new drainage management solutions.
- Support for Lincoln Primary School and Te Ara Kākāriki community plant-outs at Yarrs Flat Wildlife Reserve.
- Financial support for the Living Lake Symposium (Waihora Ellesmere Trust) and the Christchurch Ecological Society Conference.
- Support for Lincoln Envirotown Kidsfest event at Lincoln Event Centre.

FOCUS AREA AND TARGETS	PROGRESS TO DATE
WIDER ECOSYSTEM ENHANCEMENT	
IMPROVE DRAIN MANAGEMENT Identify sites where a change in drain management would benefit ecological health.	<ul style="list-style-type: none"> • Engagement with Selwyn District Council and the LII Drainage Committee on drain management for both environmental and drainage goals. • Continued support for waterway restoration research at Silverstream.
ENHANCE YARRS FLAT WILDLIFE RESERVE Initiate restoration work recommended for Yarrs Flat Wildlife Management Reserve. Weeding and planting actions at Yarrs Flat Wildlife Reserve completed.	<ul style="list-style-type: none"> • Ecological assessment completed of the natural values and threats at Yarrs Flat Wildlife Reserve. • Planning for planting at Yarrs Flat Wildlife Reserve undertaken. • Spring 2015 planting to allow for community and local school involvement.
SUSTAINABLE FARM MANAGEMENT	
FARM ENVIRONMENT PLANS Encourage and facilitate the uptake of Farm Environment Plans by all Fonterra farmers in the Ararira/LII catchment.	<ul style="list-style-type: none"> • 11 Farm Environment Plans completed for the catchment funded separately by Fonterra through the Whakaora Te Waihora programme.
SUPPORT RIPARIAN PLANTING Work with Fonterra farmers in the catchment to identify and, where possible, initiate riparian planting along waterways.	<ul style="list-style-type: none"> • Plans developed for wetland development and riparian planting on two Fonterra supplier farms.
SUPPORT FOR IWI AND COMMUNITY PROGRAMMES	
ENGAGE WITH NGĀI TAHU Engage with Ngāi Tahu to identify management aspirations and opportunities to work together in the catchment, and arrange hui to identify iconic species and plan a management project. In partnership with Ngāi Tahu, contract a cultural health assessment and monitoring plan for the Ararira/LII catchment.	<ul style="list-style-type: none"> • Ongoing discussions with Te Waihora Governance Board. • A cultural health assessment will be undertaken in 2015–16.
SUPPORT LOCAL COMMUNITIES Fund one-off support for community initiatives that align with Living Water objectives.	<ul style="list-style-type: none"> • Community open day held. • Support provided to Waihora Ellesmere Trust for the 2015 Living Lake Symposium, and for the 2015 Christchurch Ecological Society Conference.
DEMONSTRATE VALUE OF LOCAL SITES Scope potential of Yarrs Flat Wildlife Management Reserve for improved public access, recreational opportunities and interpretation of the environment.	<ul style="list-style-type: none"> • Worked with the Lincoln University School of Landscape Architecture to develop a master plan for improved access, recreational opportunity and habitat restoration at Yarrs Flat Wildlife Reserve. • The master plan will be finalised in 2015–16.
FARMER AND COMMUNITY PARTICIPATION Encourage farmers and wider community participation in projects. Volunteer opportunities created for local community participation within the wider catchment.	<ul style="list-style-type: none"> • Engaged with a range of stakeholders. • Support for Lincoln Envirotown Kidsfest event at Lincoln Event Centre. • Support for Lincoln Primary School and Te Ara Kākāriki community plant-outs at Yarrs Flat Wildlife Reserve.
RESEARCH, MEASUREMENT AND MONITORING	
BASELINE WATER QUALITY, ECOLOGY AND HYDROLOGY MONITORING Prepare baseline reports on hydrology, water quality and ecology to understand the hydrological regime of the drainage system. Propose a monitoring programme and recommendations for management, including opportunities and priorities for restoration of indigenous habitat on public and private land.	<ul style="list-style-type: none"> • Draft baseline report summarising current hydrology, water quality and ecology completed, with recommendations for future management.

SUSTAINABLE MANAGEMENT FOR HEALTHY LOWLAND FRESHWATER ECOSYSTEMS



SPECIAL VALUE

Te Waihora/Lake Ellesmere is an internationally recognised wetland, New Zealand's fifth largest lake and the largest coastal lagoon.

More than 166 species of birds have been recorded there.

We are focusing on opportunities to demonstrate healthy waterway management and to engage the local rural and urban community with their natural environment, including the restoration efforts of key wetland areas at Yarrs Flat Wildlife Reserve and Yarrs Lagoon.



Long-finned eel being measured in Ararira-LII River fish survey organised by DOC national freshwater team.



Canterbury Plant-Out Day at Yarrs Flat organised by Te Ara Kākāriki and supported by Living Water, Selwyn District Council, Environment Canterbury, The Canterbury Community Trust, The Isaac Conservation and Wildlife Trust, Te Rūnanga o Ngāi Tahu and Waihora Ellesmere Trust.



Kids Discovery Plant-Out Day at Yarrs Flat. Organised by Te Ara Kākāriki and Lincoln Primary Enviro-School.

AWARUA-WAITUNA, SOUTHLAND

Waituna catchment

Highlights

- Community open day held in July 2014.
- Baseline report on hydrology, water quality and ecology for the catchment completed.
- Existing wetlands mapped.
- Reports on in-stream habitats and tuna habitat quality index completed and presented to community.
- Report on pest management commissioned.
- Landowner agreement obtained for demonstration plantings of biodiversity corridors at Inverlac Farm and planting plans completed for two sites.
- Installation of nitrate filter (top of the catchment) completed and site for installation of the phosphorus filter confirmed (bottom of the catchment) in collaboration with NIWA and DairyNZ.
- Support for Waituna Strategy and Action Plan through contributions to the Waituna Working Group, including planting of a constructed wetland.
- Contributed funding for stages three and four of Te Ao Marama cultural opportunity mapping.

FOCUS AREA AND TARGETS

PROGRESS TO DATE

WIDER ECOSYSTEM ENHANCEMENT

PEST MANAGEMENT

Scoping report being completed via Edge Effect. Work alongside Arawai Kākāriki to prioritise and plan implementation.

- Worked with Arawai Kākāriki to prioritise and plan for Living Water involvement in predator animal control.
- Report on options for target pest species nearly completed.

SUSTAINABLE FARM MANAGEMENT

IDENTIFY WETLANDS

Identify current extent of wetland fragments in the catchment in private ownership.

- Wetland mapping completed.
- Prioritisation and action planning underway.
- Land owner engagement initiated to explore options for wetland fragments.

SUPPORT RIPARIAN PLANTINGS

Select two on-farm sites for restoration (from priorities). Implement initial actions.

Trial on-farm wetland enhancements at two sites including connection via riparian planting on associated drains.

- Site identification undertaken.
- Land owner and stakeholder engagement completed and land owner agreement signed.
- Planting plans and timeframes completed.
- Community involvement in planting in spring 2015.

SUPPORT FOR IWI AND COMMUNITY PROGRAMMES

ENGAGE WITH AWARUA RUNANGA

Identify opportunities to work with Awarua Runanga on projects in Waituna that have relevant links.

Support the development of a cultural values monitoring plan with representatives from Awarua Runanga.

- Stages three and four of Te Ao Marama cultural opportunity mapping completed (funded by Living Water and Arawai Kākāriki).
- Supported iwi to ensure their values are incorporated into Living Water projects.

SUPPORT COMMUNITIES

Continue to work together on relevant issues through the Working Group for Waituna Partners Group.

- Living Water input into Waituna Strategy and Action Plan.
- Attendance at Waituna Working Group.

FARMER AND COMMUNITY PARTICIPATION

Encourage farmers and wider community participation in projects. Volunteer opportunities created for local community participation within the wider catchment.

- Worked with land owners, Waituna Landcare group, education providers, Fonterra and DOC to develop and implement projects.
- Planting plans completed for two sites, providing for Waituna Landcare, Gorge Road School, Fonterra and DOC involvement.
- Results of the tuna habitat study presented to the community.
- Community open day held for nitrate filter (Inglenook Farm) and planting of constructed wetlands (Drakes Head Farm).

RESEARCH, MEASUREMENT AND MONITORING

BASELINE WATER QUALITY, ECOLOGY AND HYDROLOGY MONITORING

Ecological assessment completed and report provided. Initial recommendations from ecological assessment, implemented. Hydrological assessment commissioned and completed.

- Report completed summarising current hydrology and water quality and recommendations for future work.

DEVELOPING TOOLS

Install and report on findings for two passive filters on two separate sites.

- Nitrate filter installed.
- Site confirmed for phosphorous filter.
- Community day held for nitrate filter.

STUDY IMPACT LAGOON OPENING

Lagoon opening water inundation study/data collection alongside Arawai Kākāriki.

- Research initiated to understand impacts of lagoon opening and closure on farms.

PROTECTING AND RECONNECTING WETLAND FRAGMENTS



SPECIAL VALUE

The Awarua-Waituna wetlands are made up of more than 20,000 hectares of wetlands that include a coastal lagoon, extensive peatlands, swamps, freshwater streams, the Awarua Bay and New River Estuary.

The focus area includes the Waituna Lagoon – a 3,500 hectare wetland that was the first site in New Zealand to be named a Ramsar site, recognising it as a wetland of international importance.

We are focusing on working with farmers to protect, restore and reconnect fragmented wetlands; improve in-stream habitat and water quality; and support the adoption of best farm management practices.



Miles Hurrell (Fonterra Group Director Co-operative Affairs) and Allan Munn (DOC Regional Director) at Waituna Planting Day.



DOC Living Water National Team field trip to Waituna Lagoon.

REPORT ON KEY PERFORMANCE INDICATORS

INDICATORS	HIKURANGI Achieved	PŪKOROKORO/ MIRANDA Achieved	WAIKATO LAKES Achieved	ARARIRA/LII Achieved	WAITUNA Achieved
WIDER ECOSYSTEM ENHANCEMENT					
Area of restoration planting or riparian planting	0	0.2 ha Rangipo Reserve	2 ha lake shores	0	1.65 ha riparian
Restorations opportunities (report)	C (draft)	C (draft)	C	C (draft)	C (draft)
Area of managed habitat	1.5 ha (Wairua River)	20 ha stock exclusion Rangipo Reserve	2 ha lake shores	0	0
Species	Mudfish research	0	Pest fish research	0	Tuna habitat research
SUSTAINABLE FARM MANAGEMENT					
Area of retired land	0	0	0	0	0
Constructed wetland on farm and number of plants	0.5 ha/1,685 plants	0	0.3 ha silt trap planted	0	0.5 ha planted
Number of Farm Environment Plans in place	pilot	0	0	11 by Whakaora Te Waihora programme	0
Number of Fonterra farmers involved in (restoration) initiatives on their property	10	0	0	See above	1
Farm management and/or restoration tools developed	Wetland workshop	0	0	Waterway mgt. research	Nitrate filter installed
SUPPORT FOR IWI AND COMMUNITY PROGRAMMES					
Iwi endorsed Living Water strategies and work	Yes	Yes	Yes	Yes	Yes
Cultural health assessment	0	P	1 C, 1 P	0	P
Joint projects with iwi	0	1 community open day	1 proposal	0	0
Key stakeholders endorsed Living Water strategies and work programmes	Yes	Yes	Yes	Yes	Yes
Regional Communications and Engagement Plan	1	1	1	1	1
Number of collaborative projects organised	3	2	4	2	2
Fund one-off community initiatives	3	1	2	2	1
Number of volunteer days	2 at Wairua/2 at constructed wetland	1 event with EcoQuest	1 in collaboration with Landcare Trust	0	1
Community open day	1	1	1	1	1
Planting day	1	1	1 Living Legend	0	2
Media releases	2	3	3	1	2
LW signage installed at activity site	0	0	Yes	0	0
RESEARCH, MEASUREMENT AND MONITORING					
Baseline reports	C	C	C	C draft	C draft
Monitoring programme initiated	1 mudfish	0	Pest fish and silt trap	0	0

Key: S = scoped, but not underway
P = in progress
C = complete
ha = hectare



OUR FOCUS

July 2015–June 2016

Building on the strong foundations established to date through stakeholder engagement, baseline studies and project planning, our focus for 2015–2016 is to accelerate programme delivery across the five sites, including:

- **Hikurangi** – Protecting and connecting remnant wetlands and riparian forest and completing on-farm biodiversity assessments.
- **Pūkoro/Miranda** – Protecting, enhancing and expanding shorebird habitat, supporting advocacy to protect international flyway sites and showcasing examples of best practice sustainable dairy farming.
- **Waikato peat lakes** – Restoration of Lakes Areare, Ruatuna and Rotomānuka, and supporting adoption of best management practices on surrounding farms.
- **Ararira/Lil** – Management of springs and drains to enhance biodiversity and water quality and restoring key wetland areas at Yarrs Flat Wildlife Reserve and Yarrs Lagoon.
- **Waituna** – Protecting and connecting wetland fragments, improving in-stream habitat and water quality, undertaking pest-control and supporting the uptake of best farm management practices.

STORAGE ORGANISER
SOLD the warehouse

OUR PEOPLE

The project managers and lead rangers from Fonterra and DOC driving the delivery of our partnership in 2014–15 were:

NORTH ISLAND



Tim Brandenburg
Fonterra North Island Project Manager



Wendy Holland
Department of Conservation Lead Ranger –
Hikurangi catchment



Greg Van Der Lee
Department of Conservation Lead Ranger –
Pūkoro/Miranda catchment



Michael Paviour
Department of Conservation Lead Ranger –
Waikato peat lakes



SOUTH ISLAND



Nicola Toki
Fonterra South Island Project Manager



Robin Smith
Department of Conservation Lead Ranger –
Ararira/LII catchment



John McCarroll
Department of Conservation Lead Ranger –
Waituna catchment

For more information on our partnership, visit www.livingwater.net.nz.

ACKNOWLEDGMENTS

We would like to give our thanks to all the people who have contributed to our journey so far, in particular our farmers, iwi/hapū, councils, environmental care groups and other passionate individuals.

We would also like to thank all our Living Water Steering Committee members for their guidance and direction, including:

Department of Conservation

Hilary Aikman, Geoff Ensor, Barry Hanson, Carl McGuiness, Andy Roberts, Lou Sanson

Fonterra Co-operative

Miles Hurrell, David MacLeod, Emma Parsons, Sarah Paterson, Lisa Payne, Carly Robinson

LIVING WATER



WORKING TOGETHER TO CARE
FOR FIVE KEY CATCHMENTS

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Produced January 2016