

CENTRAL PLAINS WATER 

Sustainable water growing our world.

Mā te tauwhiro wai ka tipu tō tātou ao.



Annual Review.

2023

# SUSTAINABLE WATER GROWING OUR WORLD.

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## About This Report.

**From small everyday actions to major shifts, we're all striving for a better future. Central Plains Water Limited (CPWL) is committed to meeting the challenge and providing exceptional environmental stewardship of our natural resources.**

We present our Annual Report in two parts. The [Annual Review](#) is an integrated view of our social and environmental performance, and activities with our financial performance included in the [Financial Report](#).

This year's Annual Review document is longer and more detailed. We have deliberately done this to set a future benchmark against which we can measure our results.

We have evolved our approach to reporting to show an integrated view of our economic, social, and environmental performance and activities. We have incorporated the United Nations Sustainable Development Goals into this report. Our approach focuses on driving positive change in eleven areas to create a better tomorrow for all.

With our deeper commitment to enhancing relationships with key stakeholders including Papatipu Rūnanga members from Ngāi Tahu and Ngā Rūnanga Arowhenua, Te Taumutu Rūnanga, Te Ngāi Tūāhuriri and Wairewa Rūnanga, we use some words in Māori in this Annual Review, including taonga which means highly prized natural resource; Rūnanga which means tribal council or iwi authority; kaitiakitanga which means guardianship, stewardship, trustee; and Mahinga kai which means things such as species, natural habitats, materials and practices used for harvesting food, and places where food or resources are, or were, gathered.



**Grant Miller**  
Chair CPWL

## Chairman's Report.

2023

**The board welcomed new CEO Susan Goodfellow at last year's AGM and is pleased to report a seamless transition to the new leadership of Central Plains Water Limited (CPWL).**

A continued focus on operational excellence has resulted in another strong year, with all operational aspects of CPWL being reviewed and energy directed into delivering CPWL's strategic initiatives. It is pleasing to report that CPWL has returned a solid performance over the 2022/2023 financial year.

### Water Delivery.

CPWL proudly delivered 110 million m<sup>3</sup> of high-surety water, of which 55 million m<sup>3</sup> was stored water, to 244 shareholders across the catchment. This is a decrease on the previous year, reflecting more frequent rainfall events across the irrigation season. Increased North West conditions from El Nino also increase the risk of scheme outages from river flood events. The CPWL team are aware of the disruption this causes to your business and proactively try to minimise the outage times.

We appreciate that high-surety irrigation water has given our shareholders the confidence to expand existing operations, increase rotations and employ more people. CPWL are committed to optimising scheme operations to ensure water is available when needed.

### Sustainability.

I am pleased with our progress on sustainability goals, including clear parameters and pathways developed for delivery. An example of this is our proposed solar unit to power pump stations, which is at the advanced business case stage. This project has the potential to contribute significantly to the achievement of our carbon reduction goals. We continue to see increased water sustainability initiatives from our shareholders — thank you for all the work you do on the farm to improve sustainability and environmental outcomes. Your efforts benefit not just farmland but the wider catchment and community.



## Members of CPWL Board.

(Left to right)

Willie Palmer, John Donkers, Pete Morrison, Tony Coltman, Grant Miller (Chair), Simon Le Heron, Stuart Wright, Nicole Godber (Developing Director), Bruce Gemmell.

## Culture and Stakeholder Relationships.

We are committed to building relationships where everyone has a seat at the table. Together, we are working to strengthen our existing partnerships with Ngāi Tahu and Ngā Rūnanga Arowhenua, Te Taumutu Rūnanga, Te Ngāi Tūāhuriri and Wairewa Rūnanga.

As a commitment to working to fulfil our common responsibility, the board and staff completed cultural awareness modules this year. These modules have benefitted our organisation and brought depth to the collaborative environment we seek to operate in. CPWL looks forward to exploring positive opportunities for collaboration to improve sustainability and the environment within our catchment and the wider Ki Uta Ki Tai (Mountains to the Sea).

## Water Use Charge Stability.

The board seeks to maintain water use charge stability and predictability, with our hedge positions proving particularly effective in holding our finance costs in a relatively high inflation environment.

I wish to advise a portion of our lower-priced swaps will expire in March 2025 and be replaced with slightly higher-priced positions which are predicted to increase our cost of funds by approximately 0.7% (from 5.5% to 6.2%). This translates to an approximate rise of \$95 per litre per second. This increase in our funding costs will start to be recovered in the 2024/2025 financial year with the full impact manifesting itself in 2025/2026.

CPWL remains 100% hedged and fully compliant with all our banking covenants. The capital structure review is progressing, with solid progress being made towards a solution that can be brought to shareholders in the coming year for discussion and approval.

## Compliance.

Sadly, there has been the occasional lapse of judgment by shareholders around the requirements for environmental compliance with our farm environment plans and the wider compliance with National Legislative requirements. I would like to take this opportunity to reiterate to our shareholders that it is vitally important to the continuing success of our company and the ongoing social licence we enjoy requires us to be compliant at all times.

## Thank You.

Thank you to shareholders, management and staff who continue to show outstanding support for CPWL, our stakeholders and our community. This year the board farewelled developing director Jenny Geddes and welcomed Nicole Godber as the new developing director. Jenny provided a positive contribution in her role, and we wish her well for her future in governance. I also want to thank my fellow board members for their commitment over the past twelve months.

## John Donkers.

After delivering a wealth of experience to CPWL, early advocate of the scheme and director since 2003, John Donkers has announced his retirement as director.

We have all appreciated and enjoyed working alongside John. His expertise in agri-business and insights into shareholder relationships will be missed. Under John's 20-year tenure, CPWL has helped our shareholders and our community prosper.

As we bid farewell to John, we do so with immense gratitude for his years of service and the profound impact he has had on CPWL. His departure leaves a void that will not easily be filled, and his presence and wisdom will be sorely missed in our boardroom. The board, management, and team wish John all the very best in future endeavours. We are confident that John's legacy of excellence will continue to inspire us as we move forward.

## Grant Miller

Chair CPWL

## CEO's Report.

### Charting Progress and Embracing the Future.



**Susan Goodfellow**

Chief Executive Officer

**It is with great enthusiasm that I present to you the Annual and Financial Review for the year ending 30 June 2023. Having returned to CPWL in October 2022 after five years of engagement in the dynamic market-led land use change space, I have had the privilege of viewing CPWL with renewed insight and vigour.**

Our journey continues to be marked by remarkable achievements, which underscore our commitment to co-operative principles and sustainable growth. CPWL, a 397 shareholder-owned business, has witnessed substantial progress. Our collective efforts have contributed to a noteworthy increase of \$340 million in GDP and the creation of 2135 full-time equivalent jobs within the region during 2022. Our asset value at replacement value has increased to \$502 million, complemented by annual cash receipts from customers of \$38.9 million. Our 24/7 operations are skilfully managed by a dedicated team of 21 staff.

### Operational Data.

Transitioning from the construction phase to steady-state operations, we now possess eight seasons' worth of operational data. This, combined with a decade's worth of data on ground and surface water quality and groundwater levels, paints a comprehensive picture of our scheme's performance. Crucially, all our shareholders now embrace farm environment plans, allowing us to exhibit the scheme's impact at the farm level with actual performance metrics and concrete data. A particularly exciting revelation for me upon my return, has been the tangible positive influence our scheme yields on both the community and the environment. Gone are the days of relying solely on assumptions and models. Our results are now grounded in hard data, presenting an undeniable testament to our collective achievements. As detailed in this report, our scheme steadfastly provides reliable water access to 45,000 hectares, while our team ensures compliance across 71,000 hectares. Considering our extensive command area of 100,000 hectares, our audited performance and impact data stand as a testament to our enduring commitment.



### Improving Environmental Outcomes.

Among the most noteworthy achievements, the scheme has succeeded in reducing nitrogen losses at the farm level by an impressive 29%. We are not seeing any notable changes – reductions or increases, in the quality (in terms of nitrate levels) of the ground or surface water. Results are bouncing around within the historical range, and we know it will take time to see real change. In the meantime, shareholders continue to improve on-farm practices, taking on technological solutions, and regenerative agriculture practices among many other strategies, to make strides toward improving environmental outcomes. In this report, we are excited to share some of the inspirational work that our shareholders are doing on the farm to make these gains.

### Compliance.

Operational compliance remains paramount, with our vigilant adherence to transparent practices. Telemetered, time-stamped data from both intake points, the Rakaia and Waimakariri Rivers, is available to Environment Canterbury, reinforcing our commitment to accountability. Although a brief 15-minute instance of non-compliance in November 2018 marred our record, swift action

and enhanced procedures rectified the issue, ensuring such lapses do not recur. We're further improving our oversight by telemetering all water takes, including subservient ones on the Rakaia River, prior to the upcoming irrigation season.

### Strategic Priorities.

Balancing the demands of day-to-day operations while eyeing the future remains our priority. Earlier this year, the board and staff engaged in strategic workshops, envisioning the scheme's role a century hence. Given our infrastructure's intergenerational nature, designed for an 100 year lifespan, this exercise is pivotal in shaping our resilience to climate change and fostering a robust community. We have defined seven guiding tenets, detailed in our Strategic Plan, to highlight our path forward.

Our unwavering commitment to three strategic priorities underscores our focus on operational excellence and future viability. Ongoing projects include bolstering the resilience of the Rakaia River intake infrastructure during floods, investigating a small-scale solar farm's feasibility, and spearheading a multi-stakeholder catchment initiative for improved water quality, biodiversity enhancement, and cultural outcomes.

Embracing the United Nations Sustainable Development Goals, we have aligned with 11 relevant goals to measure our progress and

impact consistently. Our engagement in cultural awareness workshops reinforces our appreciation for Māori culture, fostering an understanding of freshwater-related aspirations. We are resolute in strengthening our relationship with iwi partners to honour Ngāi Tahu Rangatiratanga over freshwater, a pivotal aspect of our 100-year vision.

Amid evolving regulatory landscapes driven by environmental standards, our engagement in the Regional Policy Statement consultation process showcases our commitment to adaptive governance. Our upcoming consents' renewal in 2047 necessitates alignment with contemporary priorities, including Te Mana o Te Wai principles. Collaboration with neighbouring irrigation schemes ensures a coordinated approach as we navigate these transformative changes.

### Continuous Improvement.

Our dedication to continuous improvement permeates every facet of CPWL's operations, exemplified by our ongoing capital structure review. This initiative, aimed at enhancing agility and reducing complexity, reflects our commitment to being well-positioned for the future. We look forward to sharing this with you for further discussion in the coming year.

We are focused on managing costs to keep charges as low as possible, while giving effect to the strategic vision and plans to ensure that CPWL is well positioned for the future.

### Our Team.

CPWL has a team with a significant diversity and depth of expertise and experience that enable the business to cover a considerable range of activities, to operate the scheme and manage work programmes, that ensure we are compliant and viable now, and into the future. It has been a pleasure returning to CPWL and working with a team that is dedicated and passionate about continual improvement and delivering value to shareholders and the community.

We have an impressive depth of capability and experience on CPWL's board. Increasing diversity is an ongoing opportunity and it has been exciting to have two women, our immediate past developing director Jenny Geddes, and our current developing director Nicole Godber participating at a governance level. I sincerely thank the board and team and look forward to continuing to work together as we explore opportunities for sustainable water growing our world.

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#### Susan Goodfellow

*Chief Executive Officer*

## CFO's Report.

### Financial Summary 2023.

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CPWL is reporting a loss after tax of \$6.8 million and a loss before tax of \$9.3 million. The reported loss results from the ongoing significant depreciation charge of \$12 million associated with such high-value base infrastructure. Because of this, CPWL is likely to continue to report accounting losses for the foreseeable future.

It is important to note that CPWL continues to operate within its budgets and that the reported loss does not represent a cash deficit, as evidenced by the positive cash flow of \$7.5 million generated from its operating activities.

During the year \$11 million of debt was repaid, helping to maintain and carry CPWL's positive equity position of \$20 million+ for the second year in a row.

The effect of rising interest rates was again mitigated this year by the use of interest rate swaps, which effectively convert the floating interest rate portion of our debt into a fixed rate borrowing, thereby insulating CPWL's overall cost of funds from increasing local and global interest rates which have received much media coverage during the year. In the absence of our current interest rate swap portfolio, we would have faced an additional \$1.5 million in interest costs during the financial year.

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#### Mark Vermeeren

*Chief Financial Officer*

# Our Year at a Glance.

Smart Thinking by the Numbers.

The operations of CPWL have a profound impact on the wider Canterbury economy, with flow-on effects rippling throughout the region's industries, businesses, and employees.

<p><b>Annual Receipts.</b> From customers. <b>\$38.9 million</b></p>	<p><b>Ordinary Shareholders.</b> <b>397</b></p>	<p><b>Equity.</b> <b>\$20 million</b></p>
<p><b>Debt Repaid.</b> <b>\$11 million</b></p>	<p><b>Infrastructure Assets.</b> <b>\$312 million</b> <small>book value.</small> <b>\$502 million</b> <small>depreciated replacement cost (estimated).</small></p>	
<p><b>Cash Short-Term Deposit.</b> <small>(Includes \$2.5million of Restricted Cash).</small> <b>\$7.9 million</b></p>	<p><b>Full Time Equivalents*.</b> <b>2,135</b></p> 	
<p><b>Driving Economic Performance*.</b> <b>\$340 million</b></p> <p>Overall in 2022, CPWL and its shareholders, operating within the CPWES (Central Plains Water Enhancement Scheme), have contributed a total of \$340 million to the Canterbury GDP.</p>		
<p><b>Irrigated Land*.</b> <b>\$3 billion</b> <small>Irrigated land generates around \$3 billion for the national economy.</small></p>	<p><b>50 FTEs*.</b> <small>50 additional full-time jobs are created in the wider community per 1,000 irrigated hectares.</small></p>	

\*Figures from the CPWL Business and Economic Research Limited Report (BERL) 2022.



**OUR STORY.**



## Our Story.

### Proudly Providing Tools to Feed Our Nation.

The Central Plains water story began in 1883 with talk of establishing an irrigation scheme to service farms on the Canterbury Plains, with the first approach to central Government made by the then Malvern County Council. However, it wasn't until 51 years later that the idea gained significant momentum.

Over the past century, the Canterbury region has developed as one of New Zealand's most important agriculture production regions, with the industry proudly underpinning Canterbury's identity and economy.

Our world-leading food and fibre products are internationally sought after, and with New Zealand's population predicted to grow to just under six million by 2030, this demand will only increase. To meet that demand, we need access to irrigation to enable us to produce the food and fibre our population will require. Without this, prices will increase as demand increases, resulting in more imports to fill the food gaps.

Water is the limiting factor. Even the best farming systems are limited by soil moisture – the reliability of seasonal rain does not suffice in scaling up food production and feeding our nation.

Our rural areas that sit at the foot of the Southern Alps are likely to become some of the country's drought hotspots, having already experienced two seasons of droughts in 1988/1989 and 1997/1999.

2000

### The Early Years.

In May 2000, with a design philosophy to provide irrigation with complex infrastructure to deliver reliable water and secure the future of agriculture in Canterbury, the Central Plains Water Enhancement Scheme Steering Committee, a joint committee of the Christchurch City Council and Selwyn District Council, was established. In April 2003 to replace the steering committee, Central Plains Water Trust and Central Plains Water Limited were established. The role of the Trust is to hold the consents and licence them to CPWL and the role of CPWL is to fund build and operate the scheme.

2003

### Establishment of CPWL.

Once funding was met, work began on a feasibility study for an enhancement scheme for the Central Plains area, confirming the validity of the scheme. CPWL was established in September 2003 to implement and operate the scheme, and in November 2004, CPWL issued a prospectus to raise funding to support the consenting process. Shares, which carried rights to water, were fully subscribed by farmers within the scheme area.

2009

### Granting of Consents.

The initial Central Plains Water Enhancement Scheme proposed a 280 million m<sup>3</sup> water storage reservoir located in the Waianiwaniwa Valley. This was withdrawn in April 2009 and CPWL proposed a revised run-of-river scheme which was subsequently consented in 2010. In 2012, CPWL received a \$5 million loan from the Selwyn District Council to progress to detailed design work on Stage 1 of the scheme, with a further \$5.7 million of funding coming from the Ministry for Primary Industries Irrigation Acceleration Fund in 2013.

The Government accepted Environment Canterbury's recommendation to change the Water Conservation Order covering the Rakaia River in 2013, allowing Trustpower (now Manawa Energy Ltd) to release water from Lake Coleridge for irrigation when the river is low, increasing the reliability of the water supply. This was a crucial part of the water reliability solution for the scheme, in the absence of on-plains water storage.

2014

### Design and Construction Stage 1.

The scheme was developed in stages with a delivery capacity of 45,000 ha.

Constructed September 2014/2016, Stage 1 consisted of 17 kilometres of canal, 130 kilometres of pipeline (the distance from Christchurch to Hanmer Springs), 13 bridges and 12 pump stations. Taking 18 months to complete, with a construction cost of \$157 million, Stage 1 was delivered on time and to budget.



2016

## Design and Construction Sheffield Scheme.

Constructed December 2016/2017, the Sheffield Scheme consists of a 20 ha reservoir (storage pond), 37 kilometres of pipeline, and 7 pump stations. Coming in at a construction cost of \$42 million, just on time and to budget.

2017

## Design and Construction Stage 2.

Constructed January 2017 – October 2018, Stage 2 consists of 199 kilometres of pipeline (slightly further than the distance from Christchurch to Kaikōura), 12 pump stations, and 3 pressure-reducing stations. With a total construction cost of \$182 million coming in on time and to budget.

2018

## Turning on the Water.

The first water was delivered to farm gates of Stage 1 shareholders September 2015, followed by the Sheffield shareholders September 2017, and finally, Stage 2 shareholders September 2018.

135 years after Malvern Country Council made the first approach to central Government, CPWL has realised that vision, bringing irrigation to the Central Plains of Canterbury, delivering environmental, economic, and social benefits to the wider community, by increasing Canterbury food and fibre production for New Zealand world markets.

## John Donkers.



**We are honoured to highlight the exceptional 20-year tenure of retiring director John Donkers, and the profound impact of John's contributions and expertise on our organisation, as presented by director Willie Palmer.**

Along with several others, John Donkers was invited by Selwyn District Council and Christchurch City Council to be part of a joint steering committee of the two Councils to consider the feasibility of a community water enhancement scheme in Central Canterbury (Selwyn District). After the initial meeting on 10 February 2000, the inaugural meeting of that steering committee took place in the Rolleston Community Centre on 28 March 2000.

The steering committee was directed to consider water enhancement rather than simply irrigation. While the economic benefits of irrigation were most likely to underpin a possible scheme, the Council's wanted to ensure that wider benefits were also considered, and realised, where possible.

From 2000/2003, the committee met often and worked hard, receiving technical advice, consulting with the wider community, and finally reporting back to the councils with a recommendation to take action that would result in the scheme and structure that we have today. This included the establishment of the Central Plains Water Trust and CPWL.

At the outset, it was recognised that while there was still water available from the Rakaia and Waimakariri Rivers at that time, any opportunity was in danger of being lost and an early recommendation of the committee was to apply for a resource consent to take water from the two rivers. The use of that water would be the subject of further consents. Accordingly, an application for a water take consent was filed on 6 December 2001 and accepted by the Canterbury Regional Council as notifiable on 21 December 2001. This step provided the water access rights that are the foundation of the Central Plains Water Enhancement Scheme.

John very quickly showed his knowledge of irrigation and its benefits for not only farming but the wider community. Bringing a unique perspective on both the physical requirements and financial obstacles, John's knowledge and experience as a farmer and on-farm advisor were invaluable to the committee. John was an active member who was also appointed to the Technical and Economic sub-committee, which utilised his significant skills in farm management and finances. With a strong community focus, open to all the benefits that such a scheme could provide to the community, John became active in consultation with stakeholders and an early advocate for a fully piped scheme.



The proposal was for an open-head race. It was thought that it would be too expensive to pipe. John championed the scheme being completely piped below the head race and never missed the opportunity to advocate for this. At the outset, the cost was over double and considered to be too expensive. As the years progressed the cost of pipes was reduced, and CPWL was able to realise a fully piped scheme.

John was an original member of the Central Plains Water Trust which first met on 15 April 2003. This was a difficult time – while the vision and objectives were clear – funding for the scheme had dried up. For a period, the scheme was incurring costs that could not be met, and progress slowed. However, the issue of the company's first prospectus in 2004 was over-subscribed – a success.

Since then, John has been an invaluable member of the CPWL team that has carried the scheme forward. He has also been a member of the Selwyn–Waihora Zone CPWL Committee and was a Director of IrrigationNZ including 3 years as Chair from 2005/2018. John is consistently the voice of knowledge and reason around the CPWL board table, this has included funding and construction in three stages and starting in 2016, the successful operation of a high-quality irrigation scheme irrigating 44,000 hectares.

I cannot overemphasise my personal gratitude and endorsement of John's contribution to the Central Plains Water Enhancement Scheme.

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### **Willie Palmer**

*Director CPWL*



**OPERATIONAL  
EXCELLENCE.**

# Delivering on our 100 Year Strategy.

## Positive Strides Towards a Better Future.

**While providing water surety to our shareholders, we also understand that water is a precious taonga, critical to sustaining life.**

Our Purpose is, 'to create collaborative catchment and community-based solutions that transform lives and livelihoods while maintaining and enhancing natural resources for future generations'. As a business, we seek to collaborate and engage with stakeholders to explore ideas and achieve vibrant, respected, and sustainable irrigation solutions.

In line with our corporate plan our 100 Year Strategy has set strong foundations for sustainable performance and growth.

# Our Strategy.

Vision.	Mission.	Strategic Priorities.	People.
<p><b>Sustainable Water Growing Our World.</b></p> <p><i>Mā te tauwhiro wai ka tipu tō tātou ao.</i></p>	<p>To efficiently supply sustainable, reliable, and cost-effective water for food and fibre production while continuing to explore how we can deliver greater and more diverse value to our shareholders, and local communities.</p>	<ul style="list-style-type: none"> <li>• <b>Secure Scheme Reliability.</b> Reliability for the future.</li> <li>• <b>Climate Adaption.</b> Supplying sustainable water.</li> <li>• <b>Mountains To The Sea.</b> Influencing a connected and healthy environment.</li> </ul>	<ul style="list-style-type: none"> <li>• Focused on operational excellence.</li> <li>• Global expertise delivered locally.</li> <li>• Striving for growth and innovation.</li> <li>• Driven by purpose and values.</li> </ul>

## Anchored by Our Corporate Values.

Integrity.	Reliability.	Sustainability.
<p><b>We do what is right.</b></p>	<p><b>We do what we say we will do.</b></p>	<p><b>We interact with the environment in a way that ensures future generations can flourish.</b></p>

# Our Sustainability Vision and Focus Areas.

Better Tomorrows, Locally and Globally.

Our value proposition is to supply reliable, and sustainably sourced water. The efficient use of irrigation is essential to feed our communities and the global population.

As a long-term multi-generational business, it's imperative for CPWL to take a long-term approach to assist with delivery of social, cultural, and environmental wellbeing.

The United Nation's 17 Sustainable Development Goals (SDGs) provide a framework to create a more environmentally friendly and inclusive world by 2030. These goals provide CPWL with an opportunity to identify and actively manage our performance on the topics that are most material to our shareholders and stakeholders.

The CPWL board and staff have agreed on 11 SDGs. We believe these areas are key drivers in addressing sustainability and connecting the dots between sustainable water and agriculture which will be the key to the transition towards a food surety and a more resilient future for our planet and its people.

Vision:				
Sustainable Infrastructure that Connects and Conserves.				
Focus Areas:	Social.	Cultural.	Economic.	Environmental.
Strategic Goals.	People.		Planet.	
	Sustain and improve contributions to regional and national economic development including GDP.	Lakes and rivers are of historical and cultural significance to Māori. Build stronger more enduring relationships with Papatipu Rūnanga – with a common goal of action plans that transform mahinga kia.	Build the resilience of shareholders by reducing vulnerability to drought and climate-related events, increasing agricultural productivity and incomes.	Protect and restore water-related ecosystems and areas of indigenous biodiversity within the CPWL command area.
Sustainable Development Goal Alignment.				

# Meeting the World's Sustainability Goals.

Local Action in a Global Context.

**Clean water, air and abundant food are the necessities for human health.**

The SDGs provide a framework to create a more environmentally friendly and inclusive world.

We are uniquely poised to participate fully in this work through the responsible and mindful management of our operation, supply chain, social responsibility and diversity and inclusion practices.

We have focused on 11 key goals to achieve a positive impact.

<p><b>Goal 2.</b> End hunger, achieve food security and improved nutrition and promote sustainable agriculture.</p> <p>To achieve food security, we are committed to supplying sustainable water to drive resilient agricultural productivity and production.</p>	<p><b>Goal 3.</b> Ensure healthy lives and promote well-being for all at all ages.</p> <p>A safe workplace is fundamental to how we operate and is our bottom line. This concept extends beyond physical safety, encompassing the wellbeing of our team and the wider community.</p>	<p><b>Goal 5.</b> Achieve gender equality and empower all women and girls.</p> <p>There is no discrimination against women, we actively encourage opportunities for full and effective participation in the scheme, including at board level.</p>	<p><b>Goal 6.</b> Ensure availability and sustainable management of water and sanitation for all.</p> <p>We are committed to increasing water use efficiency by optimising water management practices through continually improving farm practices, and as a result, we look to improve ecosystems and drinking water quality over time.</p>
<p><b>Goal 8.</b> Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.</p> <p>We actively contribute to regional employment and higher-status jobs.</p>	<p><b>Goal 9.</b> Build resilient infrastructure, promote inclusive and sustainable industrialisation and foster innovation.</p> <p>Our Greenhouse Gas (GHG) emissions per unit of value add is at below industry benchmarks and decreasing over time.</p>	<p><b>Goal 12.</b> Ensure sustainable consumption and production patterns.</p> <p>We have an ambitious sustainable consumption plan. Our roadmap towards sustainable consumption requires us to explore on-site electricity production.</p>	<p><b>Goal 13.</b> Take urgent action to combat climate change and its impacts.</p> <p>We strengthen resilience to climate change through innovative and adaptive infrastructure and have mapped out our emissions reduction pathway.</p>
<p><b>Goal 14.</b> Conserve and sustainably use the oceans, seas and marine resources for sustainable development.</p> <p>We are working to significantly improve indigenous fish stocks including tuna and inanga restorations in water bodies within the Selwyn Waihora catchment.</p>	<p><b>Goal 15.</b> Protect, restore, and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.</p> <p>Our focus is on increasing the area and diversity of indigenous plantings (including riparian margins, wetlands etc) and the diversity of indigenous and threatened species within the catchment.</p>	<p><b>Goal 17.</b> Strengthen the means of implementation and revitalise the global partnership for sustainable development.</p> <p>In collaboration with catchment stakeholders, including Papatipu Rūnanga, we will work collectively to achieve enhanced biodiversity and the next generation of water stewardship.</p>	

# Sustainable Water Growing Our World.

## Water Delivery.

**We have an experienced and dedicated water delivery team focused on maximising and optimising the lifetime of our scheme assets, while providing a reliable and efficient water delivery service to our shareholders.**

We have a preventative maintenance focus to minimise outages and downtime during the season and focus on prioritised scheduled repairs and maintenance during the off-season.

Our approach to operations is informed by, and integrated with, our operating values:

- Home Safe and Well Every Day.
- In This Together.
- Share – It Helps.
- Scheme Reliability.

### Aspirations.

- Maintain, protect and enhance our world-class asset.
- Continually identify reliability and service improvement opportunities.
- Work with our shareholders to improve water use efficiency.
- Work with our shareholders to achieve fit-for-purpose solutions to their water requirements.

### Our Measures.

- Reliable and efficient water delivery service.
- Efficient water ordering and fair rationing of available water.
- Safe and environmentally compliant water sourcing and delivery.



**OUR PRODUCT.**

## Water Delivery.

CPWL is proud to deliver sustainable water to power Canterbury's agricultural economy. Our water delivery supports the food and fibre sector. In 2018, \$4.3 billion of food and fibre exports were shipped from our closest local port – Lyttelton. (Latest available data).

During the 2022/2023 irrigation season, our water delivery team supplied 110 million m<sup>3</sup> of water to our shareholders consisting of 104 million m<sup>3</sup> sourced from the Rakaia River and 7.7 million m<sup>3</sup> sourced from the Waimakariri River. The total water delivered was comparable to last season. Late-season rainfall reduced the total scheme demand significantly from late February 2023, resulting in a slower-than-normal finish to the season.

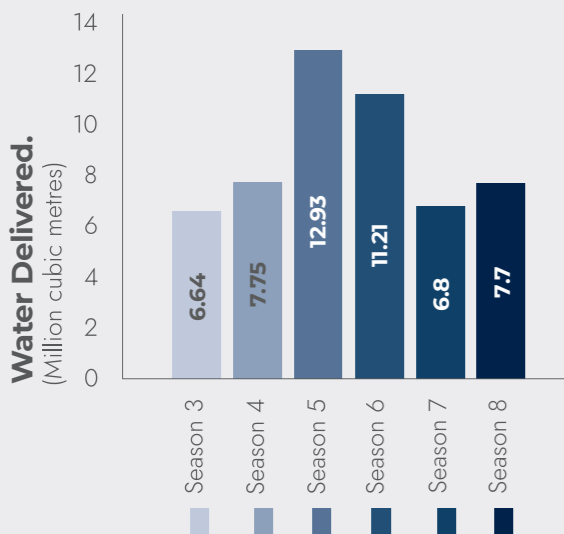
### Sheffield Season.

The water delivery team successfully managed the water level in the Sheffield Storage Pond (Pond) during the 2022/2023 irrigation season. As a result, the Waimakariri River water source was available to the Sheffield Water Scheme shareholders without water restriction during the season. The Pond level was maintained above 90% full for most of the irrigation season and the critical pumping asset was successfully protected by avoiding pumping dirty water during high river flows.

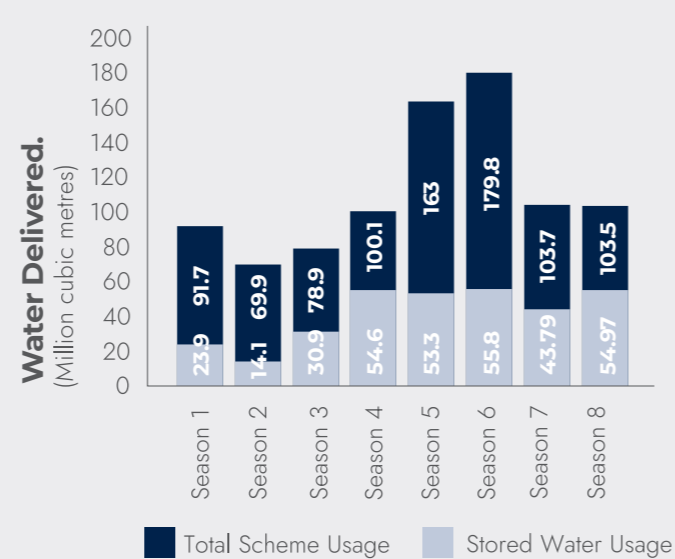
### Rakaia Season.

Manawa Energy (previously Trustpower) continued to provide reliable stored water to supplement the Rakaia River water source with 55 million m<sup>3</sup> stored water being required to support scheme demand during the season. Almost half of that stored water volume was consumed in January 2023.

Sheffield Season 8.  
Water Delivered by Season.



Rakaia Season 8.  
Water Delivered by Season.



### Additional Support.

Our newly created engineer/asset manager role provided an increased focus on the long-term management of our scheme assets and on maximising the effective lifetime of the individual components of the scheme to enable reliable water delivery.

### Shareholder Relationships.

We work closely with our shareholders to improve their water use efficiency. Shifting the focus onto improving water utilisation, reporting at a customer level, and delivering one-on-one training, specific to individual farms, a substantial proportion of our shareholders were able to improve their on-farm water utilisation. This has, in turn, enabled their businesses to benefit from the resulting cost savings.

### Reductions in Outages.

A commitment from the maintenance team to focus on reducing outages, resulted in only one unplanned outage occurring after mid-December 2022, delivering a 45% reduction in total turnout hours from the previous irrigation season.

There were 16 planned and 12 unplanned power outages which affected the scheme during the early season. The Orion planned outages in the Sheffield area enabled upgrades works on the network which, based on the last half of the season, appear to have improved the overall reliability of the network for our pump stations.

### Flood Outages.

Large floods continue to be one of the greatest challenges to scheme reliability. The November 2022 flood on the Rakaia River caused a significant outage at the intake. Our engineers have made considerable progress in identifying and developing practical improvements to reduce the water delivery downtime resulting from these events.

## Scarlett Farm.

**The health, happiness, and welfare of cows are directly impacted by the paddock. In taking proactive action to protect the land, it is not just the cows that are finding happiness.**

CPWL shareholders, Tony, and Jean Scarlett, along with daughter and son-in-law Melissa Scarlett and Deane Parker and their three children Zoe, Leithan and Eddy are 50/50 share milkers on a 200ha contained dairy farm ten minutes outside Darfield, Canterbury.

Access to CPWL water presented a massive opportunity for Deane and Melissa who were only 60% irrigated before CPWL turned the tap on with Stage 2. Water security has provided the ability to summer safely and be self-contained on the farm, and while the Scarletts could have chased more milk solids, the forward-thinking couple has instead chosen to prioritise sustainability through self-containment.

On-farm adaptation is a continual part of the family business, as they strive to improve the way they farm and care for their land. *“When you have healthy soil, you have a solid foundation for healthy plants and animals. That is the perfect equation for a productive and profitable farm,”* Deane explains.

*“We do what is best for our land, our cows, and our environment, where possible. We are aligned with the principles of regenerative farming which started by choosing to place a greater focus on the health and biology of the soil. We started one simple yet powerful concept – the introduction of multi-species crop and pasture mixes.”*

### How it works.

The right kind of vegetation – deep-rooted plants for improved soil structure, reduced compaction, nitrogen fixation – and promoting water retention is at the heart of regenerative farming. Plants have also been chosen to enrich the soil with valuable nutrients, and organic matter, making the soil more resilient by creating a natural fertiliser and less reliant on artificial inputs all of which has improved profitability.

The system continues to evolve having very flexible rotations, planting a wider variety of crops, and this eliminating soil disturbance has resulted in improved soil conditions, flourishing biodiversity, record numbers of worms and paddocks humming with bees and other pollinators.

Fertility in the herd is much improved with a reduced empty rate. You can see the cows are happier from just the shine on their coats, as well as the amount of milk they produce.

# HAPPY PADDOCKS.



## Rising Costs.

We are in a period of disruption and reshaping of the global economy – fertiliser, animal feed and fuel have all surged in price, and continue to do so. There is no getting away from the fact that New Zealand is heavily exposed to the global increases impacting input costs on farms.

But this could not be further from the case at Scarlett Farm.

*“By putting our soil health and biology front and centre, experimenting with the various crops complementing one another, and each plant bringing unique benefits to the soil – the paddocks have never looked healthier, or performed better.”*

Crops with healthy soil can lead to healthier plants and less reliance on fertiliser, insecticides, herbicides, pesticides, and fungicides – all while potentially earning higher yield prices and reducing operational costs.

“**Not only did regenerating our land deliver happy paddocks, but through revisiting our land we have created a sustainable future, increased revenue, and better mental health. Happy days!**”

## Minimising Costs.

One of the biggest moves on the farm has been using much less solid fertiliser, with investment being made in a Tow and Fert. Dean adds *“With the cost of fertiliser now, it is a good cost to minimise.”* Effectively delivering gains on both sides, the Tow and Fert means the farming system has significantly changed.

Tow and Fert is a range of liquid foliar spray machines that mix, apply, and maximise the effectiveness of fertilisers.

*“We use 100% of our effluent on the farm, supporting a healthier environment that is more resistant to pests and diseases and photosynthesizes more easily, but ultimately, we are not reliant on costly insecticides and selective herbicides – we don’t spray”*

Deane is confident that by adding diversity through the introduction of both foliage and liquid fertiliser, which is applied directly to the plants, uptake to plants has accelerated, nitrate leaching below the crop’s root zone has reduced and water quality draining into the aquifers has improved. The flow-on effect means growth rates are improved – resulting in no significant decrease in milk production, from fewer cows.

## Consumer Demand.

Globally big and small food producers are starting to talk about soil health, water conservation, carbon sequestration, and regenerative farming. At the same time, consumers are more eager for a meaningful relationship with the land that creates their food, seeking out a sense of connection and impact – beyond the last bite.

Farmers and food companies are unlocking value at every stage of the food journey. Like never before, the food produced in Canterbury is becoming an essential part of the story. Not only is milk from regeneratively grazed cows a nutrient-dense superfood – it is also a valued ingredient that ticks all the boxes for the future-focused consumer.

## Working Together.

Knowledge sharing provides a vital role in increasing the adoption of regenerative methods. Consumers in markets such as the United States pay high premiums for food and fibre produced through regenerative systems. But how do you start? We asked Deane and Melissa.

*“Begin with one paddock, you will start to see the benefits and that will encourage you further. Going back to basics, and regenerating the land offers a timely opportunity to experiment. I cannot explain how, but farmers can smell when soil is healthy – because our livelihoods depend on it, smell your soil.”*

*“Experiment with tools and plantings to find out what works in your paddocks – learning through experimentation is essential. Talk to your neighbours, talk to your local community of farmers.”*



# GREENER PASTURES.

## Essendon Farm.

**Paul and Ann Jarman have an incredible story – one that's interwoven not only over five generations of farming but that includes two world wars and one common thread – a lack of sustainable water.**

Paul's great-great grandfather James Gough came to New Zealand in 1860 and three years later he paid £200 for a licence to occupy 100 acres in the Greendale area, near Darfield. That land, now known as Essendon Farm, is part of the 400 hectares Paul and Ann farm 161 years later.

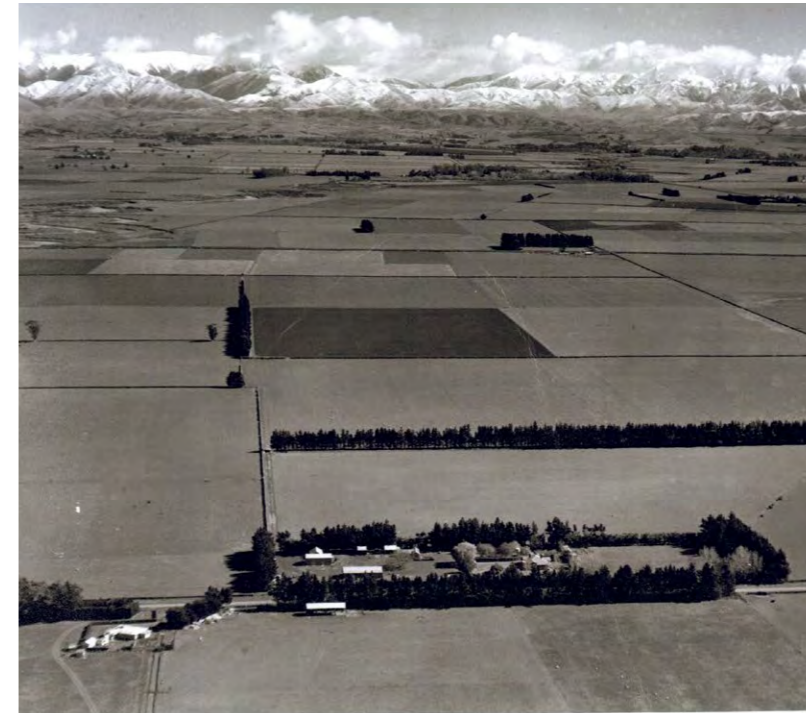
In the very early days, there was not enough water for stock, so until the 1880's, wheat was grown. However, things changed dramatically with the arrival of water races – which coincided with the development of refrigeration – a game changer not only for Essendon Farm but for all of Canterbury enabling the opening up of UK markets for Canterbury export lamb.

### Past Generations.

In 1884 Gough's daughter Annie married Thomas Jarman and the couple had eight children.

When Britain declared war on Germany on 4 August, 1914, New Zealand immediately committed to sending 220,000 troops to the First World War.

Among them were Frank, Harry (Ness) and James (Bert) Jarman.



## ESSENDON FARM 1960.

Frank and Ness both died fighting and Bert was discharged after contracting malaria fighting in Palestine. Bert passed away in 1922.

From his time in the Jordan Valley, Bert learned to fully understand the importance shade plays in the environment. Post-war and back on the farm Bert began planting a network of shelter trees – an antipodean with the reality of windy plains. Serving as a floral fingerprint of the lands from which the idea was derived, many of Bert's original hedgerows remain on the property. They don't just provide shelter, but also food and travel corridors for wildlife – we're talking birds, insects, and mammals. The severe Nor'West gale of 1975 further demonstrated the necessity of increased shelter, invaluable for soil conservation and efficient irrigation.

### Early Adopters.

The Canterbury Plains have never been an easy area for farming. The hot, dry weather provides the necessary conditions for arable farming, but it also presents many challenges including agricultural drought conditions.

The first water from CPWL was delivered to the gate of Essendon Farm on 1 September 2018.

Not only were Paul and Ann early adopters, but they are also proud advocates of CPWL. Paul says *"It was heartbreaking year after year to see all your hard work going nowhere – with droughts and dry months leading to crops withering in November. Improving water on the farm has been a lifeline"*.

*"We signed up for CPWL in our 40s and the water arrived in our 60s, the change has been a wonderful thing; our family has been farming since 1863 and that is a lot of heritage to be guardians of. We understand that sometimes we have to make big decisions, not just for us but for future generations. The decision to join the scheme delivered certainty for those generations"* says Ann.

With the promise of water security, Paul and Ann converted from sheep and cropping to dairy in 2013.

## Sustainable Agricultural Practises.

The goal of moving towards more sustainable farming practices took a significant step forward with a trip to the UK in 1998 to study the Linking Environment and Farming (LEAF) programme, aligning perfectly with Paul and Ann's long-term vision for the farm. LEAF is a charitable Trust working towards environmentally sensitive methods of farming, using the best of traditional methods and modern technology.

*"Research, innovation and their grassroots on-farm applications, are the cornerstones of LEAF. Through our involvement we developed new ways of thinking and technologies around more sustainable production. Translating what we learnt through the various modules played a big part in driving more sustainable and resilient farming systems"* adds Paul.

## On-Farm Practice.

Putting this into practice at Essendon Farm has required an emphasis on rotating crops and the adaption of no-tillage to establish most crops – and strip tillage for fodder beet. Feed barley crops are farmed with winter feed crops and pasture, in a rotation, on the dairy support block adjacent to the milking platform. And it's paying off, the improvement of the soil's organic matter content has gone from 4-5% to its current 7-8% since on-farm monitoring began, along with a huge 70% reduction in tractor fuel.

*"Healthy soil with higher organic matter holds water like a sponge – teeming with living organisms, which in turn promotes healthy crops – those two things work hand in hand"* explains Paul. Stubble burning is no longer used on the farm, rather, barley straw is baled and used for stock feed and dairy effluent is irrigated on part of the farm, replacing synthetic Nitrogen in that area.

## Future Generations.

*"Embracing diversity by planting a variety of crops can have many benefits, including maintaining animal health, welfare, and performance. Soil that is rich in organic matter improves pasture production and the carbon is sequestered on farm."*

*"The journey we started in England in 1998 with LEAF, continues here today with our Farm Environment Plans. The farmers we saw there were protecting woodlands, fishing streams and wildlife habitats. Their efforts were recognised by a premium paid by their major customers."*

“

**In NZ, we, like our fellow farmers, are making the same efforts to integrate commercial farming with environmental care.**

”

*"In essence, the journey towards sustainability on Essendon Farm began long before us. We took a hint from the trees planted by my grandfather Bert, and we ran with the idea of leaving the land in a better place for our children and our grandchildren to give them the opportunity to continue as a family farm,"* concluded Paul.

**OUR  
PEOPLE.**



## World-Class.

**Our people philosophy centres around working together, adhering to the highest standards, and joining together a collection of thinkers and doers.**

A diverse, talented workforce with the best knowledge and insights ensures we have the skills to drive us forward. A high-performance framework provides the environment for our team to reach their full potential.

We are developing a safe, healthy, and passionate team, where everyone is empowered to do their best and thrive.

Our workplace approach of unlocking our full potential through a philosophy of care is informed by our Corporate Values:

- Integrity – We do what is right.
- Reliability – We do what we say we will do.
- Sustainability – We interact with the environment in a way that enables future generations to flourish.

### Aspirations.

- Protect, grow, and develop a world-class team.
- Fairness, inclusion, and diversity in our workplace.

### Our Measures.

- Health, safety, and wellbeing.
- Culture and values.
- Employee attraction, development, and retention.





## Safe Workplace.

### Taking Care of the People, Who Take Care of the Scheme.

#### The health, safety and wellbeing of our people are paramount.

A safe workplace is fundamental to how we operate at CPWL, and we are consistently investing in our health and safety culture to ensure a high level of engagement within our team. Home Safe & Well Every Day is our bottom line. This concept extends beyond physical safety to encompass wellbeing.

Our team are highly motivated and dedicated to keeping the scheme running 24/7 to ensure the most efficient and reliable delivery of water to our shareholders. Our team put the health and safety of themselves, the people we work with, and the public first. This is non-negotiable and comes ahead of operational demands. We do this because we care about our people. In addition, the risk of critical harm to anyone on the scheme could result in longer-term impacts on scheme operations.

A safe working environment is the responsibility of all our team, at all levels of the business, always. To us, creating a culture of personal safety is about taking ownership and responsibility, developing the right behaviour, and building appropriate procedures, policies, and systems.

Over the past 12 months, we have evaluated our safety culture and updated our Health and Safety strategy, evolving it from a construction-focused business to better align our business and operations. Given our core business has fundamentally changed we refined our Code of Conduct, introduced Annual Wellness Days, and commenced a detailed review of our key critical risks.

Each of these refinements will support us to achieve our goal of Home Safe & Well Every Day.

CPWL also acknowledges our responsibilities to protect our suppliers, contractors, and the public. We take this responsibility seriously and our reporting tools have been designed to incorporate this requirement.

#### Reporting Tools.

Site App Pro is our new health and safety management software which plays a key role in monitoring and prioritising the safety of our team. The app helps ensure our team members are working in a safe environment by providing tools for hazard reporting, incident tracking and risk assessment.

Site App Pro incident reporting allows the team to easily report incidents or near-misses in the field. This feature promotes a proactive safety culture, enabling prompt action to prevent future incidents.

All our team use the check-in check-out functionality and answer pre-start questions at the beginning of each day to help us check in on the health, safety, and wellbeing of our team from the moment they start work in the field.

#### Managing Critical Risks.

A critical risk is an event that could kill or seriously harm one or more people. At CPWL we must ensure the ongoing management of our greatest risks is clear and robust and we have the appropriate controls in place to prevent them from occurring, as well as appropriate measures to keep our team safe if an event does occur.

Visible leadership is key to achieving our focus on continuous improvement in health and safety at CPWL. To achieve this, our management team work alongside those in the field to monitor safety interactions and focus on critical control checks.

## Stop, Pause, and Reflect.

### Our Health and Safety Responsibilities.

Our monthly company-wide team meetings and weekly management team, meetings provide valuable opportunities to build on the workplace culture we aspire to at CPWL.

Led by CEO Susan Goodfellow, with the support of our management team meetings ensure that every member of our team understands the importance of our health, safety and wellness programme including the risks and the importance of reporting incidents, near misses and risks. The responsibility of safety is shouldered by everyone and requires an active leadership and safety culture from everyone.

When a team is engaged in health and safety, the whole team benefits and people feel valued. Not only does this make CPWL a healthier and safer place for everyone, but performance and retention increase.

# Engagement, Diversity and Belonging.

**“Building an environment where our team come to work every day and enjoy what they do and evolve as people is important to us”.**

With a team of 21, having a highly engaged workforce is central to our business success. We keep a close eye on staff engagement. Our management team meet fortnightly and share insights on engagement in their team and learning from each other.

The focus is paying off – our team are engaged, focused and happy. The aim is to listen to our people, and in doing so increase safety, retention, and performance.

**We are actively working to:**

- Share and connect employees to our organisational strategy and vision.
- Continue to develop our management team.

**Susan Goodfellow**  
Chief Executive Officer

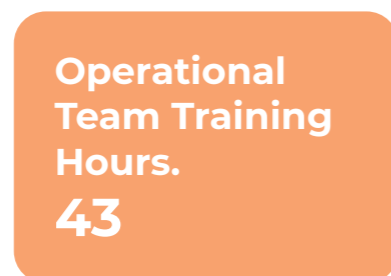


## Gender Balance.

**Team Ratio.**  
43% Female, 57% Male



**Leadership Team Ratio.**  
50% Female, 50% Male



# OUR PLACE.

## Sustainable Impact.

**We set the bar high, and expectations higher.**

Balancing short-term and long-term sustainability objectives is at the heart of everything we do and is embedded in our delivery as an active corporate citizen. Sustainability is the cornerstone of our commitment to world-class environmental and social stewardship.

Our approach to sustainability is informed by, and integrated with, our core business values:

- **Freshwater Ecosystems.**
- **Native Biodiversity.**
- **Climate.**
- **Stakeholder Engagement – Taking everyone on the journey.**

The Environmental Team at CPWL have put significant work into understanding our place in nature. With their leadership, vision and technical knowledge our shareholders' environmental performance has demonstrably improved, contributing to a more resilient, sustainable Canterbury both now and in the future.

### Aspirations.

- Climate action lower impact, smarter agriculture.
- Sustainably managed land, water, and prosperous biodiversity.
- Mountains to the sea – influencing a connected and healthy environment.

### Our Measures.

- Biodiversity.
- Environmental and community impacts.
- Social Licence to Operate.
- Collaboration and Partnerships.



## Water in Our Communities.

CPWL operations are aligned with the vision of the Canterbury Water Management Strategy (CWMS), and we are committed to doing our bit to deliver on CWMS outcomes. CPWL can deliver widespread environmental benefits by guiding shareholders towards more sustainable and efficient farm practices alongside our approach to managing nutrients and on-farm management plans.

### Key ways we are achieving this are:

1. Protecting the aquifers. By taking low-nutrient alpine water from the Rakaia River in a controlled way, shareholders reduce water abstraction from groundwater wells. As a result, more water is left in aquifers contributing to water quantity goals within the CWMS.
2. Every farm on the CPWL scheme must have an independently audited Farm Environment Plan (FEP), which includes a nutrient reduction target, one of the scheme's key environmental pillars.
3. Nutrient discharge levels are lower in 2023 than they were at the commencement of the scheme, even with the addition of new irrigation, because of the adoption and continual improvement of management practices by our shareholders.

# Our Environmental Year at a Glance.

**Nitrogen.**  
**29%**

Less nitrogen was discharged below the plant root zone from CPWL shareholders farms in comparison to levels measured before the scheme commenced.

**Water Supply.**  
**20**

Turnouts to Supply Water for Fire and Emergency New Zealand Firefighting.

**Farm Environment Plan.**  
**100%**

CPWL Farms have FEP's helping to drive sustainable operations.

**Audit Grade.**  
**94%**

CPWL farms have an A or B-grade audit of their FEP.

**Groundwater Recharge.**  
**50-70%**

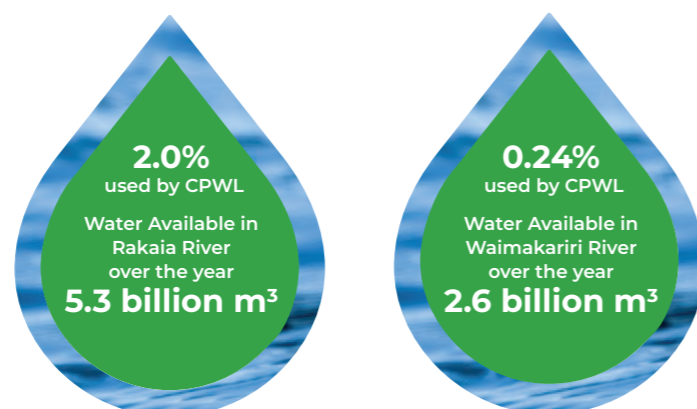
Reduction in the abstraction of groundwater from shareholders farm bores compared to before the scheme was operating. This has replenished natural aquifers and improved streams linked to Lake Ellesmere/Te Waihora.

**Vegetation Fires.**  
**Down by 53%**

Since shareholders began irrigating across the Canterbury Plains, the number of vegetation fires has dropped by 53%.

<b>199</b>	Vegetation fires in 2014/2015
<b>101</b>	Vegetation fires in 2018/2019

## Percentage of Water Taken.



## Biodiversity and Ecosystems.

CPWL works with landowners to protect and enhance indigenous biodiversity, establish new habitats, and demonstrate to communities that environmental stewardship, through restoration and enhancement of native biodiversity values on the Canterbury Plains, is essential for securing our future.

Under consents, CPWL manages 71,000 ha of land through CPWL FEPs. This provides a unique opportunity to enhance ecological health at a meaningful scale through a range of actions, such as targeted planting of appropriate species on wetlands and riparian margins. For example, areas along the Rakaia, Selwyn and Hororata Rivers have been identified as being of local and regional significance, especially in terms of making kai.

CPWL's biodiversity restoration and protection project is outcomes focused. In keeping with the guiding theme of "right tree, right place, right purpose", maintenance plans have been designed to define a clear framework for identifying the beneficial impacts of plantings on the overall ecology of the area.

It is our hope that the larger scale catchment-wide projects will provide local employment opportunities as well as support the biodiversity goals of local councils.

The value of establishing tracts of indigenous vegetation within farming systems across the plains is being increasingly recognised. Where land has been revegetated with the correct native species, there is the potential to mitigate previous negative impacts and provide a viable habitat for native birds, lizards, and invertebrates. Such revegetation can also provide flood protection in extreme weather events.

There is high success with the establishment of this native vegetation where irrigation can help enable plant survival through drier months.

## Mountains To The Sea - Ki Uta Ki Tai.

CPWL is looking beyond the farm to help positively transform ecosystems within our catchment. Our core aim is to build collaborative connections across the catchment and inspire action to create a healthy ecosystem with biodiversity restored - ki uta ki tai – from the mountains to the sea.

This work takes a comprehensive long-term strategic approach where we identify and protect a wide variety of native species, allowing them to flourish and contribute to the goal of making kai.

We do this in a way that integrates with the farming system to provide an example of how farming and indigenous biodiversity can coexist and mutually thrive.

## Central Plains Water Environmental Management Fund (EMF).

Over the past five years, CPWL has contributed over \$1 million through the Central Plains Water Environmental Management Fund (EMF) to a variety of projects that enhance biodiversity in the catchment area. The EMF was established as part of the CPWL consents, with annual contributions being made to the fund.

The EMF is administered by a committee that allows for representatives from the community, iwi, environmental and recreational interests, and local councils.

Projects selected for funding by the committee include wetland enhancement, projects that minimise nutrient losses to lowland streams and riparian planting.

**\$350,000** contributed towards the restoration of Lake Ellesmere | Te Waihora.

**\$150,000** contributed to ensuring Lake Ellesmere | Te Waihora can be opened to the sea.

## Pockets of Restoration.

Successful use of the Central Plains Water Environmental Management Fund means pockets of native restoration are already evident within the catchment and providing corridors for native flora and fauna to thrive and travel. Our intention is to minimise the distance between these pockets and create future natural expansion across the Canterbury Plains.

Below are some of the ways the EMF is adding value for both shareholders and the community, promoting, and enabling the establishment of a network of indigenous vegetation.

## Pinewoods Farm.

Tim and Lucy Cookson of Pinewood Farm have a vision to bring back native birds and other wildlife through the reintroduction of native plant species to the farm landscape. Building on restoration work already completed, Pinewoods have been planted in fenced strips along the paddocks and under the pivots that supply irrigation water. This strategy has ensured greater seedling survival. The restoration programme provides a living, breathing community classroom with school groups helping with the planting. These young conservationists have future goals to continue with their involvement, providing a learning opportunity that extends from ecosystems to climate action.

### Impact.

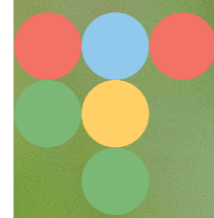
#### Short Term

- 4800 plants planted; 1475 seedlings planted through EMF Fund.
- Increase in the diversity of the landscape.
- Increases in Terrestrial fauna, such as lizards and insects.

#### Longer Term

- Established patch of native podocarp forest that is large enough to be functional.
- Established a functional seed source for plant species endemic to the Canterbury Plains.
- Plentiful source of food for native birds and a steppingstone through to other patches of native vegetation.
- Abundance of native bird species returning to the farm.
- Increase mahinga kai values.

# Mountains To The Sea – Ki Uta Ki Tai.





## Waterford Dairy Farm Limited.

Grant and Jeanie Sanford, owners of Waterford farm, have set about native regeneration to protect and care for their land and waterways.

With the farm between the Selwyn and Hororata River, planting native species along the river has brought significant benefits. While there were initial challenges, the benefits are extending well beyond the provision of shelter for stock. The plantings have also enhanced biodiversity with insects, bees, lizards, frogs, and bird life flourishing. The corridor is now home to pukeko, quail, pheasant, and fantails among other species. The hope is for tui, bellbirds, and other endangered/rare species to eventually return.

The waterways are protected by buffers and fencing, further enhancing mahinga kai. On the farm boundary, Bealey Creek feeds into the Hororata River and is home to a Kōwaro Canterbury mudfish sanctuary.

The installation of an electric trout barrier on the Hororata River, provided by Environment Canterbury, enables Kōwaro Canterbury mudfish numbers to replenish by minimising predation from opportunistic trout.

### Impact.

#### Short Term

- 20,000 native seedlings plants planted.
- Strategic areas are retired and fenced.
- Increased vegetation diversity and aquatic plants, such as watercress.
- Reduced sedimentation and aquatic weeds in farm waterways.
- Endangered/rare species such as Bellbirds and Banded Dotterel and Kōwaro are flourishing.

#### Longer Term

- Leveraged ecosystem services to improve surface water quality, e.g., natural filtration of contaminants, de-nitrification, and soil stabilisation.
- Sustainable food source for native birds and a stepping-stone to other patches of native vegetation well established.
- CPWL EMF planting allocated to further enhance biodiversity.



## Twin River Dairy Farm.

Graham and Adele Wells of Twin River Dairy Farm are enthusiastic about enhancing and protecting the Hororata River and to date have completed four separate stages of planting with assistance from CPWL's Environmental Management Fund and Te Ara Kakiriki Greenway Canterbury Trust.

Planting has been carried out on a 2ha wetland and riparian area which borders the Hororata River at its confluence with the Selwyn/Waikirikiriri River. The site was retired from pasture grazing, had little plant diversity, and was heavily dominated by exotics.

This has been a significant project with the resulting quantity and quality of water in the springs, demonstrating the impact that projects like this can have on environmental outcomes. This work further enhances previous plantings undertaken along the Hororata River.

Dan Cameron in the role of planting advisor front footed the restoration project. Graham and Adele are very grateful for the planting assistance from the Kids Discovery Plant Out project through Lou Drage at Te Ara Kakariki and Rolleston Christian School, plus the super bunch of Urban Young Farmers.

### Impact.

#### Short Term

- 1300 plants planted (approximately).
- Crystal clear spring water.
- Natural habitats are restored and thriving.

#### Longer Term

- Leveraged ecosystem services to improve surface water quality, e.g., natural filtration of contaminants, de-nitrification, and soil stabilisation.
- Kōwaro Canterbury mudfish and native birds thriving including species such as fantails and grey warblers.
- Sustainable seed source for plant species endemic to the Canterbury Plains.
- Increased mahinga kai values.



Near River Recharge Project – Lizard habitats surrounded by native flora.

## Willowmere Hororata.

Located near the foothills of the Southern Alps, Willowmere Hororata farms organically. This means a dedicated focus on environmental sustainability that begins and ends with the care of the land.

Willowmere Hororata has developed a native planting plan, applying regenerative practices to improve overall ecological function in an organic farming system. Native plant communities, dominated by tree species that are consistent with the indigenous species and tree boundary plantings, have been established, enhancing ecological connectivity, and increasing functional habitat on the Canterbury Plains.

Extensive riparian planting along Cordys Creek has been carried out with the intention of enhancing breeding habitat and food services for Canterbury mudfish Kōwaro by way of water filtration, and food in the form of insects and worms.

### Impact.

#### Short Term

- 2,000 native seedlings planned to be planted.
- Increased habitat for helping to create a safe nursery to increase Kōwaro Canterbury mudfish populations.
- Increased native biodiversity, creating habitat for native wildlife (insects, frogs, reptiles, and birds), stabilising soil, recreating linkages, and vegetation sequences, enhancing water quality and landscapes and providing a sense of place and Canterbury identity.

#### Longer Term

- Podocarp forest is large enough to be functional and includes plantings of kahikatea, miro, mataī and tōtara.
- Abundant range of fruits and foods from podocarp forests supporting larger communities of insects and native birds.
- Sustainable seed source for plant species endemic to the Canterbury Plains.
- Increased mahinga kai values.

## Case Study.

### Near River Recharge Project.

The global climate models indicate that Canterbury is likely to experience an overall increase in drought across the region over the next 20 years. Modelling shows we will experience more frequent, and potentially more severe, droughts through a combination of higher than average temperatures, reduced average rainfall, and greater variability of rainfall.

Without interventions now, waterway quality and quantity will be impacted. Halting the decline in Canterbury's waterway biodiversity, and sustaining it into the future, is of vital importance.

The Waikirikiri/Selwyn Near River Recharge project is a multi-million-dollar scheme to enhance cultural, environmental, and recreational values in the region by discharging clean Rakaia River water into the groundwater system near the Waikirikiri/Selwyn River during dry periods. This is believed to be the largest capacity Near River Recharge project in the world – specifically focused on the protection and enhancement of cultural, environmental, and recreational objectives.

### Replenishing and Sustaining Ecology.

The project aims to replenish clean river water in the groundwater system near the Waikirikiri / Selwyn River during dry periods. The application of water to the ground surface does not result in the direct mixing of waters from different catchments and has been assessed against Papatipu Rūnanga values. The soils, gravels and plant roots effectively filter the water, like a wetland water filtration system.

Aiming to increase groundwater levels and flows in the Waikirikiri / Selwyn River and Hororata River during dry periods, creating a better habitat for Canterbury mudfish Kōwaro – the most threatened of New Zealand's mudfish species and considered a taonga species.

The edges of the recharge basin have also been planted with native seedlings and plant species to encourage native birds to nest nearby.

## Engaged Stakeholders: A recipe for success

As a core component of the Canterbury Water Management Strategy, the project was recommended by the Selwyn Waihora Water Zone Committee and included in their Zone Implementation Programme Addendum in 2013. The Near River Recharge project cost around \$2.8 million and was funded by Environment Canterbury and the Ministry for the Environment's Freshwater Improvement Fund, with CPWL providing in-kind support.

In September 2020 representatives from Environment Canterbury, Taumutu Rūnanga, Selwyn Waihora Water Zone Committee, CPWL, Department of Conservation (Te Papa Atawhai), project contractors, and the Selwyn District Council joined project leaders and students from Greendale School to mark the official opening of the Waikirikiri / Selwyn Near River Recharge Project.

Harnessing water from a high-pressure pipe connected to the Rakaia River through the CPWL scheme, the water enters a purpose-built valve house, where the flow is regulated before being discharged into a sizeable and permeable basin. At the far end of the basin, an overflow channel allows water to percolate into the groundwater system, recharging the aquifer and eventually reappearing in the springs in the lower Hororata River – and the lower Waikirikiri / Selwyn River, enhancing flow at the Chamberlains Ford and Coes Ford recreation areas.

## Living Laboratory.

Beyond its environmental impact, the project demonstrates a deep commitment to ecological restoration. Lizard-friendly rockpiles have been established at the project site, fostering thriving habitats.

Students from Greendale School have adopted the Near River Recharge project as a Living Laboratory through Enviroschools, and have planted a native forest on location. Principal Bronwyn Harding says it is a wonderfully rich, real-life learning opportunity for Tamariki. *"It provides an opportunity to explore katiakitanga/stewardship and to develop an understanding of the importance of biodiversity."*



## Responding to Climate Change.

**We have a responsibility, and an opportunity, to do our part to have a positive impact on the planet for current and future generations.**

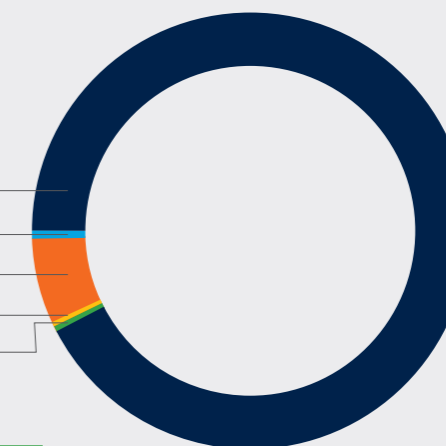
The earth's population is projected to reach over 10 billion people by 2050, which could require a 70% increase in food production. However, land suitable for farming is shrinking by 5 million hectares every year (globally) due to environmental change, and water is becoming increasingly scarce. CPWL will work with shareholders and the broader agricultural industry to encourage best farming practices to help preserve soils and improve water efficiency.

We are committed to reducing our carbon footprint and proactively addressing climate change challenges.

### Carbon Footprint 2022/2023 tCO2e

- Electricity
- Other
- Vehicles
- Flights
- Waste

- 92%
- 1%
- 7%
- 0%
- 0%



**Total 1,098.57 tCO2e**



# SUSTAINABLE WATER GROWING OUR WORLD.

Mā te tauwhiro wai ka tipu tō tatou ao.





# CENTRAL PLAINS **WATER**

Sustainable water growing our world.

Mā te tauwhiro wai ka tipu tō tātou ao.

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