



# Waitaki's Green Growth

Irrigation has already transformed the Waitaki valley in northeast Otago and more expansion is underway. **Vicki Jayne** profiles one of the major players – North Otago Irrigation.

The impact of irrigation on North Otago's landscape is evident. Irrigators stalk the hills and valleys like giant stick insects, once tawny landscapes now sport a green glow and areas that previously favoured sheep now offer lush grazing for dairy cows.

This transformation comes courtesy of water sourced from the mighty Waitaki. The country's fourth largest river in terms of flow, it has proved a reliable provider – even during challenging drought conditions such as the 2014-15 summer.

That reliability has been supporting hydro-electric activity since the 1930s – and the three dams on the river were an obvious start point for rural irrigation in the area. Downstream of the dams, there is still sufficient flow to reliably support several irrigation schemes – the newest of which is North Otago Irrigation Company (NOIC).

One of five shareholders in the Waitaki Irrigators Collective (see box page 22), NOIC is now in its 10th year of operation – and in expansion mode.

Officially opened in October 2006, it is a piped and pumped scheme which already delivers pressurised water to some 100 shareholders with more due to come on stream when its planned "second stage" is completed later this year. Extending the company's existing 30,000 hectare "command area" further to the south and east, it will bring an extra 25,000 hectares into the scheme.

It is a major undertaking, with a budget estimated at around \$57 million. This includes an upgrade of existing facilities – including expansion of the original head pond to triple its capacity, the installation of massive new 2.8MW pumps and 114 kilometres worth of pipes.



As with stage one of the scheme (which cost around \$75.3 million), the expansion is being funded through share issues, bank funding and a loan from the Waitaki District Council.

NOIC operates as a limited liability company that is shareholder owned and operated on a community cooperative philosophy. Shares are issued to landowners who are in a position to take advantage of the irrigation and after issuing a prospectus for its expansion in October 2014, the company was able to close it successfully subscribed by the end of that year.

Since then, it has signed a \$48 million contract with McConnell Dowell and expansion work started in mid-2015. It wasn't all plain sailing – in fact, the company quite quickly ran into a potentially explosive situation when the contractors started laying a new foundation to support the installation of new motors at the company's Black Point Road pumping station.

As company chief executive Robyn Wells reported:

"We were surprised by the discovery of unexploded ordinance in [the pump shed] which appeared to have been left undisturbed since 2006" when the first pumps were installed.

"This really was what we call a 'black swan' event – something that we could not have imagined happening."

The stabilised form of gelignite was found last July and while it delayed pump installation – and tested the company's Crisis Management Plan (CMP) – it hasn't altered the scheme's completion date, she says.

"We are grateful that through a rigorous and inclusive process, we now have a clear pump station building and a more robust CMP."

When installed, the original 2.3MW pumps were reputed to be the largest in the Southern Hemisphere. The new 2.8MW version weighs in at 24 tonnes and when it kicks into life early this year, it will suck up power at a rate equivalent to around 800 homes.

The completed expansion will altogether include four



Expansion of the original head pond to triple its capacity.



North Otago's landscape now offers lush grazing for dairy cows



114 kilometres of pipes to be installed.

## WAITAKI IRRIGATORS COLLECTIVE

Formed in 2010 with the key objective of protecting shareholders' existing water rights, the Waitaki Irrigators Collective (WIC) represents over 580 irrigators. Together, their irrigable command area is more than 75,000 hectares across North Otago and South Canterbury – representing around 12 percent of this country's irrigated land.

WIC shareholders include the five major regional schemes and a society of individual irrigators that take water from Lake Waitaki,

the Lower Waitaki River (or its tributaries or connected groundwater) and use that water to irrigate land downstream of the Waitaki Dam.

**The five members are:**

1. Morven, Glenavy, Ikawai Irrigation Company which irrigates over 20,000 hectares on the north bank of the Waitaki River.
2. North Otago Irrigation Company.
3. Kurow-Duntroon Irrigation Company which has a siphon intake structure attached to

the Waitaki Dam, on Lake Waitaki.

4. Lower Waitaki Irrigation Company – a community irrigation scheme which irrigates over 20,000 hectares on the Waitaki plains to the northwest of Oamaru.
5. The Maerewhenua District Water Resource Company – a small community irrigation scheme with a command area around the Duntroon and Maerewhenua areas on the South Bank of the Waitaki River.

additional pumps and when fully operational, the company will be able to take up 100 percent of its consented maximum take of 8220 litres per second.

Existing investment in irrigation infrastructure has already had an impact on the area. A report commissioned by the Waitaki Irrigators' Collective in 2014 found that irrigation schemes in the Kurow-Duntroon area had pumped an estimated \$77 million into the area's economy. That study covered just 8000 hectares of irrigated land.

In a submission to the Canterbury Regional Council in June last year, Wells pointed out some of the regional benefits of NOIC's irrigation scheme as derived from a study using comparative census data from 2006 to 2013. This included a \$48 million boost to the area's GDP and employment contribution of 274 jobs.

In the same period, land use had undergone significant intensification. From usage that consisted of 52 percent sheep, 21 percent dairy, 12 percent dairy support and 25 percent arable, deer and beef, it had, in 2013 changed to a proportional use comprising just nine percent sheep, 69 percent dairy, nine percent dairy support and 12 percent arable, deer and beef.

Social indicators revealed by the census include a growing population with a higher proportion of both working-age people and families plus increased building consent activity.

A NOIC-commissioned report looking at the economic benefits of its expansion – both one-off during construction and ongoing – estimated a boost in local economic output of \$104 million a year, a 5.8 percent lift in employment and an addition of \$16 million a year to household income. Most people in the area recognise the economic benefits of the scheme, says Wells, though there are concerns around river flow levels, the management of nutrients and controlling runoff. The scheme, she says, does address environmental issues.

"Every irrigated farm has to have a plan dealing with irrigation, effluent, soil, nutrients and riparian management. Audits and ever-increasing standards provide a classic continuous improvement loop. The evolving technology of irrigation allows farmers to measure, monitor and control their operations on the basis of rich data."

In last year's Environmental Farm Plan audits, 85 percent of farmers graded three and above (on a scale of one to five) which was up from the previous year's 74 percent. The company has set up a water quality sampling regime to assess quality of water in creeks and streams against Regional Plan parameters. It also employs a fulltime environment manager, says Wells.

She believes North Otago has the potential to become a centre of innovation that will drive positive outcomes for everyone in the region. **WNZ**