



Hawke's Bay Regional Council (HBRC) is proud to be partnering with IrrigationNZ to bring this quarterly magazine to Hawke's Bay irrigators. The magazine is full of interesting news and information relevant to the irrigation sector, and this is an excellent opportunity for HBRC to get useful information to you as well. We hope that you all benefit in some way or another. As usual, HBRC welcomes your feedback and suggestions for what you would like to read about in these Hawke's Bay focused pages – you can contact us at waterinformation@hbrc.govt.nz.

Liz Lambert, Interim Chief Executive,
Hawke's Bay Regional Council

Portable pumps

So you've looked over the fence and seen your neighbour has a well but no pump, irrigator or water meter? But weren't they irrigating just last week?

There's plenty of leased land in Hawke's Bay where there's little to no infrastructure permanently on the property. Portable pumps and irrigators are bought on site by lessees or contract irrigators for a few days at a time before moving on to the next block of land.

HBRC gets data from 80 of these portable pumps which report back on over 300 consents. The pumps report their GPS location and volumes of water used in each 15 minute period. This allows HBRC to automatically 'latch' the data to the right well and consent, and monitor that the conditions of each individual consent are being met.

By telemetering the data, many irrigators also get text or email alerts as they approach an individual property's consented limits, enabling them to switch units off before they accidentally breach consents. This works for both rate of take and volume conditions.

The concept behind portable pumps has saved many growers from having to purchase and install their own meters when they have no pump or irrigation equipment of their own. HBRC understands the importance of the

Portable Pump Programme to land owners, lessees and consent holders. For this reason, when our auditing after the 2014–2015 season showed that the portable pumps were failing to perform, the last thing HBRC wanted to do was scrap the Portable Pump Programme.

Instead, HBRC decided to undertake a much more rigorous monitoring programme for these pumps. Multiple audits were undertaken throughout the 2015–2016 irrigation season as HBRC worked with the operators and service providers to find out why the pumps were failing and if we could ultimately improve the data quality.

Initial end of season audits are looking promising. These have highlighted to HBRC that, with good management, these pumps can perform as well as any fixed infrastructure. Lessons have been learnt and improvements made, and we are looking forward to achieving even better results with these units next summer.

For any land owner or consent holder who has portable pumps operating on their property, you can have your own account on the HBRC website so you can log in and see how much water is being used under your consent. Visit www.data.hbrc.govt.nz/wateruse to register for an account.

CALLING FOR WINTER TELEMETRY AUDITS

HBRC is once again calling for consent holders to voluntarily submit their winter water meter reading for the month of July, so the quality of the data coming into HBRC can be checked. Staff can quickly see if your telemetry unit is under or over reporting so corrections can be made before the next season.

Quality data is important to HBRC with so many people now asking for the data. The data is no longer about just checking compliance with consent conditions. The data also being used in scientific modelling and state of the environment reporting and is provided online through LAWA (see the article over the page) plus anyone else who requests water use data, such as the Ministry for the Environment.

You won't know if your unit is under or over reporting until you undertake an audit. It's worth checking as over-reporting usage could be eating into your consented allocations. It's as easy as emailing a photo with the July date and time to waterinformation@hbrc.govt.nz. HBRC staff will check it and then work with you and your telemetry provider to solve any problems.



Farm Environment Management Plans (FEMPs) in the Tukituki

FEMPs are required in the Tukituki catchment by 31 May 2018. While this may seem like a long way off, HBRC is encouraging landowners to be proactive and start the process now. Completing an FEMP is only part of a landowner's future obligations but is an important step. It will help them to understand and plan for future requirements, such as stock exclusion and meeting nitrogen leaching limits.

As well as addressing the management of nutrients, soils, wetlands, riparian areas and collected stock effluent, irrigation also comes into FEMPs. Landowners who use irrigation need to include an outline of how they will

operate their systems to apply water efficiently and ensure actual use of water is monitored.

"The rules may seem daunting, but as more is understood about the intent of the Tukituki Plan, many landowners are becoming aware that they already have in place many of the farming practices that are being encouraged," says Colin Tyler, Land Management Advisor.

He says that landowners will find it easiest to break their plan into realistic and scheduled actions so that the job doesn't seem to be quite so daunting.

As in other parts of the country, if farmers are part of an irrigation scheme in the Tukituki catchment, the scheme will

be able to assist them to meet their specific FEMP requirements.

HBRC has been working with a number of industry groups and suitably qualified providers to make sure that landowners have choice in who can assist them to complete their FEMPs. We've been told that this is important – to find and work with someone who understands each farmer/owner, their business and their particular industry.

For a list of who to contact to assist you to complete a FEMP go to: www.hbrc.govt.nz Search on hashtag #FEMP

Land Air Water Aotearoa (LAWA)

How can you find out how much water is in the system when you are irrigating? You can either access data from Hawke's Bay Regional Council's recently updated website www.hbrc.govt.nz or make use of data on www.lawa.org.nz.

LAWA is short for Land, Air, Water Aotearoa. The website displays monitoring data from the 16 regional and unitary councils on river flows, and water quality in rivers, lakes and coast. It's still a work in progress with its aim of covering all natural resource monitoring, and an air quality data module will be available soon.

All the data showing on HBRC's website – river flow, rainfall and groundwater levels across Hawke's Bay – is shown in an easy to view format. Growers can get a better knowledge of how much surface and ground water is available in various zones, how much is consented and used, and how the consented water is used – for irrigation, town supply, stock, industry or other use.

Not every zone in Hawke's Bay has monitoring data, but the larger zones have multiple sites and the data is linked to interactive maps showing well locations and monitoring sites; a click will open up the scientific data. Rainfall data for example shows as 'rainfall so far this month', 'rain last month'

and percentage of monthly median rainfall, as well as charting rainfall for the last 24 hours, 7 days, 30 days and 12 months. Or you can track water levels for bore sites over the past 6 or 12 months and compare it with the normal range.

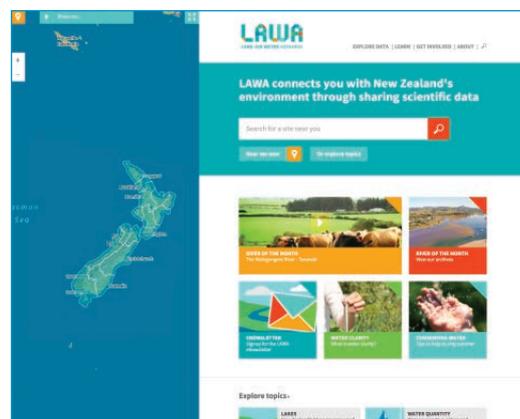
The regional and unitary councils collaborated to develop an earlier version of the shared website a few years ago. This developed into LAWA when additional partners – the Ministry for the Environment, Cawthron Institute, and Massey University – recognised the value and came on board. LAWA also has support from the Tindall Foundation. Massey University's design studio, Open Lab, oversaw the design of the website and the consistent, easy to use navigation tools, while Cawthron Institute provides quality assurance for the data.

The goal of LAWA is to help local communities find the balance between using natural resources and

maintaining their quality and availability.

The consistent design overcomes some of the hurdles people find when navigating a variety of websites, each with a different layout.

LAWA also supplies a range of fact sheets. Hawke's Bay people can also view the River of the Month video in January which featured Te Karamū and the enhancement work that's been happening along its banks.



A screenshot of www.lawa.org.nz.



A screenshot of the rainfall module of online maps available on www.hbrc.govt.nz.

Online maps

Hawke's Bay Regional Council has been adding to the digital information available on www.hbrc.govt.nz over the last year, and one of the newest additions is a range of online maps.

At the foot of every page on the new Hawke's Bay Regional Council website is a banner for Online Maps giving access to maps and data grouped into different layers or themes. The maps can also be viewed on different devices including smartphones and tablets.

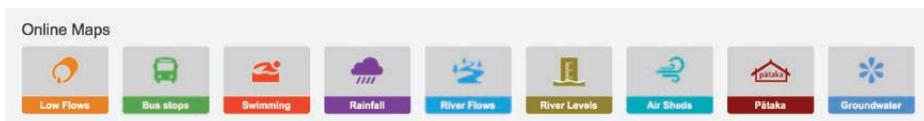
The map menu can be altered to show data on land use classification (LUC), resource consents (which HBRC is still improving), wells, airsheds, Pātaka (Treaty and Iwi maps) and Environmental Monitoring. Soil maps are available on a separate link to S-Map. The Environmental Monitoring has multiple layers for displaying different sites that HBRC monitors for air quality, river flows, low flow monitoring, recreational water

quality, ground water, rainfall, etc.

In this edition of IrrigationNZ News we are introducing the rainfall module. This shows where all our weather stations are.

The colour-coded rain drops show you how much rainfall there's been and whether this is a normal rainfall event or a 1 in 5 year event, etc. By hovering the cursor over a rain drop it will give the site name, or scroll down to the table below. Selecting view graph opens another page (HBRC's Hydrotel Web Server) which displays the rainfall recorded for the site over the past 24 hours.

At the very top of the graph, there's the option to change the timescale to display data from the past week, month, year or even set a custom range.



IN BRIEF

5-9.99L/SEC REMINDERS

With the irrigation season over, our accredited installers now have time to install the next round of water meters. All consent holders with consented rates of take between 5L/sec and 9.99L/sec must have water meters installed by 10 November 2016.

By using an IrrigationNZ Blue Tick Accredited company, you will be assured the job will be done right and to national standards. You also don't need to pay for an HBRC compliance officer to visit for a monitoring inspection to sign off your installation as your installer will complete all the required paper work.

A list of service providers working in the Hawke's Bay region is on www.irrigationaccreditation.co.nz/watermeasurement.

HBRC will be in touch with individual consent holders in the coming months about monitoring and reporting requirements for these consents.

SECTION 36 ANNUAL CHARGES

At the end of July, consent holders will be sent invoices for work undertaken by HBRC's Compliance team, Water Information Services and the Environmental Science team for work carried out from 1 July 2015 to 30 June 2016. Water take consent holders with monitoring requirements will be charged based on their chosen method of data submission (web and telemetry being the cheapest option).

Any water take consent holder who has been subject to an investigation into non-compliance (or potential non-compliances) during 1 July 2015 to 30 June 2016 will receive additional charges from the Compliance team. The Science charges (zone based) will also be coming out at the same time. In October 2015 we held zone meetings to get feedback on how the charges were split amongst the community, and the decision was to keep the charging model the same.

Groundwater model: managing what we measure

A revised plan for the policy review of land and water resource management across the greater Heretaunga and Ahuriri management zones is moving ahead again. This review is commonly referred to as TANK, as it includes the catchments of the Tutaekuri, Ngaruroro and Karamu Rivers, as well as the Ahuriri catchment.

HBRC needs to meet requirements under the National Policy Statement for Fresh Water Management. This requires HBRC to establish objectives and set limits for fresh water, water quality, flows and allocations. This major review will lead to the next proposed changes to the Regional Resource Management Plan.

The current timeframe for notifying the TANK plan change is December 2017.

A major driver for the timing of the plan change is that 222 resource consents for current water takes in the unconfined aquifer areas will expire in May 2019, and HBRC needs to provide certainty to consent holders and submitters.

Involved in the policy development is the TANK Group which includes representatives from different stakeholder groups. These include various iwi groups, vegetable growers, pip fruit, DOC, Fish and Game, Councillors from the city, district and regional councils, Cawthron Institute, as well as policy, land management and science staff from HBRC.

Our science team is developing surface and groundwater flow models to simulate the hydrological interactions within TANK catchments. This will provide a tool for both the Group and the public to better understand connections between surface and aquifer flows and to be able to see scenarios showing the effects of different abstraction options.

HBRC's Senior Resource Modeller, Pawel Rakowski, is working on this model.

"The construction of the model requires a lot of data, including well drilling records, groundwater levels, stream flows, climate records, land use data, and water abstraction records. Reliability of the data is key," he says.

To help the science team build a robust model, HBRC's Water Information Services team has been busy back-loading historical data and providing the scientists with water use records (i.e. water meter data that consent

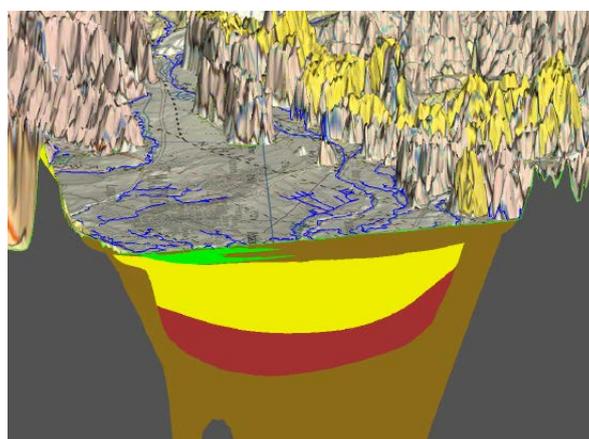
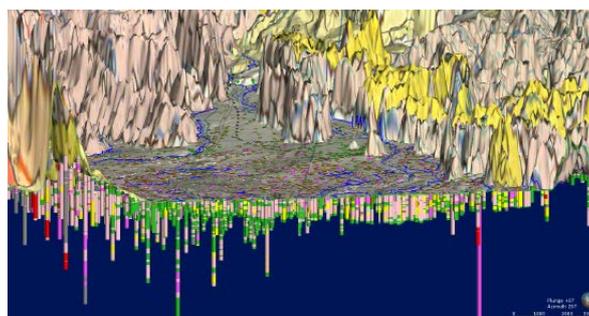
holders provide to HBRC). Data sets, some as far back as the early 1970's, have been reviewed for quality before being used in the model.

It's a positive step to use the information once solely used for compliance processes being used for science to improve our knowledge and management of our water. However it highlights the challenges HBRC faces in collecting quality data and, in particular, quality long term data sets.

More than 1800 water meters are recording and reporting water use to HBRC. However many of these data sets are short-term, as meters were not widely required until the Water Meter Regulations came into effect in 2010. In 2009 there were only about 500 meters reporting usage, which were mainly large takes (industrial and large scale irrigation) or surface water consents.

The last 'phase in' of the water meter regulations is coming to a head this year. By 10 November 2016 all consented holders with authorised rates of extraction of between 5 litres/sec and 9.99 litres/sec will need water meters installed, equating to around another 200 meters. Once these are installed, the majority of water use in the region will be metered and we will be able to make better decisions with evidential support and not just assumptions about water use and grower behaviour for these smaller takes.

There's a saying about resource use – "we cannot manage what we do not measure".



Cross-section through Heretaunga Plains, looking west. Upper picture shows drilled wells (green and yellow – sand and gravel, pink – clay and bedrock). Lower picture interpreted geological layers (green and yellow – sand and gravel aquifer, brown and grey – impermeable clay and bedrock).

Consent holders can do their part in contributing toward a robust model by ensuring they install water meters when required, have these tested for accuracy, ensure they are well-maintained and keep accurate records of water use. The more precise the data is (15 minutes/daily/weekly/monthly) affects how useful the data is for science work and beyond consent condition compliance monitoring.

By meeting recording and reporting requirements, irrigators will be contributing to future decision-making and allowing it to be undertaken with the best possible knowledge.