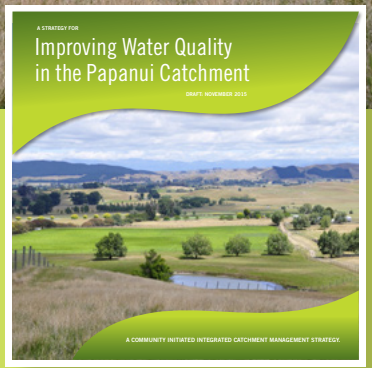
MANAGING WATER QUALITY

Papanui Catchment



ISSUE 4 2017

CATCHMENT MANAGEMENT STRATEGY UPDATE

The Papanui catchment management strategy was completed about 18 months ago with good local community input. This newsletter is an update on what's been happening since the launch of the draft strategy in December 2015, plus a reminder of some of the targets we aim to meet.

Farm Environment Management Plans (FEMPs)

By May 2018 FEMPs will be required for every property in the Tukituki over 10ha, and most properties that are between 4 and 10 ha and graze livestock or grow crops.

Rather than applying a range of 'one size fits all' rules, a 'farm plan approach' looks at specific risks and issues associated with individual farms. In this way FEMPs will drive collective on-farm actions towards improving water quality in the Papanui and wider Tukituki Catchment.

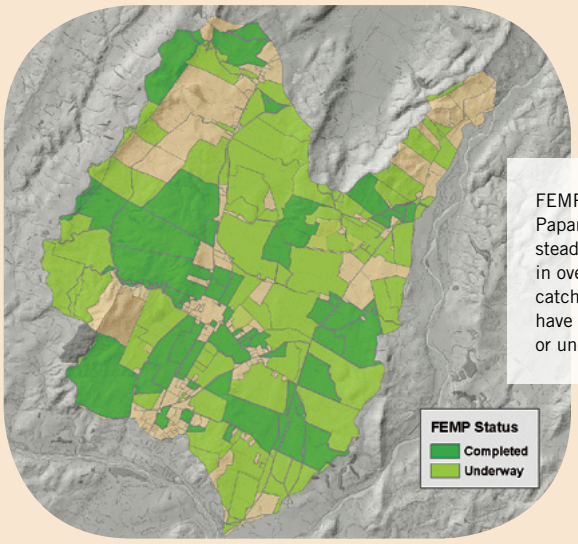
At the time of printing, well over half of the Papanui sub-catchment area already has a farm plan completed or underway. Only the Maharakeke sub-catchment near Takapau is further ahead.

There are different options available for landowners and managers completing their FEMP requirements. The decision is likely to come down to the size and complexity of your farming operation, as well as what you want from your FEMP.

For example, some farm plan providers can offer expertise on improving farm production, identifying and capitalising on soil types or planting for aesthetic or environmental enhancement.

You may wish to get in touch with your fertiliser company or industry sector group (e.g. Beef & Lamb NZ, Dairy NZ, Hort NZ, The Foundation for Arable Research) and ask what they can offer.

More information on FEMPs including a full list of farm plan providers can be found at **www.hbrc.co.nz (search: #FEMP)**, or call **0800 108 838** and ask to speak to one of the land management team.



FEMP progress in the Papanui has been steady; landowners in over half of the catchment area either have a plan completed or underway.

SMALL BLOCK OWNERS - Are you farming between 4ha and 100ha and not sure how to approach the FEMP process?

We understand that most small blocks are relatively simple and low impact. However, they also miss out on some of the services and economies of scale available to larger farming operations.

We are currently looking at options for making FEMPs easy and inexpensive for small block owners. If you haven't already been to one of our small block owner meetings, please get in touch with Warwick **warwick@hbrc.govt.nz** or **0800 108 838**

Excessive weed growth is exacerbated by a lack of riparian shade in the Papanui Stream

Just planting the northern bank can be enough to prevent excessive weed growth

Shade Shade Shade…

Anyone who lives in the Otane district will tell you that it's sunnier and drier here than anywhere else in Hawke's Bay.

It will come as no surprise then, that our streams and waterways heat up and dry up faster than anywhere else too.

This combination of sunshine and high temperatures, along with high sediment and nutrient concentrations, leads to a proliferation of weed and algae growth. In a classic 'Chicken or the egg?' scenario, the weed then traps more sediment and causes physical and chemical changes in the stream that release yet more phosphorus.

Riparian planting, or even just well positioned shade trees, can massively reduce weed growth. By doing so, they can also reduce management problems such as flooding and damage to floodgates and water pumps.

We are currently working with landowners who have streams on their properties, looking at options for improving shade as well as other benefits. Every situation will be different and will depending on the location, morphology and orientation or the stream, as well as the maintenance and management requirements. Some areas are prone to flooding, some require occasional clearing or have weed issues. All of these factors will have an influence on how riparian margins are managed including what can be planted.

Wherever possible, we are encouraging the use of native riparian plants. Once established, native plants offer a permanent, low maintenance, evergreen option. Some native flaxes and sedges are also able to cope with occasional flooding. An additional benefit of planting natives includes encouraging native wildlife. There are already some excellent examples of riparian planting in the catchment.

We have set ourselves an ambitious target of 3km of riparian planting in the catchment next winter. If you have a stream or waterway on your property, we'd like to hear from you. We can offer advice on riparian management, different planting options and potentially assist with your planting costs, regardless of whether you purchase seedlings from us, or have your own nursery supplier.

Feedlots

HBRC has held meetings with farmers in Central Hawke's Bay to clarify the rules about feedlots.

Following the gastro crisis in Hawke's Bay there had been public consternation about the proximity of some feedlots to waterways. Since then HBRC staff have spent a lot of time engaging with farmers who operate intensive wintering systems including feedlots and feedpads.

A number of unconsented feedlots are now in the process of applying for resource consent. For some this has meant upgrading infrastructure or changing their systems. As a condition of consent, ground and surface water testing will be required to monitor any effects on water quality.

FEEDLOTS AND FEEDPADS

DECEMBER 2016

Heavily stocking an area to the extent that grass cover is lost can lead to contaminants and nutrients leaching into ground water and/ or running off into surface water.

This flyer summarises the rules that apply to landowners and sets out Hawke's Bay Regional Council's expectations and approach to compliance for the 2017 season.

FEEDLOT

The Hawke's Bay Regional Resource Management Plan (RRMP) describes a feedlot as an area of land on which animals are kept and fed, for more than 15 days in any 30-day period, where the stocking density or feedpad structure, such as a concrete pad, precludes the maintenance of pasture or ground cover. Strip grazing could be included under this definition if not managed appropriately.

FEEDPAD

A feedpad is an area of land to which animals are brought for supplementary feeding on a regular basis, where the stocking density or feedpad structure precludes the maintenance of pasture or groundcover.

KEY POINTS:

- Rules around feedlots already exist
- Hawke's Bay Regional Council will be taking a more active approach to ensure that all feedlots and feedpads comply.
- Landowners who can't comply with the 'permitted activity' aspect of the rules will require a resource consent BEFORE they start the 2017 season
- If you are not sure what to do, contact Hawke's Bay Regional Council.

HAWKE'S BAY REGIONAL COUNCIL

RELEVANT RULES

SCRAPINGS

WILL I NEED A RESOURCE CONSENT?

HAWKE'S BAY REGIONAL COUNCIL

For more information contact:
Compliance: Kelly Peacock - 06 833 8097
Land Management: Warwick Hankins - 06 833 8001
Contacts: Paul Barrett - 06 833 8014
www.hbrc.govt.nz

The hardworking staff and students from Otane Primary School

Otane riparian planting demonstration site

The riparian planting demonstration site at Otane has been developed to give us a space where we can experiment with local conditions, and where landowners can find out what is going to suit their stream edge.

HBRC Land management advisor Warwick Hesketh was keen to find a site that was easily visible and typical of the challenges managing waterways in this catchment (i.e. occasional flooding, extremely dry summers and access for maintenance).

"We also wanted to provide an opportunity to get the local Otane primary school involved," he says.

Selecting the right species for the conditions and ultimate outcome becomes important. What was needed were plants that will protect the stream banks and provide shade, but this site floods regularly and it's important to plant to avoid any future management issues.

Jack Ritchie from Tree Guys nursery selected a range of hardy grasses and shrubs that can withstand occasional flooding and do not have excessive maintenance requirements.

Unfortunately, a dry winter meant we planted later than usual, and although our seedlings got off to a good start, the prolonged dry has taken its toll.

"When I last weeded the seedlings in January quite a few had succumbed to the heat. Fortunately, there were still some of the tougher varieties hanging on, so it won't require a total replant this year," says Warwick.

A special thank you to the Richardson family for giving us access to plant on their land, Jack and the staff at Tree Guys for their help and supervision, our farmer helpers and of course the wonderful staff and students at Otane Primary School!

Recycled vineyard post scheme

With the Tukituki plan change deadline for stock exclusion looming, hopefully landowners with streams on their property will be thinking about their fencing requirements. Depending on the amount and type of fencing needed, the option of using recycled vineyard posts is worth considering.

To get an idea of interest in the Papanui Catchment, HBRC delivered five decent truckloads of vineyard posts to a drop off near Otane. The pick-up and drop-off was coordinated by Hawke's Bay Sustainable Wine Growers with posts donated by the Mission Estate and Pernod Ricard vineyards. Approximately half of these have been used so far.

Rick White has used recycled vineyard posts on a recent stream fencing job. Obviously there is some variability among the posts, but Rick was particularly impressed with the larger grade angles and strainers. "Given the amount of fencing that some of us will have to do in the next few years, having access to fencing materials is a big help".

Contact Warwick Hesketh at the Hawke's Bay Regional Council 06 833 8001.

Rick White, Xan Harding (Hawke's Bay Sustainable Wine Growers) Warwick Hesketh (HBRC) and fencing tutor Para Smith (Turanga Ararau)

HBRC Land Management Advisor Warwick Hesketh says that the recycled post scheme is still in a trial stage. "Ideally we would like to be able to open it up to all farmers in the Tukituki Catchment. If you are farming in the Papanui or another priority sub-catchment and keen to make an early start on your stock exclusion requirements, recycled vineyard posts might be an option."

Science update

It's been three years since we first started our water quality intensive science investigations in the Papanui Catchment.
So **what** have we done? **What** have we learnt? And **what** do we still need to find out?

WHAT WE DID

Gauging and water quality monitoring at 32 sites across the catchment was carried out by HBRC staff 7 times over 12 months at different flow conditions.

- Tests were carried out to assess nutrients, sediment, faecal contamination and water clarity.
- Stream Ecological Valuation (SEV) surveys were carried out at seven different sites
- 6 groundwater monitoring bores were drilled ranging from 2m and 37m in depth. These have been monitored monthly for water quality since 2015. One-off samples were also collected from a number of private bores

WHAT ARE WE DOING NOW?

- Surface water quality monitoring has been scaled back to once a month at the Middle Road sampling site. This site will be used to monitor any changes that occur at catchment scale.
- A permanent gauging station has been installed near the Middle Road Bridge. This will provide telemetered flow and environmental monitoring data that will be publicly available online.
- We are working with the Central Hawke's Bay District Council to better understand the contribution from the Otane wastewater plant as part of the consenting process.
- Water age testing of groundwater and surface water samples are being processed by the institute of Geological and Nuclear Science and will be available this year.
- A bio-physical assessment of catchment waterways is currently underway to help work out where riparian planting and other strategies for improving water quality will have the greatest effect.

WHAT WE'VE LEARNT

- Summer temperatures and dissolved oxygen reach levels well outside the optimal range for indigenous fauna.
- Significant sources of phosphorus (P) in the Papanui appear to be intensive land use on peat soils, the Otane oxidation ponds (although this is currently being addressed) and intensive winter feeding operations.
- Surface water and shallow groundwater at Walker Rd are low in dissolved nitrogen and phosphorus confirming that there is not a significant external influence from the Waipawa River.
- There is a high concentration of P associated with the outflow from the Otane oxidation ponds, although the overall load appears to be relatively small. An upgrade has been proposed by CHBDC to deal with the P concentrations.
- The Kaikora/Argyll arm contributes a greater average daily load of Dissolved Reactive Phosphorus (DRP) than the Old Waipawa Riverbed (OWR) bed arm. However during winter high flows, the load of Total Phosphorus (TP) from the OWR was higher.
- Dissolved inorganic nitrogen (DIN) levels are relatively low across the catchment. Total Nitrogen is high due to high levels of organic nitrogen which is not as readily available to support weed and algae growth.
- Even the upper Kaikora stream (Argyll and College Rd) contributes significant amount of (DRP), despite not having a great deal of intensive agriculture.
- Phosphorus and *E. coli* levels are at their highest in the winter, but summer levels are still well above target.
- Stream ecological valuation (SEV) surveys showed that ecological values were considerably higher where there was shade and stock exclusion.
- Beneath the Middle Road Bridge, the Papanui is strongly influenced by shallow ground water from the Tukituki River. Flow volumes increase by a factor of ten.
- Flow volumes can vary markedly throughout the year. The average flow volume at Middle Rd Bridge was 197 litres/sec, but recorded gaugings have ranged between 2 L/sec and 4710 L/sec. In the summer, many tributaries dry up completely, some even disappear underground then re-emerge downstream.

WHAT WE STILL HOPE TO FIND OUT

- A better understanding of the interaction between surface water and deep and shallow groundwater
- Statistically reliable water quality trends through ongoing monitoring
- Where to best target planting and invest in other mitigation strategies for improving water quality
- Cost effective ways of establishing rapid and good quality riparian habitat
- Long term solutions for managing stream weed growth.

HAWKE'S BAY
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This is a newsletter for landowners in the Papanui sub-catchment. If you know of anybody who is not receiving this newsletter but who should be, please let us know.

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JUNE 2017