

# Rangitāiki Freshwater Futures Community Group

## Workshop 7 Notes: Update, mitigation bundles and water quantity

Galatea Hall, 50A Mangamate Road, Galatea

Tuesday 3 April 2018 commencing at 9.08am

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**Members present:** Larry Wetting (Chair), Alamoti Te Pou (Deputy Chair), Alan Law, Atamira Nuku, Bill Clark, Bill Kerrison, Cathy Brown, Christina Bunny, James Doherty, John Gibson, Kerry Snowden, Kirsty Joynt, Linda Conning, Mark Ross (partial), Matt Gow, Ngapera Rangiaho, Nicholas Woodley, Tom Lynch

**Apologies:** Beverley Hughes, Colin Maunder, Craig Rowe, Daryl Christie, Earl Rewi, Matt Osborne, Nick Doney, Steve Brightwell, Wetini Paul

**Other absent members:** Gareth Boyt, George Johnston, Robert Pouwhare

**BOPRC Staff present:** Simon Stokes (Relationship Manager), Kerry Gosling (Facilitator), Stephanie Macdonald (Facilitator), Nicki Green (Senior Planner – Water Policy), Santiago Bermeo (Senior Planner – Water Policy), James Dare (Environmental Scientist), Andrew Millar (Senior Planner – Water Policy), Michelle Lee (Planner – Water Policy, scribe).

**External presenter:** Lee Matheson (Perring Ag Consultants)

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### Related documents circulated prior to or at the meeting:

- Workshop briefing paper – Mitigation bundles and baseline profit estimations.
- Introductory information: Setting environmental flows in Water Management Areas.

## 1 Welcome /Updates/Focus of the day

Simon Stokes welcomed everyone to the meeting. James Doherty opened the workshop with a karakia. Facilitators introduced Nicholas Woodley from the Whakatāne District Council.

### 1.1 Agenda, purpose and updates

Nicki explained the work programme and current progress. Kerry introduced the purpose of the workshop, and the agenda for today.

- National, regional and Plan Change 12 updates
- Mitigation bundles and costings
- Rangitāiki groundwater quantity
- Surface water quantity
- Plan Change 9 update – dairy wash-down takes: issues in upper Rangitāiki
- Next steps.

Key presentation slides are available online.

Confirmed the purpose of the group (as outlined in slides). The Council is also engaging with iwi and hapū on this work in parallel. Staff are responsible for presenting the agreed and different views gathered to Councillors who are the decision makers.

## 2 National and Regional update

Council is keeping a watching brief on possible water management changes brought in by the new Government. The Minister for the Environment signalled in his speech to the Resource Management Law Association the Government may introduce changes to policy and regulation relating to freshwater management. It is possible there will be a new

sediment attribute in the NPSFM. Halting the decline in water quality is a priority for the new Government. How this will be done has yet to be determined.

Nicki explained the “draft regional ‘swimmability’ targets”. The modelling undertaken by the Ministry for the Environment is showing the region is meeting the national target already. But there is an expectation further improvements will be made in the region to help contribute to meeting the national target. These regional targets do not replace or override the work we are doing in this WMA to set objectives and limits for swimmability/primary contact recreation.

Regional updates included: Te Maru O Kaituna - river document, RPS Change 3 (Rangitāiki River) and Plan Change 9 (Water Quantity).

**Question / comments:**

*What is the nature of the appeals on the Regional Policy Statement Change 3 (Rangitāiki River)?* A: Two appeals have been lodged. Details are publically available on this webpage: <https://www.boprc.govt.nz/change3>.

*What is the status of the Rangitāiki River in terms of Swimmability?* A: The Government’s national modelling is high level and does not include all tributaries. Modelling results showed the water quality in the Rangitāiki River is suitable for swimming (see [LAWA](#) or [Council](#) websites for results). Not all swimming spots were modelled nationally for swimming water quality targets.

*Are swimming sites off the main river stem, like Whirinaki being considered?* A: The Government’s modelling probably does not include the Whirinaki. The Council’s water quality modelling for the whole catchment is currently progressing. It includes *E.coli* contamination.

### **3 Project update**

Nicki explained where we are in the process and gave a quick reminder of what had been presented in previous workshops. This included water quality modelling. The results of the modelling work are expected to be available in May/June.

The key part of this workshop is considering mitigation options.

### **4 Mitigation bundles and costings**

Santiago Bermeo advised this work is related to the river quality modelling work. Good management practice and mitigation option material was drawn from the Group’s previous input during workshops 5 and 6. Furthermore, an online survey (to the Freshwater Futures community group members only) was conducted after that workshop. While some useful feedback came through, the response rate was low.

Work was commissioned from PerrinAg and Landcare Research on mitigation bundles, costs and effectiveness. The mitigation measures are grouped into four bundles: Current, M1, M2 and M3 (the terminology has changed from ‘good management practice’ and ‘additional mitigations’). These bundles will be factored into the modelling work. The feedback also suggested a list of potential land use restrictions and measures to further management point source discharges. Those are not included in the mitigation bundles and will be considered later.

The mitigation bundle recommendations are based primarily on a literature review and the consultant’s experience of farming systems in the catchment. Staff will also discuss these recommendations with the dairy, kiwifruit, sheep & beef and forestry industries.

This work is exploratory at this stage. No mitigation measures or management options have been finalised yet.

Modelling will never be 100% correct, we are trying to represent reality the best we can and look at relative changes. The proposed mitigation practice bundles are based on expected effectiveness and cost, but this will be tested through the upcoming analysis.

Mitigation bundle costs will generally be expressed in terms of operating profit (Earnings before Interest and Tax (EBIT)), not net profit. This is because we are mainly interested in the impact of mitigation practices across similar farming systems, regardless of capital structure or individual financial circumstances [e.g. whether they own their farm/orchard freehold or not]. EBIT allows us to compare the relative difference in cost between options, regardless of different capital structure or individual financial circumstances.

**Question / comments:**

*Are the mitigation options specific to the Rangitāiki?* A: Not at this point. The draft mitigation bundles are the same for Rangitāiki and Kaituna catchments. They may need to be separated into the separate catchments later on if that was deemed to be necessary.

*Has the work been peer reviewed?* A: Not yet, other than internally within BOPRC, Perrin Ag and Landcare Research.

*People currently undertake different mitigation options to various degrees. How is current management practice determined?* A: The modelling is based on average practices for each farming/growing system. Current management practice is based on information from the prior workshops, the results from the survey and the consultant's knowledge of the catchment. Upcoming discussions with industry bodies will also help to better define current practice.

*Is economic/price volatility considered?* A: Yes, some sensitivity analysis on changes to output prices, input costs will be undertaken.

*We have areas of significant land use change. Land use is changing from dairying to forestry as compliance costs are becoming too expensive. Is land use change being considered?* A: We are looking at land use change. However, it is not part of the work on mitigation bundle options but rather development scenarios, discussed previously with the community group. Land use change will have a significant effect on water quality.

*Have you considered the productivity of low class land?* A: Yes, some of the mitigation practices include retirement of marginal low class land, which would generally be less productive.

*Would the subsidised costs be accounted for?* A: The costs considered here are the 'absolute' cost excluding subsidies, but we can discount subsidies later on.

*Are environmental costs included?* A: At present we are just looking at farm costs.

*Is the value of the land included in the cost of each mitigation option?* No, although changes in profitability may affect land value. [It is very tricky to predict the impact of environmental regulation on land values, see for example: <https://www.agfirst.co.nz/project/effect-environmental-constraints-land-prices/>]

*The use of EBIT (Earnings Before Interest & Taxes) was questioned.* A: See the full report and the notes above about the use of EBIT.

## 4.1 Activity - Mitigation bundles and costings

Staff asked for members in their sector group to provide focused feedback on the mitigation bundles. Mitigations are targeted at reducing nitrogen, phosphorous, sediment and *E.coli*.

Groups were provided with the mitigation bundle worksheet, for members to consider mitigation bundles. The key questions were:

1. **Are the mitigations in the right bundles? Why / why not?**
2. **Are there any sector appropriate mitigations missing that should be added?**
3. **Are any of the listed mitigations out of the question?**

The facilitators also asked the group to select the top three mitigation options for each bundle.

Clarification about what we call small, medium and large streams. Not formally defined but for the purposes of today, generally:

- The Dairy Accord applies to a stream that is deeper than 30cm (about reaching below the knee) and wider than 1m. The Dairy Accord required these streams to be fenced-off. So consider anything less than this to be a small stream.
- If the land has been drained and the drain was not a natural stream, it is not classified as a “stream”.
- If a natural stream has been straightened, it is still classified as a stream.
- “Streams” in this exercise only refers to permanent streams, not ephemeral/intermittent streams.
- Large rivers might be considered as those with average flow greater than 10m<sup>3</sup>/s, e.g. the main stem of Kaituna.

The output of this activity by areas is summarised in Appendix One of this workshop note.

### **Question / comments:**

It is challenging for members to assess whether a certain practice is currently common across the industry in the catchment or not. Fonterra is taking action against the odd few farmers that don't comply with the Dairy Accord. Letters have been sent to farmers that don't comply. Their milk will not be collected unless they comply.

Farmers only use fertiliser when it is necessary, because fertiliser use is expensive. It's up to farmers to decide on the application, rather than just rely on the advisors who are selling the fertilisers. There can be differences in opinion on how much fertiliser use is necessary.

Widening planted buffer zone around drains makes it more difficult to clean drains out.

Members suggested:

- Removing the word “planted” in dairy pasture bundles one and two: there was a discussion about using the word planted, or vegetated, or managed buffers and concerns with whether pest plants like blackberries would be considered to be “planted”. “Vegetated and managed” was agreed.
- Changing the word “infrastructure” to “technology” in dairy pasture mitigation bundle three.
- There was a discussion about the difference between permanent changes in stocking rates in M3 (i.e. to reduce intensity) and temporary or seasonal reductions in M2 (to reduce discharge during riskier periods).

Members also discussed the following options/considerations:

- Cut and carry zone. Lee noted this is only a mitigation if the fodder is carried out of the catchment.
- Milking once-a-day. Lee noted it is nitrogen importation that makes the difference, not the frequency of milking.

- Managing bringing in stock feed, which is related to grass growth.
- Fit for purpose riparian margins – steep areas may need a wider buffer zone. Mitigation riparian plants and safe rongoa use. Using indigenous plants for improving water quality was discussed. Some plants are used as rongoa. What effects could contaminants have on native plants? Using Mahoe instead of willow to stabilise river banks could be considered.

## 5 Baseline financial modelling

Lee presented and explained the baseline financial modelling for various farming systems.

## 6 Update Region-wide Water Quantity Plan Change (PC9) – addressing dairy wash-down take: issues in upper Rangitāiki

A resource consent is required to take and use water unless it is provided for under the Resource Management Act 1991 (RMA), or there is a rule in a regional plan that allows for water to be taken as a permitted activity. If water requirements for dairy farm wash-down and cooling water exceed the volume allowed to be taken as a permitted activity a resource consent is required. There are dairy farms in the upper Rangitāiki (and across the region) that now require a resource consent for wash-down and cooling as use is greater than the permitted activity threshold (under the operative regional plan). A rule in PC9 makes such consent applications a controlled activity for a period of 12 months.

A range of submissions in support and against were received. Hearings have been held and the hearings panel will issue their recommended decisions in June.

To find out more information about the Region-wide Water Quantity Plan Change (PC9), including the fact sheet and the progress, visit the webpage <https://www.boprc.govt.nz/waterquantity>.

### **Question / comments:**

*Is council recommending that water meters be required to determine the efficient use of water? Is a water meter required for dairy farm wash-down and cooling water? Water can be taken for stock drinking under the RMA without a resource consent. Under PC 9 all resource consents to take water require a water meter. Information for metering requirements for water used on a dairy farm will be provided.*

## 7 Surface water flow

To prepare members for the next workshop, James Dare, introduced the Environmental Flows Strategic Allocation Platform tool (EFSAP) for setting surface water quantity limits. At this stage, no feedback is sought.

- EFSAP will be used to help set environmental flows for fish habitat needs.
- Flow is important for stream ecology, as well as from cultural, fishery and recreation perspective.
- Maintaining flow variability in streams is important.
- Defining the minimum flow requirements and the reliability of supply will help support decisions on setting surface water quantity limits.
- Appropriate surface water quantity limits provide for flow variability in the stream.
- Further work with iwi and hapū to set flows and levels for cultural values is required.

### **Questions and comments:**

*When the river morphology changes, how would it be reflected in the flow? A: While the total quantum of water volume does not change, the change in water levels may have impact on freshwater values, like swimming.*

*Does Council's model take account for the flow and levels suitable for kids swimming and diving off the bridge in Te Teko?* EFSAP does not address recreational water level needs. Further work is required to address these needs.

*Has there been any general change of flows in the Rangitāiki in the last thirty years?* A: The "flow duration curve" changes depend on local factors like rainfall, terrain, soil and the condition of the site.

*What percentage of water use is surface water compared to groundwater?* In the Rangitāiki 87% of the water taken is from surface water and 13% is from the groundwater.

*Would Trustpower's water use be limited to the new minimum flow?* A: No, the resource consent sets the agreed conditions and restrictions including minimum flows, based on more detailed research.

The fact sheet 'Setting Environmental Flows in Water Management Areas' was distributed to members, (available online).

## **8 Rangitāiki groundwater**

Andrew explained the background and options for setting groundwater limits in the Rangitāiki Water Management Area. Simple groundwater balance assessments have been developed based on the current information. Interim groundwater allocation limits based on the simple water balance assessments were established in the Region-wide water Quantity Plan Change 9. More complex groundwater models with greater levels of confidence are being developed. However, they will not be complete in time to use in the Rangitāiki Water Management Area plan change process. We are seeking community group views on setting different locally specific groundwater allocation limits based on allocating a greater proportion of the simple water balance, before the complex groundwater model is complete. This would make more water available for allocation. However, it would increase the risk of adverse environmental effects on the groundwater resource, surface water bodies connected to it; and those who take from those surface water bodies. Those groundwater management areas that are currently over-allocated would remain over-allocated. The alternative would be delaying setting new locally specific groundwater quantity limits until further monitoring data is collected and the complex groundwater model is completed.

*Questions and comments:*

*What changes have been observed in groundwater recharge with recent high rainfall events?* A: Information will be provided on groundwater levels.

*Is there sufficient information to process the Murupara water bottling take consent and are consent applications peer reviewed?* A: An application to take groundwater for bottling in Murupara has not been lodged yet. Consent applicants are required to do an assessment of the environmental effects (AEE) of their proposal. The AEE must reflect the nature and scale of the proposed activity. The council reviews the AEE as part of making a decision on an application. The council can use consultants to assess the AEE. There is no requirement for a separate peer review in addition to the council's assessment.

*Is water storage in the upper Rangitāiki a practical alternative supply option to groundwater?* Trustpower's resource consent allows it to take up to 160m<sup>3</sup>/second above the Matahina dam. The flow in the Rangitāiki only exceeds that volume during flood events for very short periods of time (days) – approx. 1.5-2% of the time. There are lots of challenges with harvesting high flows. We will explore options if we need to.

The fact sheet 'Introduction to Groundwater Environmental Level Setting' was distributed to members, (available online).

The group was not comfortable to form a view and needed time to read and think about the notes circulated.

## 9 What's next / Next Step

BOPRC staff will circulate revised mitigation bundles, following discussions with industry groups, and taking on board community group feedback.

Workshop 8: May/June 18:

- mitigation costs
- draft objectives
- modelling results - baseline and development
- flow setting results

The Group noted:

- Whakatāne District Council is consulting on the long Term Plan.

A member suggested using a "Facebook Group" to provide a safe zone for members to ask each other questions. If it is something the Group wants to do, council can help with setting it up.

## 10 Noted actions

1. Council to set up closed Facebook page for discussions.
2. Staff to contact forestry sector regarding forestry mitigation measures.
3. Revised mitigation bundles are to be circulated to group members before commencing modelling work.
4. The metering thresholds proposed by the *Region-wide Water Quantity Plan Change 9* are to be circulated. See these hyperlinks to flowcharts related to metering requirements for [irrigation system](#) and [dairy farm](#)<sup>1</sup>.
5. Provide voice-overs for the presentation on Environmental Flow and Groundwater level setting through the group portal online.
6. Provide information on the groundwater levels / recharge rate with high rainfall events.

Recharge rates increase with higher rainfall. There is not a linear relationship between changes in rainfall and recharge rates. An increase in rainfall does not result in the same percent increase in groundwater recharge. Monitoring bores in the Rangitāiki area show that groundwater level change from summer to winter. These changes are in response to recharge from rainfall and groundwater abstraction. A monitoring bore in the Mid-Upper Rangitāiki tapping the unconfined ignimbrite aquifer shows groundwater levels in the last two years recovered to approximately 5.0 metres higher than in the previous year, when records began. A monitoring bore in the Lower Rangitāiki tapping the sand/ignimbrite/gravel aquifer shows groundwater levels in the last 5 years recovered to the same level. However, that level is approximately 0.5 to 2.0 metres lower than in the preceding 22 years, when records began. Groundwater is managed on the basis of average annual recharge, rather than recharge in a particular year.

7. Provide a brief update on tuna habitat protection project in the Rangitāiki catchment.
8. Provide information (if any) on likely impacts of contaminants on river/stream buffer native plants<sup>2</sup>.

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<sup>1</sup> The links to the metering requirement flowchart factsheets are:

<https://www.boprc.govt.nz/media/570960/20161018-plan-change-9-do-i-need-a-meter-or-resource-consent-for-dairy-farming.pdf> and <https://www.boprc.govt.nz/media/570959/20161101-do-i-need-a-meter-or-resource-consent-for-my-irrigation-system.pdf>

## 11 Feedback to Councillors

Members provided the following feedback to Council decision-makers.

- The cost of improved water management should be equitable between rural and urban communities.
- Fish habitat is declining and getting worse – this is a big issue for some/many members and there is concern about whether the management options make a difference.
- A “business as usual” option will not be good enough. Group members are looking for change.

Workshop ended at 2:55 pm with a karakia.

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<sup>2</sup> Most common water pollutant (bacteria, nutrients and sediments) considered here do not cause harm in using native plant rongoa. The plants will be safe for human consumption after washing them with clean water or cooking.

Human safety could be of a concern when consuming roadside plants, plants of geothermal areas and areas that keeping /treating industrial run-off (eg. treated timber), where the plants may contain a build-up of harmful chemicals and heavy metals.



## Appendix One – Workshop activity feedback on Mitigation Bundle Options

These tables reflect community group feedback. Further amendments may be made by Council after discussions with industry organisations.

### Dairy pasture sector (Discussed draft to be consulted with industry)

M0- Current Practice	M1 Mitigation One (less impact and lower cost)	M2- Mitigation Two	M3- Mitigation Three (Greatest impact and greatest cost)	Outliners
One wire fence alongside stream	<b>Effluent fertiliser use, it GPS</b>	<b>Increase effluent application area</b>	<b>Stock excluded from wider range of waterways</b>	Once-a-day or twice-a-day milking
	<b>Timing of effluent application</b>	<b>Rotation in seasonal stocking rate</b>	<b>Adoption of new irrigation (and effluent) technology (include infrastructure)</b>	Protection of indigenous plants. Principle
	<b>Full stock exclusion... (large)</b> <ul style="list-style-type: none"> <li>• Audit required</li> <li>• Vegetation</li> </ul>	<b>Full stock exclusion from medium waterbodies</b>	<b>Creation of new wetlands</b>	Be aware of planting for erosion purpose
Paddock rotation plus break feeding	Effluent irrigation	reduce fertiliser N use	Denitrification beds	
	Grow maize on effluent blocks	controlled grazing with stand-off pads	Reducing stocking rates, increase efficiency, eg seasonal reduction grass growth matched with stocking	
	Laneway run-off div.	Complete protection of gully heads	Partial afforestation of easier contoured land	
	Relocation of Troughs	Detention bunds	Nil/restricted grazing with barns	
	Suggest 'all' waterways	Lined effluent storage	Alum applied to pasture	
	Any work on cut & carry zones?			
Effluent use of N application	Adoption of low N leaching forages			
	Reduced tillage practices			

	Seasonal stocking rate reduction	Cut & Carry Zone 'Managed' instead of 'planted' buffer	Should distance fit contour and soil type?	
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## Non-dairy pasture sector

M0- Current Practice (most properties already doing this mitigation)	M1 Mitigation One (less impact and lower cost)	M2- Mitigation Two	M3- Mitigation Three (Greatest impact and greatest cost)	Outliners
	<p><b>Full stock exclude <u>all</u> water body plus 3m 'managed' buffer</b></p> <p><b>Efficient fertiliser use</b></p> <p><b>Adoption of low N leaching forages</b></p> <p><b>Stock class management within landscape</b></p> <ul style="list-style-type: none"> <li>• Dairy cows shipped out for winter</li> <li>• Contour dependent</li> </ul> <p>Appropriate gate track &amp; race placement (contour dependent)</p> <p>Some not tillage practices</p> <p>Maintain optimal Olsen P</p> <p>Targeted space planting of poles</p> <p>Relocation of troughs</p>	<p><b>Full stock exclusion (mdm streams) plus 3m buffer</b></p> <p><b>Stock reticulation away from surface waterbodies</b></p> <p><b>Reduction in seasonal stocking rate</b></p> <p>Convert LUC 6 – 8 pasture to forest /mānuka</p> <p>Detention bunds</p> <p>Complete protection of gully heads</p> <p>Whole paddock space planting of poles</p> <p>Management of gorse</p> <p>Changing stock ratios to reflect N leaching potential</p>	<p><b>Stock excluded from and 'managed' buffer... wide range...</b></p> <p><b>Creation of new wetlands</b></p> <p><b>Reducing stocking rates</b></p> <p>Alum applied to pasture</p> <p>Buffer around excluded water (7m) <u>or</u>... Difficult</p>	<p>Managed grass length</p>

Due to time constraints in the workshop, the feedback on sectors (including horticulture, forestry and arable) was collected separately.