

Science Panel feedback notes: 28 July 2016

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| Purpose: | Science Panel feedback to local farmers and Takaka FLAG | |
| Date: | Thursday, 28 July 2016 | |
| Time: | 7pm - 9m | |
| Venue: | Takaka Fire Station | |
| Present: | <p>Science Panel: Roger Young (RY – Cawthron)</p> <p>Local farmers/irrigators group: Corrigan Sowman (CS - chair for meeting) Sue Brown (SB) Farmers from the Takaka catchment</p> <p>Other: Rochelle Selby-Neal (RSN -Independent Facilitator for Takaka FLAG) Andrew Fenemor (AF – Landcare Research)</p> | <p>FLAG members: Graham Ball (GB) Mirka Langford (MLa) Mike Newman (MN) Mik Symmons (MS) Piers MacLaren (PM) Hika (Matt) Rountree (HR) Andrew Yuill (AY) Margie Little (MLi) Tony Reilly (TR) Martine Bouillir (MB)</p> <p>TDC Staff: Joseph Thomas (JT - Resource Scientist - Water & Special Projects) Steve Markham (SM – Environmental Policy Manager) Lisa McGlinchey (LM – Coordinator Natural Resources Policy)</p> |
| Apologies: | FLAG: Neil Murray (NM), Kirsty Joynt (KJ), Greg Anderson (GA), TDC: Trevor James (TJ- Resource Scientist – Water Quality & Aquatic Ecology) | |
| Notes taken by: | Lisa McGlinchey (supplemented by other attendees) | |
| Definitions and Abbreviations | FLAG = Freshwater and Land Advisory Group FoGB = Friends of Golden Bay l/s = litres per second NPS-FM 2014 = National Policy Statement for Freshwater Management 2014 TRMP = Tasman Resource Management Plan (the Plan) TWS = Te Waikoropupu Springs WCO = Water Conservation Order application for Te Waikoropupu Springs and recharge area | |
| <i>Note: records of discussion points have been grouped into similar topics and are not necessarily in the order discussed at the meeting. Notes in square brackets [] have been added post meeting for clarity.</i> | | |
| ATTENDEES PLEASE NOTE: If you have any questions then please contact Lisa McGlinchey by email: lisa@tasman.govt.nz or by phone ddi 03 543 8409. | | |

Purpose of Meeting

- For local farmers and Takaka FLAG to receive feedback on the Science Panel findings on the ecosystem health of Te Waikoropupu Springs.
- Steve Markham from TDC to provide update on FLAG process.

Meeting chaired by Corrigan Sowman who welcomed everyone and introduced Dr Roger Young who has led the Science Panel.

Background on Science Panel

- How to get consensus opinion on where water quality sits in this catchment. Different perspectives and different scientists involved.
- Funding through DairyNZ to bring panel of water quality scientists from around country – headed by Roger Young.

Science Panel members:

- Roger Young, Cawthron – Freshwater Ecology
- Joseph Thomas, TDC - Takaka water resources
- John Stark, Stark Environmental– invertebrate monitoring
- Magali Moreau, GNS– national groundwater network
- Graham Fenwick, NIWA– groundwater biodiversity/ecology
- Andrew Fenemor, Landcare Research – N modelling
- Graham McBride, NIWA – trend analyses, water quality
- Chris Hickey, NIWA– toxicology, water quality

Roger Young (Cawthron) presented the Science Panel findings [refer presentation online [here](#)].

- Science Panel workshoped in March 2016 – data gathered and discussed since then:
 - Discussed wide range of information and who held what information.
 - Accessing data, assessing quality of data and analysing trends.
 - Comparison with guidelines (refer data source slide)

Discussion/questions

JT: In the natural state/status quo – what is the significance of ammoniacal nitrogen?

RY: Key nitrate species are nitrate N, nitrite and ammonia. Ammonia can be problematic downstream of wastewater discharges – it can be toxic. None found in springs.

HR: If an invasive plant has been known in springs since 2005 why hasn't it been removed?

RY: I'm not sure

MLi: DOC did some weed management (for duckweed)

CS: Nitrate is quite a low level compared to other catchments around the country – how easy is it to measure at low levels? and what is the noise [sample error] around these measurements?

RY: Upper Takaka has ten times less nitrate than in the Springs. The chemical sensitivity of the test is good compared to what is seen in the Springs - however there are different methods for testing. The FoGB sampling have been looking at the differences between Hills lab (10-12%) and the GNS lab (reports 4% for two standard deviations). [For the same sample] there is about a 12% difference between the two labs. The true value is likely to be within $\pm 12\%$.

AY: Fish Creek Spring is slightly lower in nitrate than the main spring. TDC sampling of Fish Creek Springs goes to Hills lab, while the main spring samples go to GNS - so there has been a difference reported [that is due to lab sampling methods]. FoGB have been sampling with TDC to compare results and are intending to send constructed samples [with known nitrate concentrations] to the labs to test accuracy.

You have the natural nitrogen cycle – how do you differentiate between natural and other resources?

RY: We can use nitrogen isotopes (heavy and light nitrogen) – can use this to determine fertiliser vs animals. However, at the concentrations seen in the Springs – the error around this technique means it can't be used. This brings us back to looking at nitrogen budgets – the area of land and likely nitrate leaching etc. There are lots of unknowns in this, including natural levels and levels coming from the rocks themselves.

JT: We asked GNS about this – at Springs concentrations it is difficult. At above 2-3mg/l they can use the isotope technique, but below this they can't.

AY: We estimated 0.01-0.02 ppm is coming from the upper catchments - 0.4ppm in deep aquifer from 120ton/yr from the karst uplands – we have no idea where this is coming from. I have been discussing the boundary of the karst uplands area with TDC staff. It is likely that 70% of nitrate in the Springs is coming from the karst uplands – we don't want to be blaming catchment dairy farmers if it is coming from the karst uplands.

SB: The focus is on 10 year trends in nitrate – are climate patterns playing a role?

RY: There has been a national water quality network since 1989 – increases in nitrate are common – at a few sites the water is getting clearer. The first 15 years period of water clarity change has been attributed to the La Nino – El Nino pattern. It is difficult to tie back these trends to what is causing them – it could be long term climatic changes or changes in land use – I would just be guessing. Just because it has been increasing over the longer period – doesn't mean it will keep increasing.

Does testing technology have anything to do with it?

RY: No testing has been pretty consistent.

So from the results elsewhere – is there enough data to show no change in natural bush catchments?

RY: The ones with increases are agricultural catchments - there is no change in bush catchments.

JT: The best groundwater concentrations are often around 1mg/L – the Springs are a factor lower than this. Our rivers have relatively low nutrient levels.

How will the Science Panel report be distributed?

RY: I will get the report complete in the next few weeks – I'm happy for the slides to be made available and circulated.

MB: This can be put on the council website.

Action: LM to put presentation on Council website [done]

Steve Markham gave the attendees an overview of the FLAG process.

Corrigan asked Steve to comment on the timelines and the process involved for FLAG. Steve also covered Water Conservation Order and planning process.

Key points:

- **Planning Process**
 - This is a policy planning process under the Resource Management Act (RMA)

- There are instruments for catchment management under the RMA
 - Catchment management is the interaction of water in, on, or under land
 - Tasman has one large resource management plan [the Tasman Resource Management Plan or TRMP] – it includes water takes, and water use, and discharges
 - FLAG is working towards a plan change which will introduce new aspects to water take and use and discharge sections of the TMRP
 - Plans directly or indirectly regulate water takes and use and discharges of any kind of contaminant into land or water. Either permitting a take/discharge or requiring a consented take/discharge. Some are straight forward to get
 - The policy framework is indirect regulation of takes/discharges – policy is as important as rules – they work together as a package
 - Plans can regulate all future takes and discharges
 - Because TDC is a unitary authority – we also have regional powers to retrospectively regulate existing takes and discharges
 - The Plan making process is an interesting process
 - Consents are driven by the package of policy and rules
 - Plan rules can set conditions for the next consent – including conditions on its operation and its review
- **Water Conservation Orders (WCO)**
 - WCOs are a national instrument – national process driven by the Ministry for the Environment. There is a tribunal with the decision made by the minister
 - WCOs can deal with the next take and impose restrictions on flow regimes in rivers, they can directly regulate opportunity for future takes and regulate discharges through specifying quality standards in the water body which can restrict what can be discharged
 - They are not retrospective [*meaning they cannot affect existing consented activities*]
 - Council Plans must not be inconsistent with WCOs. WCOs cannot be inconsistent with exiting plans
 - WCO existed before there were land/water plans – they predate the RMA.
- **FLAG process**
 - Council has run with a community process with the FLAG delegated the task of enquiring into and understanding the management issues, and selecting the instruments and kinds of management in Takaka catchment for all its component parts that are defensible
 - We still need to evaluate the effectiveness of proposed methods compared to other methods
 - It has been a learning process, and interesting and challenging
 - Staff have advised Council that FLAG will not meet an earlier target for Sept 2016. The work is larger and complex, and is an ongoing learning process for FLAG and the advisory team. Council now expecting to have a workshop briefing in Sept on where FLAG has landed on collective decision making at that point in time
 - Staff and FLAG have been attempting to speed up the work to meet the previous deadline, but now have more time to complete work at a more measured pace
 - Seeking to get as far as we can by the end of the year. New Council in office will need a briefing (likely Dec 2016 or Feb 2017) from staff team on process. Gives FLAG a good opportunity to finish its thinking
 - The agreement between Council and FLAG is that the FLAG has the hard job to understand and arrive at a collective agreement of the best methods to manage allocation and directly or indirectly manage discharges (indirectly would be via land use)
 - Once we have a preferred package of management measures – we will advance this to a draft plan change and take this to Council in early 2017 with a recommendation to Council that they approve it. The choice Council have is to notify [for RMA Schedule 1 plan

change process] or to circulated it as a draft plan change in the local community for feedback

- TDC also have an obligation to liaise in a good faith partnership with local iwi – we have yet to decide on a date for hui to discuss these issues
- Still a work in process at the moment – gone a long way and have a few issues to firm up on. We are a good way through the FLAG process – from my opinion it has been a useful process.
- These processes require investment in time and people commitment and the learning required in this process.

There were no questions from attendees on Steve Markham's discussion.

CS: It is good to get an understanding of the scale of FLAG's task and good to get understanding of the Science Panel information – I'm interested to see where it goes.

<meeting ended>