Workshop notes

Water quantity workshop
Tuesday 14 October 2014

Attendees

Glenn Mortimer, Whangarei harbour catchment group
Adrian Tonks, Cook Costello, Whangarei harbour catchment group
Kier Volkerling, consultant
Roger Ludbrook, Federated Farmers
Richard Gardner, Federated Farmers
Louise Wilson, Federated Farmers
Denis Anderson, Federated Farmers
Anne Warner, Farmers of New Zealand
Garry Hooker, Farmers of New Zealand
George Kruger, Fonterra
Karl Rossiter, Fonterra
Murray Owen, sheep and beef farmer
John Blackwell, sheep and beef farmer
Laurie Copland, beef farmer
David Lourie, Forest and Bird
Margaret Hicks, Forest and Bird
Marianna Young, Forest and Bird
Nathan Burkepile, Fish and Game
Corina Jordan, Fish and Game
Rudi Hoetjes, Fish and Game
Nathan Burkepile, Fish and Game
James Witham, Department of Conservation
Alice Hosted, Department of Conservation
Georgina Neumann, Opus
Chris Frost, Opus, Mangere catchment group, horticulturalist
Paul Reese, Irrigation NZ
Bill Hunter, Kerikeri Irrigation Co Ltd
Chris Keenan, Horticulture NZ
Dave Routley, NZIPIM, AIC
Bob Cathcart, AgFirst
Jo Armstrong, Ministry for the Environment
Dean Botica, Hawthorn Geddes
Tyneal Windelborn, Te Runanga o Te Rarawa
Blair Peter, Te Runanga o Te Rarawa
Hone Tiatoa, Lake Omapere Trustee
Millan Ruka, Environment River Patrol, Poroti Springs
Ursula Buckingham, Hancock Forest Management (NZ) Ltd
Christ Richmond, Living Waters Bay of Islands

Regional Council:
Cr Joe Carr
Ben Lee
Robyn Broadhurst
Ben Tait
James Griffin
Justin Murfitt
Michael Day
Susie Osbaldiston
Emily Walker
Pride Mangeya
Natalie Blandford
Geoff Heaps
James Young

Session One – Issues with water quantity in Northland

Scribe notes on general discussion through presentation:

- In the Maunganui catchment, most takes are from dams – how do you factor those in? NRC has a number of projects underway to address this at the moment, including a project NIWA is currently working on.
- The proposed National Environmental Standard on Ecological Flows and Water Levels (NES) includes proposed methodology for calculating ecological flows, and found that dams were a significant impediment.
- If we applied the NES default approach, dark blue catchments wouldn't meet these defaults.
- What are unauthorised water takes based on? NRC's calculations on dairy shed wash down based on 70Lt/cow/day (wouldn't meet the maximum permitted volume of 10m3/day in many cases, i.e. heard sizes over 143 cows).
- Intergovernmental Panel on Climate Change – is this information Northland specific? No it is more NZ in general. Refinement for Northland has been done in house.
- NRC is being over optimistic about effects from climate change; we need to look at the worse case scenario as this is the state we are in.
- Surprised that drainage of wetlands is still occurring? Yes our ecologist is still finding examples. Wetlands not dominated by native species can be drained as of right.
- How is the 5% figure for wetlands remaining calculated? Several different reports, in-house.
- Do native species (in relation to wetlands) include eels? Yes.
- 1400 catchments identified? Can they be aggregated? Session 2 – Freshwater Management Units (FMU).
- RPS appeals, will it have any influence? Unlikely for this topic.
- Nutrient management, are farmers going to be encouraged to construct wetlands? Session 3.

- Water storage, large vs small water storage solutions. Session 3.
- Ruakaka drains were cleared during floods, could we gate drains so water could be stored in soil?
- Off stream/on stream dams. There are differences in effects. Better to have off stream dams? Session 3.

Discussion questions:

1. **Do you agree with the significant issues we have identified? Why or why not?**
2. **Do you think we have overlooked any significant issues and if so what and what?**

- General agreement with the 3 major issues.
- First 2 key issues ok but could be more detailed. Third seems a bit specific.
- Why do we manage quantity - what are the objectives for water quantity; not just ecology – e.g. security of supply, efficient use. How do we do this in Northland?
- Need to have confidence that any additional policy response to these issues does not have unacceptable effect on economy.
- Put the focus on effects of the issues e.g. Ecology, economy - greater resolution.
- Tangata whenua rights to water need to be acknowledged.
- Enabling community well being through water use, including tangata whenua economic development. Importance of sound water management frameworks, this includes consent duration. Collaborative arrangements are working well in solving water management issues. Capacity, infrastructure, and collaboration result in positive outcomes.

Allocation

- Want to be more confident we know what the flows are in a water body before making the call.
- Lack of gauging stations, consents not using to the limit, how much is it being used. We often do not know.
- Surface/groundwater interaction needs to be addressed.
- What's the definition of a stream? Three definitions in plans.
- Highly allocated catchments will need a lot of work to find out true water use. I.e. Information gaps, to ensure they are actually highly allocation.
- Security of supply a key issue. Fonterra addressing this through advice and support, efficiency.
- Understanding base data lacking (i.e. modelled scenarios as opposed to actual measurement – stock intensity, actual water use on Northland farms etc). So need metering to resolve this – also enforcement of water quantity rules. Information gaps.
- Rules on takes unclear – i.e. is it per property or per take? Can one property have multiple takes and are these aggregated? (e.g. 10 permitted takes = 100m3). Acts as a disincentive to obtain consent.

- Protection and management of aquifers particularly with predictions of less water – managed in unison with water quality.
- Timing of takes critical – encourage staggering takes.
- Discussed lower annual rainfall being an issue. Sharing water, smarter options.
- Water efficiency is a big issue.
- Horticulture driven to efficiency by virtue of requiring consents.
- Inequity between horticulture and dairy farms regarding takes – many farms unauthorised.
- Is modern dairying factory farming? Farming systems changing increases intensity and greater water use.

Climate change

- We are going to get extremes, becoming more frequent. Sea level rise 3mm at present. Impact on flood plains, Ruawhai. Do you need to think about more sea defences? Increasing sediment.
- Dams seen as part of climate change adaptation.
- A specific climate change study for irrigation (Bill).
- Climate change is in worst case scenario, plan needs to account for this.

Wetlands

- Do wetlands include flood plains that have been drained? Definitions need to be revised.
- Created wetlands excluded from definition of indigenous wetlands? What about drained wetlands and then reconstructed?
- Wetlands appear to be coming back within forestry plantations – need some clear definitions and interpretations on what is a wetland.
- Defining the boundaries of wetlands – definitions. (Possibly look at HBRC)
- Do they include fish predominated species? No, it's focussed on flora. 3 different definitions of a wetland. Most indigenous wetlands are effectively significant wetlands.
- Paying rates on land, penalised from creating wetland, less flexible use of land because of rules. No incentives.
- Hikurangi swamp, wetland can't be 'maintained'. Can't alter it because rules are inflexible.
- Wetlands rules, sending out the wrong message. Need to incentivise.
- Water quality, could be a driver to create wetlands from this perspective. Can't separate the quality from quantity issue. Creating wetlands vs damming for storage. Wetland releases water like a sponge.
- Wetland denitrification benefit. Has a public good.
- Retention/maintenance of most significant wetlands.

Water storage

- Dam effects quality, sediment traps.
- Do we need more dams? Yes in the west coast where it is drier.
- Silt traps at bottom of gullies effective but can build up. Need to be cleaned.

- Broadwood contractor cleaned 150 dams in that area.
- Restrictions lifted on building dams. Building act more onerous than RMA in this regard.
- Rules for small intermittently flowing streams.
- Dams on blue lines. Need to set permitted rules appropriately, not catch too much or send out the wrong message.
- Water storage, including dams and groundwater, and water efficient use of water seen as additional big issue.
- Off stream storage encouraged.
- Ruataniwha – half of growers wanted dam, other half didn't. Spent a lot of money on large scale storage research. Might be better to focus on smaller scale storage, but effects need to be better understood. Ruataniwha lesson: make it a 15 year project, rather than 5 year process. About to look at water storage options in Pukekohe.

Land use change

- Land use change is a significant issue – including the stage of the cycle, such as where forestry is in the 30 year cycle.
- Predicted land use changes in Northland as this will effect water quantity i.e. intensification of farming etc is this taken into consideration.
- Afforestation is an issue.
- Aquifer recharge in some areas.

Session Two – Giving effect to the National Policy Statement for Freshwater Management 2014

Scribe notes on general discussion through presentation:

- Have we gone and looked at values? No just indicative.
- Catchment group geographically defined, other values not? Catchment groups are in areas where there is pressure i.e. water quality or high allocation.
- Consumptive use, water for humans and animals? Anything drawn out of a water body and not returned. Includes consented, permitted and unauthorised takes.
- What's the relationship with water quality? Need to think about community values, not just environmental characteristics.
- What is a unit? A water body, multiple water bodies or any part of a water body.
- What is a tight narrative objective? A more focussed outcome statement.
- Environmental outcomes to incorporate all 4 purpose of RMA: social, economic, environmental and cultural.
- Managing for ecosystem health, could you limit stock water? If it’s affecting ecology, yes we would have to. If yes, would compensation be made available? Capping is an option, may also claw back if there is good evidence.
- Are numeric values used in National Objective Framework? Peryphyton is.
- NPS-FM makes it clear there is an ecological bottom line in policy B1.

- How do we gauge the minimum? Minimum is whatever is required to sustain ecological bottom line as determined by council/collaborative groups etc.
- Can anything above the minimum be extracted? No, you have to set an allocation limit to allow natural variability to occur. Can have variable limits though, for example between seasons.
- Security of supply is an important value as well as maintaining a minimum flow. Have done some research on this e.g. what effect would a value of no more than 5% loss long fin eel have.
- Are we counting takes for maintenance flows for dams? No it's included in our allocation limit. Could enable higher consumptive use during winter.
- Harvesting flow when flow is 10% above the median flow in a river.
- Minimum flow, NPS-FM sets this? No it does not set a numeric bottom line.
- Difference between old regime and new regime is it is now a red light i.e. you can't go below a minimum flow/level.
- Would a dam be required to have an overflow in dry periods to maintain ecological health in streams?
- Poroti Stream, could always be at bottom due to current over allocation. Plan does not currently have an allocation limit and no absolute minimum flows.
- Mean annual low flow (MALF), used as a convenient measure as a known hydrological measure.
- MALF based on long term flow recordings or Niwa models where we don't have this record.
- How do we achieve aquifer limits? Doing this work at the moment, mapped key aquifers but need to understand all other aquifers. They are not high demand and therefore have been lower priority.
- Will regulations apply outside of main aquifers, for instance to all bores? Work being done at the moment.
- Need to have strong policy in places – a key part in establishing limits, who will have priority, what the review process will be, transfer of water permits. (Sweet water aquifer recently gone through a consent process).
- What about coastal aquifers, people excavating down to them for example for sand mining.
- Water banking, purchasing water rights without using the full allocation. Then selling them on at a profit. Should be dealt with at a consenting level, reasonable/justifiable use.

Discussion questions:

1. **Do you agree with our approach to establishing water quantity management units? (pgs 12 – 16 of summary doc)**
2. **Do you think if we manage for ecosystem health as a minimum we will provide for other uses and values or should we identify additional?**
3. **Do you agree with our proposed approach to setting limits?**

Setting freshwater quantity management units (FMU)

- FMU for quantity will need to consider FMU for quality.
- Can you set management limits as a percentage of mean annual flow?

- Can you trade across FMU? E.g. water exported out of an FMU that limits use in the donor catchment and also no incentive for users to manage efficiently (as their land use / activity is not subject to limit).
- Conflict/consistency with Auckland approach? FMU on boundary may cause some issues?
- Would like to see extra clarity over what a management unit looks like. Concerns about the level of detail/scale each management unit will be managed at i.e. will an outstanding sub-catchment be specifically managed or only larger whole catchments?
- How do catchment groups fit into this process? One solution would be to have management plans specific to geographic areas.
- The hierarchy (outstanding, high values etc) makes sense and seems a good starting point.
- We always need to prioritise so this approach seems sensible.
- Management units particularly important around aquifers.
- Has a values assessment been undertaken when setting FMU?
- Approaches to managing disconnected between collaborative catchment management and physical/climate/ecologically based management units.
- Level of communication needed at regional and local level. Strategy needed to spatially divide Northland into units for the purposes of catchment planning.
- Regional water management group could be created to provide assistance to catchment groups and recommendations on regional wide water management policy e.g. Gisborne, Bay of Plenty, Auckland, ECan.
- Repeating collaborative catchment group processes at small scale may mean unnecessary costs and repetition.

Providing for values

- Ecosystem is evolving, can't see it at a fixed point in time.
- Droughts will limit what we can do e.g. dairying in some areas. Will push innovation. Most innovative person will be able to buy allocation from less efficient users of water.
- Ecosystem health, useful except for outstanding water values. Need to account for natural character values e.g. a changing flow could lead to other species, flora taking hold.
- Need to define what is meant by ‘healthy ecosystem’.
- Complexity of plan depends where you are. Straightforward permitted rules in some catchments.
- Some tension between other discretionary in stream values & allocation for extractive use.
- Economic values will come into play and create downward pressure on other discretionary flows.
- Minimum ecological flows will protect most in stream values (e.g. natural character, recreation etc).
- Should identify additional values i.e. as listed in the NPS-FM. Ecological health can be set at different levels so other values need to be considered on top of this.

- Some think that managing for ecosystem health alone is sufficient and others think we need to identify additional values.
- We need to define our ecological values. Use QMCI.
- In over allocated catchments put greater effort into identifying values, better community knowledge using collaborative approach.
- Natural character and cultural are national values and should be considered as a bottom line for all.
- Higher level objectives need to include natural character and cultural values as national values, and water use is reasonable and necessary. Where it meets those two tests it is used efficiently.
- Appropriateness of NES questioned. Every relevant value should be identified and discussed with respect to water quality objectives and limits. Example given of mana atua.

Setting limits

- Water quality will need to be considered in min flows.
- Will need to allow for natural fluctuations/high flows.
- There should be controls against water banking worked in with addressing tradable rights. There needs to be a process identified by council to provide certainty. If trading outside catchment then require consent to address concerns over efficient use.
- Grossly over allocated, cap at existing and this doesn't actually solve the over allocation, allows those inefficient users to become efficient and then potentially on sell with tradable water.
- Existing takes shouldn't be included in the cap where they are not reasonable, necessary and not being used efficiently.
- Does approaching minimum low flows require a rule or plan change? What happens if a stream is reclassified?
- Stock water takes: what happens when we approach minimum flows? Do we stop these takes? What is the point of a minimum flow if we are allowing these takes regardless? What about stock drinking from unfenced rivers? These takes are allowed by RMA provided no adverse effect on environment – our plans have tried to clarify what this means.
- Minimum flow is based on historical analysis, doesn't normally apply to rivers that are not permanently flowing.
- Dams: does water need to be released to avoid breaching min flows? Depends where it is built e.g. if it's in an intermittent stream. Need to understand cumulative effects of off-stream storage. Dams have a flood prevention function, not just about allocation.
- Extreme doubts, water shortage direction, mechanisms available to district council. They are a last resort not a management tool. Priority of use for low flow conditions needs to be a factor in setting limits.
- Priority of allocation – who gets what? Fair allocation. For permitted takes also.
- Would we look at argue dam in the Ruawhai area? There is an irrigation fund available from central government. Focus is on resilience. Kaihu River was looked at as a possibility in the 1970s.

- Min flow and allocation limit will vary depending on where you are on the river, how would you account for this? Set a total allocation at bottom of catchment based on gauge, would need to undertake location assessment at time of consent. Methodology required for this.
- We need numerical, measurable flows/limits tuned to values. Water quality also needs to be considered.
- Accept special rules/limits where water is over-allocated.
- Could be an impediment to Northlands economic wellbeing. Need to be really careful we don't shut down Northland.
- NPS-FM cap current flows but will have an impact on future generations' decisions on what to do with land.
- Government policy could go full circle and back to focussing on priority rivers and accept some degradation.
- Defaults in green catchments have some risk – is default sufficient to ensure ecology protected? Or that water body is managed to limit? What triggers re-assessment of default/how is it monitored/measured?
- Don't think defaults are appropriate long term.
- Needs to be catchment specific data.
- Defining activity status will be crucial.
- Unauthorised takes need to be addressed.
- When council looks to set limits we must take into account existing levels of investment in the catchment.
- What forum are we going to use to set the bottom lines?
- Efficient use of water needs to be included in plans. Should determine who uses the water. Demands are going to be less when there is more water around.
- Management frameworks should not tie in existing land uses or management practices and should ensure that resource allocation is equitable and can respond to market forces.

Session Three - Options for improving water quantity management

Scribe notes on general discussion through presentation:

- Section 14(3) RMA provides a right unless there are adverse effects. No rules regulating this.
- There should be guidelines for reasonable use. Can't be a rule unless there is a demonstrable adverse effect. A minimum flow and allocation limit are demonstrable of an adverse effect however.
- Discussion on metering takes less than 5lt/sec. This is less than envisaged by NES metering regulations, burdensome for smaller users to require metering of these takes. Issues around cumulative use, especially of smaller/low flow streams where small takes can have a big effect. Could use non-electronic metering at lower level of cost rather than the approach in the NES? Point also made that if council is going to require metering on takes less than 5lt/sec then it should only be in catchments with high allocation – don't need metering (and associated cost) where there isn't a problem.

- If there is an obvious benefit then dairy farmers/horticulture would be more supportive of water metering, e.g. leak detection in a system.
- Dams, altering threshold up or down? Could depend on sensitivity of catchment. NIWA work on dams available next year.
- If scheduling of wetlands, need to approach landowner as early as possible.
- Are you going to regulate for public access to private wetlands? Even public wetlands are quite fragile. Not for private wetlands, potential boardwalk construction etc where appropriate for public access.
- Horticultural NZ would be happy to partner with the regional council for best practice approach to water storage.

Discussion questions:

1. **Have we identified all of the issues with managing activities that affect water quantity? Have we missed any?**
2. **Do you agree with our proposed options or do you have any alternative options?**
3. **Do you think the significant issues discussed in Session 1 have been addressed adequately?**
4. **Based on your experiences with the RWSP, what are the main administrative issues with the current policies and rules (if not already addressed above) you have?**

Issues with managing activities

- Land use change can impact water quantity – often trade offs in land use as positive and negative effects that may need to be assessed across catchments e.g. hill country change to forestry – benefit in sediment reduction but less water in rivers.
- Managing land use (e.g. using wetlands, offsetting) vs leave landowners room to innovate to meet limits.
- Intervention on land use change probably only warranted in certain cases – e.g. dune lakes as they can be particularly affected by land use (forestry).
- Flow management – landowners tend focus on shedding water as quickly as possible and this creates intense flows which gouge river beds. Potential to attenuate flows on hills (e.g. forestry) and use floodplains/flats to slow peaks and limit max flows/scouring. Lower volumes engineered drains e.g. alternative productivity systems on floodplains such as manuka flood tolerant used for high grade honey production.
- Could we provide for more intensification in exchange for environmental mitigation, net benefits?
- Compliance costs drive intensification and environmental footprint e.g. increased use of nitrogen to increase production to cover increased compliance cost, need to take this into account.
- How do you integrate costs into plan? How are the costs of regulation to be shared?
- Not enough help for farmers. No productive benefit from this regulation.
- People getting caught between requirement to fence stock from water, have to therefore reticulate and getting charged for each take.

- Need to define the boundaries of wetlands in wet season. Enable protection of vegetation around wetlands. Recognise compatible/incompatible land uses and wetland resilience.
- Case law that all wetlands are rare and significant, especially in Northland.
- Drainage districts need reviewing.
- Current dam rules are inefficient and difficult to enforce – need to review the levels of permitted activity to determine whether they're efficient. Are they achieving what they were meant to do? Need a monitoring regime for dams.
- Existing use rights and animal numbers with respect to permitted activity volumes, and accuracy of stock drinking volumes questioned (70L/cow?).
- Changing permitted activity volumes could impact on existing uses.
- Greater understanding of the river/resource to understand water available.
- Rules need to reflect what is reasonable in terms of resource i.e. low flow = small amount of water available. Permitted conversion to a use that needed more water still needs to fall within what the resource can cope with.

Proposed management approaches

- Management options seem ok. More incentives and remove disincentives for wetland creation and retain flexibility for utility value to be maximised.
- Over-protective of wetlands? Need to allow for wetland management. Bay of Plenty plan regarding wetlands allows flexible management/use.
- Focus metering/data requirements and controls where water quantity is a priority (high allocation areas). Relax elsewhere. Level of info required & level of control should relate to pressure/risk to water resource.
- Metering: practicalities, need for info for compliance and understanding volumes being taken for allocation purposes, data format. Valuable management tool. Benefits (leak detection). Costs of electronic metering, compliance monitoring and consents can be very expensive. Where the meter is positioned and on all takes within a farm? Horizons share the cost of telemetry so more people do it and so you have real time data online.
- Culvert sizing based on catchment size supported by some – avoids multiple small culverts to avoid need for consent, which cause issues. But may not need to be regulated – guidance instead, also need to provide for fish passage. Provide for multi barrel culverts?
- Water management options: tune to issues/risk rather than one size fits all precautionary approach.
- A lot of options are good but depends on who pays?
- Need to legitimise unauthorised water takes. Need a pragmatic mechanism to permit reasonable use of water, wash down water for dairying.
- Defining reasonable use could cause problems.
- Define what is a reasonable amount to keep alive i.e. a particular tree crop
- Treaty of waiting settlements in Northland need to be considered and future potential of land.
- Need tighter regulation around dam design to ensure ecological flows (hydro variability) and greater encouragement to promote off stream storage rather than in stream.
- Support for common catchment expiry dates and review dates.

- Consent duration significant issue because of need for investment security.
- Water sharing groups can work if set up properly, and may be a good option for the highly allocated catchments.
- Adaptability of plans to new information e.g. allocation volumes, climate change, new hydrological data.
- Horticulture would like to see a level playing field in terms of rules, monitoring and compliance. No single use should be able to continue at the expense of all other uses.
- Huge investment in long term horticulture – having your tap turned off is a huge loss.
- Could look at diverting high flows into aquifers for storage (May be limited in Northland).
- Why notify council – what is the aim and what will be done with the information? Choose thresholds such as catchment, dam or culvert size.
- Work along side growers/ farmers and show them what the options are.
- Don't want the plan to limit the opportunities on volcanic soils.

Addressing the significant issues

- Climate change – relaxing/enabling dams, encouraging creation/utility of wetlands good.
- Doubts over climate change predictions. If the climate does not change will the rules not be applicable?
- Flexibility needed to adapt to climate change, too many rules can limit this.
- Dams may become a necessity, not just an optional tool.
- Impact of dams, could cause intensification issues. Likely to arise from irrigation from stored water rather than stock water use.

Administrative issues

- Current rules an impediment to restoration – consenting roadblock for wetlands/diversions to restore water bodies and gravel harvesting.
- Non-regulation methods, change takes time and needs to be incentivised (environment fund). Fencing needs to be subsidised more by taxpayer.
- Need a consistent approach to enforcement.
- Need more proactive monitoring – with so many permitted rules it's difficult to ensure compliance. Also need to take into consideration cost recovery for the monitoring, what the costs will be to stakeholders. What technologies are there available to enable more efficient monitoring measures.
- Permitted activity rules should not contain subjectivity, discretion, or require third party review. A good permitted activity rule has numerical standards which ensure significant adverse effects do not occur.
- Some rules are confusing and complex – not necessarily a clear hierarchy of rules. Clear and certain rules are important.