



GREY FMU

Freshwater Management Unit

Grey Māwhera FMU Group

March 2019 Meeting

Meeting Agenda

- ▶ Recap on process so far - standing item
- ▶ Update on outstanding action items
- ▶ Water Quality continued
- ▶ Next steps

NPSFM Process Flow Chart

VALUES

The things that people think are important about the water

Help you identify

ATTRIBUTES

The characteristics of the water that need to be managed to provide for each value

Help you choose

FRESHWATER OBJECTIVES

The levels your community want each attribute to reach in the future

Help you set

LIMITS

The maximum amount of resource use that will enable the freshwater objective to be met

Help you determine

METHODS

The measures you put in place to ensure the limits and the freshwater objectives are met

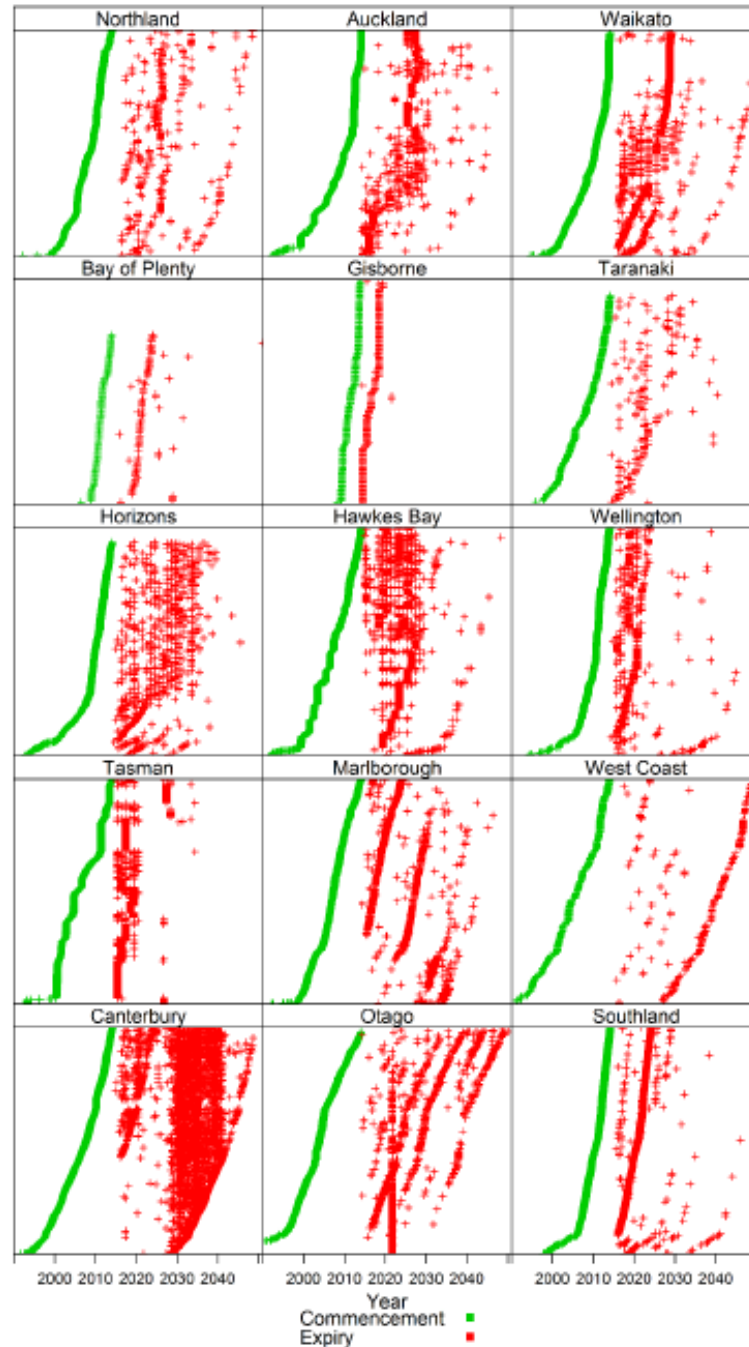
Help you provide for

Help you achieve

Help you meet

Update on action items

Present timeframes for water permits region by region



Update on action items

Table 5-1: Summaries of non-hydro-power consents by region, use and source. Other comprises uses labelled as Combined/Mixed, Frost Protection, Not Specified, Other or Stock.

Category	Count	Maximum instantaneous rate (l s ⁻¹)				Maximum annual volume (m ³)			
		Missing	Median	Mean	Sum	Missing	Median	Mean	Sum
National	15,921	975	9.1	43.5	649,700	966	61,600	660,300	9,874,000,000
Region									
Northland	350	0	1.7	6.4	2,252	0	7,000	54,370	19,030,000
Auckland	936	18	3.0	10.2	9,395	9	10,000	101,100	93,730,000
Waikato	990	200	5.1	119.0	94,030	200	40,950	1,531,000	1,210,000,000
Bay of Plenty	86	0	15.2	27.7	2,383	0	57,060	138,500	11,910,000
Gisborne	145	0	0.0	0.0	7	0	390	1,471	213,300
Taranaki	166	0	19.5	38.7	6,419	0	259,200	1,076,000	178,700,000
Horizons	905	0	2.3	43.5	39,380	0	51,100	1,216,000	1,101,000,000
Hawke's Bay	2,094	143	17.5	22.5	43,870	143	68,120	178,200	347,600,000
Wellington	542	31	15.0	53.9	27,520	31	145,600	1,236,000	631,700,000
Tasman	981	0	3.1	7.9	7,730	0	31,250	92,660	90,900,000
Marlborough	1,361	15	5.7	25.1	33,800	15	52,560	409,600	551,300,000
West Coast	170	0	5.8	40.5	6,885	0	157,000	1,400,000	238,000,000
Canterbury	4,771	0	24.0	69.8	332,900	0	182,000	873,700	4,168,000,000
Otago	1,482	566	6.9	34.5	31,610	566	219,000	1,088,000	996,700,000
Southland	942	2	1.0	12.3	11,570	2	31,570	250,600	235,600,000
Use									
Drinking	1,337	88	4.2	47.6	59,500	85	55,510	1,079,000	1,350,000,000
Industrial	812	62	5.2	111.2	83,380	61	64,970	1,738,000	1,305,000,000
Irrigation	10,491	352	13.0	40.6	412,100	348	84,500	497,600	5,047,000,000
Other	3,281	473	1.8	33.8	94,760	472	31,200	773,200	2,172,000,000
Source									
Groundwater	10,857	245	7.6	23.0	243,800	237	51,870	241,400	2,564,000,000
Surface Water	5,064	730	15.0	93.7	405,900	729	142,400	1,686,000	7,311,000,000

Water Quantity and NPSFM

- ▶ “Freshwater quantity accounting system” means a system that, for each freshwater management unit, records, aggregates and keeps regularly updated, information on the measured, modelled or estimated:
 - ▶ a) total freshwater take;
 - ▶ b) proportion of freshwater taken by each major category of use; and
 - ▶ c) where limits have been set, proportion of the limit that has been taken

Water Allocation - existing framework

- ▶ The RMA provides for water to be taken for
 - (i) an individual's reasonable domestic needs; or
 - (ii) the reasonable needs of a person's animals for drinking water,—and the taking or use does not, or is not likely to, have an adverse effect on the environment; or
- ▶ the water is required to be taken or used for emergency or training purposes in accordance with of the Fire and Emergency New Zealand Act 2017.
- ▶ Within the existing Land and Water Plan, there are a number of permitted (consent not required, but subject to conditions) rules which allow the taking of water.
- ▶ There are also controlled rules (consent needed and must be given) and restricted discretionary and discretionary rules (consent required).

Activity status and what it means

- ▶ Permitted: No resource consent is required, however there may be conditions such as notify the council. Effects must be less than minor and well understood. Activity in keeping with current environment.
- ▶ Controlled: Resource consent required and must be granted. Conditions of consent can only be in relation to matters of control. Effects must be able to be avoided, remedied or mitigated and well understood. Activity in keeping with current environment.
- ▶ Restricted Discretionary: Resource consent required, and maybe granted or declined. Granting or declining only in relation to matters of which discretion has been restricted, and conditioned as such. Range of potential effects is understood. Activity generally anticipated in existing environment.
- ▶ Discretionary: Resource consent required, and maybe granted or declined. Activity is assessed against all relevant objective and polices. Full assessment as to whether the activity, submit to conditions would be appropriate, effects on environment and suitability of proposed location. The activity is not generally anticipated in the particular environment.
- ▶ Non-complying: Resource consent required. Threshold “gateway” test. Assessed as to whether adverse effects more than minor and whether contrary to objectives and policies in plan. If both breached consent must be refused. If one or none breached then can be considered under broad discretion. Activity not anticipated to occur, effects may be significant, environment may be delicate / vulnerable.
- ▶ Prohibited: Resource consent cannot be granted, or considered - must be returned to applicant. Activities are expected to cause significant adverse effects which cannot be avoided, remedied or mitigated.

Permitted Rules - Surface Water

- ▶ The large rivers (Grey below Clarke River confluence), Ahaura and Taramakau can take up to 50l/s, 1,500,000l per day per landholding (consented and permitted). Conditioned to notified Council, and use a fish screen.
- ▶ The remainder of the rivers can take 25,000l per day, must not affect another lawful flow, council must be notified and fish screen used.
- ▶ Small scale hydro: can take up to 200l/s, up to 25% of instantaneous flow at point of take. Must not affect another lawful flow, council notified and fish screen used.
- ▶ Temporary take: up to 10l/s, 150,000 per day, for no more than 10 days in one month, and for no more than 6 consecutive months. Up to 20% of instantaneous flow at point of take. Must not affect another lawful flow, council notified and fish screen used.

Permitted Rules - Groundwater

- ▶ Up to 2l/s, 50,000l/day. Not within 20m of coastal marine area, not near sewage / effluent outflow. At least 200m from existing bores. No other lawful existing take affected. Council notified.
- ▶ Also rules to allow bore development and slope dewatering.
- ▶ Also rules to allow diversion of water, damming of water, and diversion of natural runoff.

Controlled Rules

- ▶ Community water supply takes from groundwater
- ▶ Hydroelectric generation - for some locations including Arnold River, McKays Creek, Carew Creek (Lake Brunner). Aside from these locations, Hydro is discretionary

Restricted Discretionary Rule, the one we looked at last time

- ▶ The total volume of water allocated from the river is less than 20% of the mean annual low flow (MALF) of the river; 'or' should be 'and'
- ▶ The applicant accepts a minimum flow based on 75% of the mean annual low flow (MALF) of the river.

Restricted Discretionary Rule, groundwater takes

- ▶ A number of factors considered; amount of water, current allocation from aquifer, other lawful takes, effects on connected surface water bodies mean, appropriate minimum water level, effects on quality, means and timing of take, duration, intended use



Outside of these rules, uses, diversions, damming, including geothermal is a discretionary activity. Damming the Ahaura Gorge is Prohibited.

Lake Brunner intervention - case study.



- ▶ Long term monitoring indicating declining lake health
 - Specifically:
 - ▶ **Increasing nutrients** - drives phytoplankton growth, algal bloom risk
 - ▶ **Decreasing clarity** - more phytoplankton = poorer clarity
 - ▶ **Decreasing oxygen on lakebed**, increased chance of phosphorus release
- ▶ Deemed by the Council as being of high value and a high priority for intervention
- ▶ Two farm planning projects - voluntary action - focus on bridges, fencing, improved FDE
- ▶ Science and research: need to reduce farm sources of phosphorus. Best options:
 - ▶ Don't go beyond soil phosphorus holding capacity
 - ▶ Use low solubility P fertilizer in wet environment
 - ▶ Pasture management (pugging, run-off, vertical drainage)
 - ▶ Low application rate of FDE to land
- ▶ Consultation with catchment farmers...
- ▶ then incorporated above options into policy and planning, plus TLI WQ target

Lake Brunner today

Some significant lake trends:

- ▶ Nitrogen 
- ▶ Clarity and phytoplankton (algae) 

Some significant tributary (some of them) trends:

- ▶ Nitrogen and clarity (sediment) 
- ▶ Phosphorus 

- ▶ Lakebed oxygen levels creeping down but OK
- ▶ Below TLI target (just).
- ▶ Hey, lake is still oligotrophic i.e. its trends not state that's of concern

