Takaka FLAG – Update to EPC
Zone by Zone – interim allocation summaries

1 September 2016

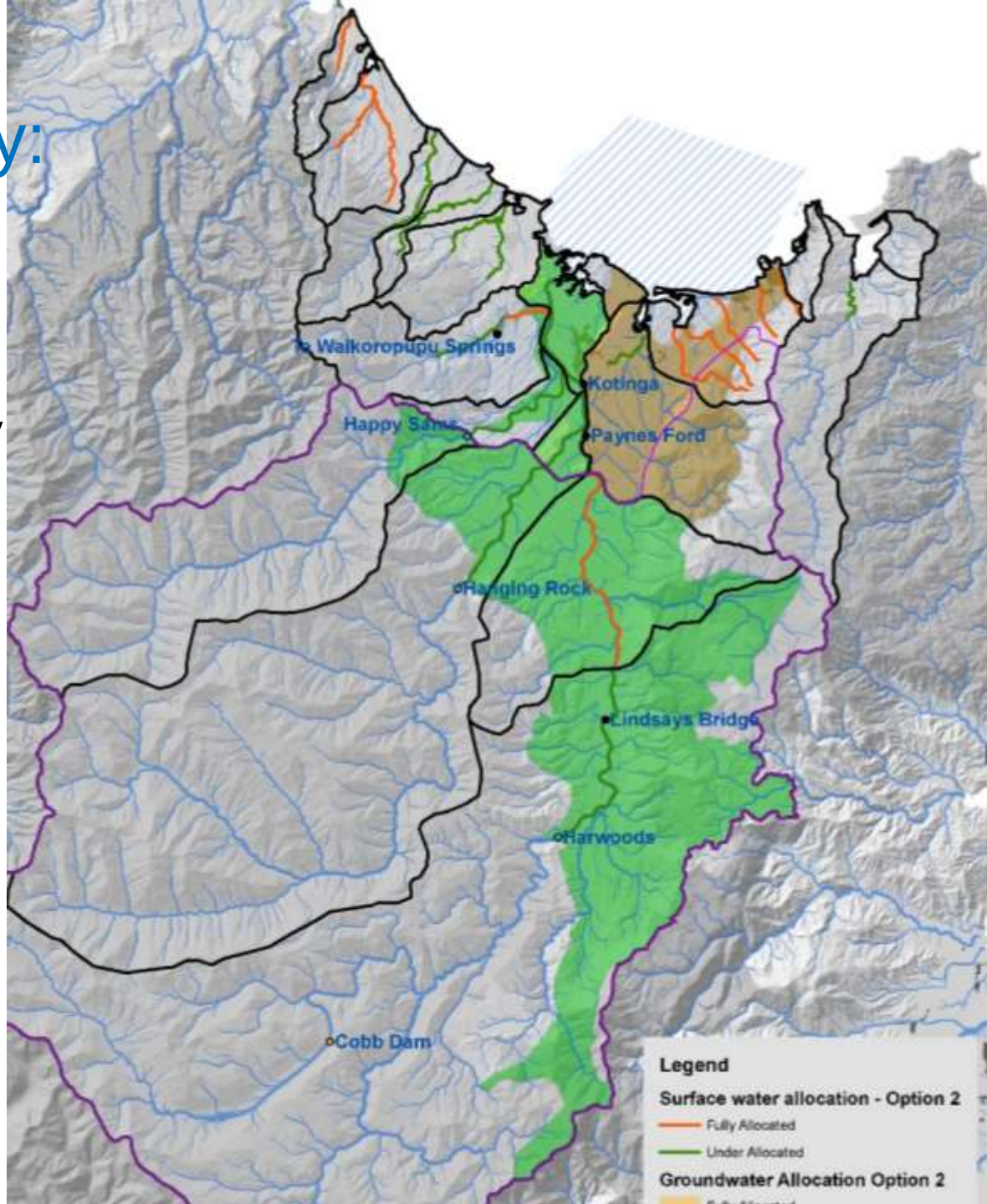
tasman district council

Disclaimer:

- The decisions in this presentation are draft only
- The FLAG will be reviewing all decisions as part of the draft plan change review
- The interim decisions do not represent full FLAG consensus
- Costs and benefits yet to be fully identified or scoped

Interim allocation decisions summary:

- Rivers reaches shown as lines, groundwater (aquifers) as polygons
- Additional water potentially available in green areas
  - subject to physical access
  - irrigable area not shown
- No further water in orange areas
- Tukurua:
  - Potential ‘over-allocation’ relative to recommended regime
  - Community water supply

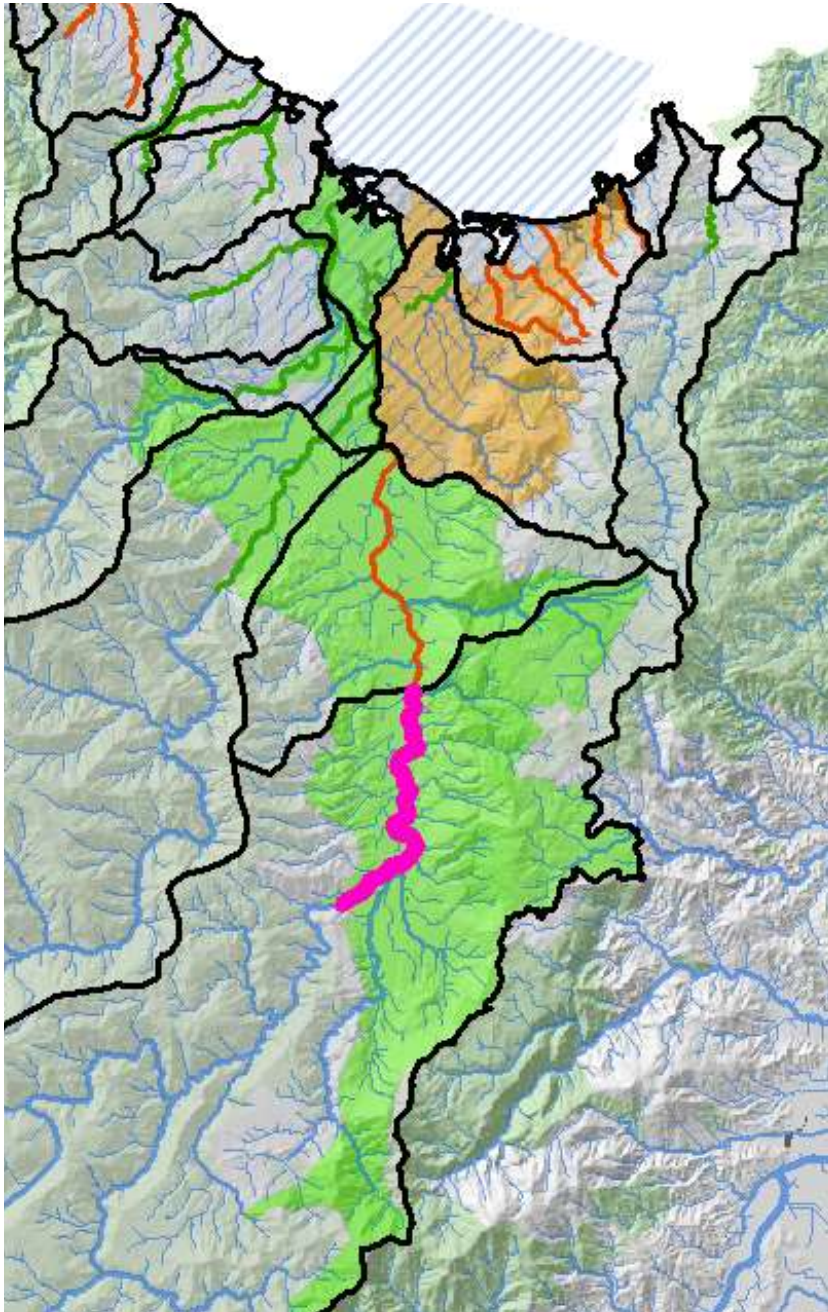


Upper Takaka (mainstem) Management context:

- Surface water only – Takaka mainstem
- 3 existing consents (with cease take)
- Fully allocated as part of informal AMA zone (239 of 500l/s)
- Waiting list for 110l/s

Environmental considerations:

- Concern over drying reach extent
  - Drying is natural – usually below Lindsay's Bridge to above Payne's Ford
  - Cease take provision should avoid extension
- Significant influence on flows from Cobb dam releases for power generation
  - eg 8 cumec increase in one day
  - Percentage of MALF approach relationship to ecological value protection not as clear
- Current water quality generally good
  - In a 'maintain' water quality state
  - Potential risk from land use intensification



Upper Takaka (mainstem) Interim allocation decisions:

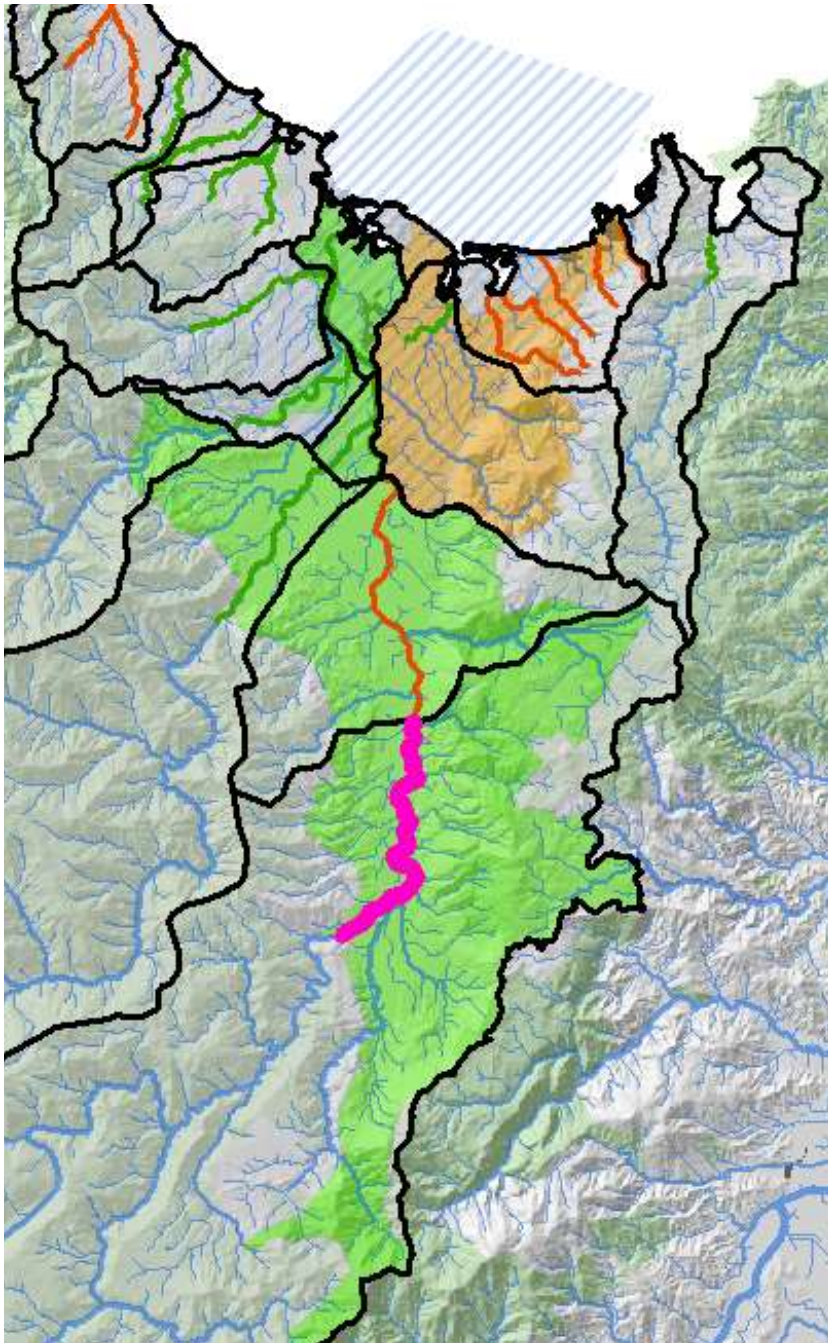
Proposal: 70:15 regime (A+B tiered)

- Allocation up to 15 % of MALF (357 l/s)
- A and B class permits

- Existing consented takes (class A):
  - Grandfathered for at least one renewal period
  - Same allocation (~10%), same cease take trigger
  - No initial change to security – potential to signal change to 'B' class in future
- All new takes (class B)
  - Allocation up to 5% of MALF
  - Cease take for minimum flow of 70% of MALF
  - Lower security than 'A' takes

Key implications:

- Ecologically = status quo. Water take effects on low flows would be as they are currently (60% MALF)
- No change initially for existing 3 consented users
- 118 l/s more water
- 100% of waiting list met, but new takes at a lower security of supply than existing takes
- After waiting list, 8 l/s before at full allocation



Upper Takaka (mainstem) security of supply:

Existing takes (A permits) ~60:10

Upper Takaka Status Quo -1657 l/s

Takaka at Harwoods Data record: 1975 - 2015	Flow (l/s)		Days Below Flow (l/s) Per Hydrological Year (August to July)																
			1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Based on 15min interval instantaneous flows																			
Cease Take 1657 l/s - Minimum Flow		Average:																	
Cease Take - number of days below (total)	1657	7.8	0.0	0.5	0.0	0.0	0.0	0.2	22.0	2.8	18.6	9.2	21.8	7.2	0.0	12.3	4.2	10.6	23.5
Cease Take - # of times > 3 days in a row below 1657 l/s	1657	2 times	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	0
Cease Take - longest consecutive # days below 1657 l/s >3	1657	2 years	0	0	0	0	0	0	0	0	0	0	5 days	0	0	0	0	4.5 days	0
Cease Take - # of times > 5 days in a row below 1657 l/s	1657	1 time	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Cease Take - longest consecutive # days below 1657 l/s >5	1657	1 year	0	0	0	0	0	0	0	0	0	0	5 days	0	0	0	0	0	0
Cease Take - # of times > 1 day in a row below 1657 l/s	1657	29 times	0	0	0	0	0	0	6	0	2	1	4	1	0	4	1	5	5
Cease Take - longest consecutive # days below 1657 l/s	1657	9 years	0	0	0	0	0	0	2 days	0	2 days	1 day	4 days	1 day	0	1 day	1 days	4 days	2 days
Cease Take - # of times > 12 hours in a row below 1657 l/s	1657	111 times	0	1	0	0	0	0	14	2	14	8	16	3	0	11	3	13	26
	1657	11 years																	

% of time flow is above cease take trigger 1657 l/s (based on data from 1975-2016, Nov-Apr inclusive) 95.9%

New takes (B permits) 70:15

Upper Takaka FLAG Trigger - 70% MALF & 15% Allocation

Takaka at Harwoods Data record: 1975 - 2015	Flow (l/s)		Days Below Flow (l/s) Per Hydrological Year (August to July)																
			1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Based on 15min interval instantaneous flows																			
Cease Take 2023 l/s (Min Flow + Allocation)		Average:																	
Cease Take - number of days below (total)	2023	15.8	0.0	12.5	0.0	6.3	10.1	9.6	37.4	11.2	31.5	18.9	33.3	14.6	0.0	18.7	6.2	18.1	40.0
Cease Take - # of times > 3 days in a row below 2023 l/s	2023	6 years	0	1.0	0	0	0.0	0	0.0	0	1.0	1	1.0	0	0	0	0	1	2
Cease Take - longest consecutive # days below 2023 l/s >3	2023	7 times	0	4.5 days	0	0	0.0	0	0	0	4 days	3 days	5 days	0	0	0	0	4.8 days	4 days
Cease Take - # of times > 5 days in a row below 2023 l/s	2023	1 year	0	0	0	0	0	0	0	0	0	0	1.0	0	0	0	0	0	0
Cease Take - longest consecutive # days below 2023 l/s >5	2023	1 time	0	0	0	0	0	0	0	0	0	0	5 days	0	0	0	0	0	0
Cease Take - # of times > 1 day in a row below 2023 l/s	2023	56 times	0	5	0	0	2	1	7	1	5	3	8	3	0	4	2	6	9
Cease Take - longest consecutive # days below 2023 l/s	2023	13 years	0	3 days	0	0	2 days	1 day	2 days	1 day	3 days	2 days	4 days	2 days	0	1 day	1 day	4 days	3 days
Cease Take - # of times > 12 hours in a row below 2023 l/s	2023	264 times	0	16	0	4	10	9	32	11	36	17	27	13	0	19	5	20	45
	2023	14 years																	

% of time flow is above cease take trigger 2023 l/s (based on data from 1975-2016, Nov-Apr inclusive) 92.6%

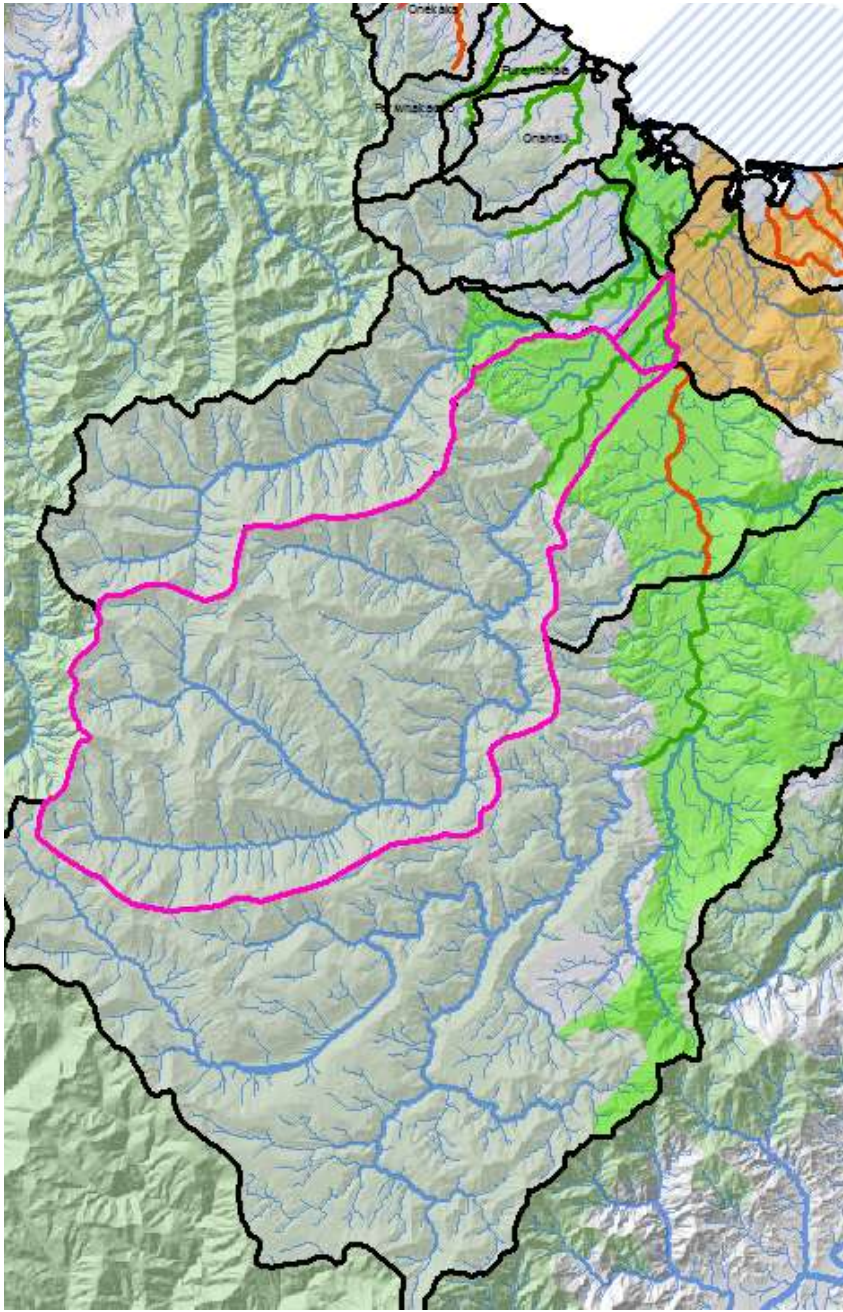
Upper Takaka (mainstem) security of supply:

3 existing takes – no change to security in next consent period (~15yrs)

Regime	Cease Take (CT) Trigger	Minimum flow protected	Security % above CT Nov-April	Security % of years with CT>3days (longest CT)	Security % of years with CT>5days (longest CT)
A+B (70:15)					
Existing Takes A permits 60:10 [status quo]	1657 l/s	1417 l/s (60% of MALF)	95.9%	2 CT in 2 of 17yrs (longest: 5 days)	1 CT in 1 of 17yrs (longest: 5 days)
New takes B permits 70:15(5) (remainder)	2023 l/s	1666 l/s (70% of MALF)	92.6%	7 CT in 6 of 17yrs (longest: 5 days)	1 CT in 1 of 17yrs (longest: 5 days)

Waingaro Zone - Management context:

- Surface and groundwater combined
- Waingaro system and part of lower Takaka River
- 16 existing consents (no cease takes)
- Fully allocated as part of informal AMA zone (111 of 500 l/s)
- Waiting list for 98 l/s



Environmental considerations:

- Concern over quality at swimming holes eg Payne's Ford
  - E.coli, cattle access, algae
- 8% of upper Waingaro flows lost to groundwater - potentially affect Te Waikoropupu Spring flow
- Current water quality generally good
  - In a 'maintain' water quality state
  - Potential risk from land use intensification

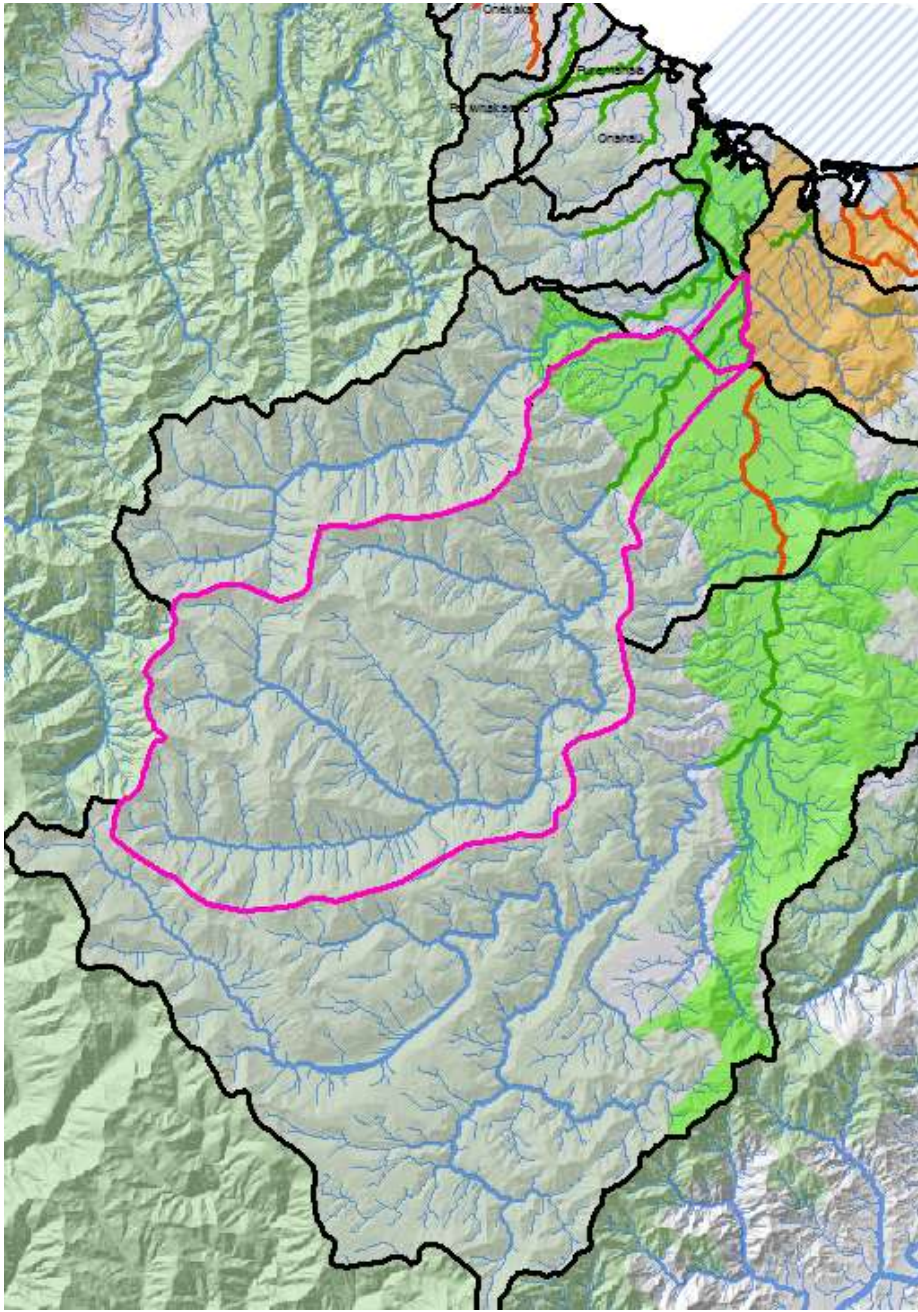
Waingaro Zone - Interim allocation decisions:

Proposal: 80:20 regime

- Existing and new consents:
  - Allocation up to 20 % of MALF (550 l/s) – calculated using MALF at US confluence site
  - Rationing step of a 50% cut at 100% MALF
  - Cease take at 90% MALF for MF of 80%
  - New cease takes at Hanging Rock for existing and new consented takes

Key implications:

- Protection of low flows below 80% of MALF from effects of consented water takes
- 185 l/s more water
- 100% of waiting list met
- New (lower) security of supply level for 14 existing users
- After waiting list, 87 l/s remaining



Waingaro Zone – security of supply

Waingaro - 80% MALF & 20% Allocation

Waingaro at Hanging Rock Data record: 1986 - 2015	Flow (l/s)	AVERAGE /Count	Days Below Flow (l/s) Per Hydrological Year (August to July)															
			1999/2000	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008	2008/2009	2009/ 2010	2010/2011	2011/2012	2012/2013	2013/2014	2014/2015
Lowest 7 Day recorded flow (l/s)			4047	2752	3608	3388	4434	3145	3120	3530	3315	2895	2473	3466	3768	3025	2956	2987
Return Period for lowest 7 day recorded flow (years)			<1	65	<1	2.2	<1	3.5	4.0	1.5	2.5	8.5	> 100	2.0	<1	5.0	6.5	6.0
Based on 15min interval instantaneous flows																		
Rationing Step 1 (50% cut) - number of days below (total)	3418	14.2	0.0	58.7	0.0	4.5	0.0	11.0	23.5	1.2	6.8	20.5	52.4	1.9	0.0	16.8	16.4	14.0
Cease Take - number of days below (total)	3143	8.6	0.0	47.5	0.0	0.0	0.0	3.5	8.0	0.0	1.8	13.5	39.3	0.0	0.0	7.6	9.3	7.1
Cease Take - # of times > 3 days in a row below 3143 l/s	3143	7	0	3	0	0	0	0	1	0	0	2	4	0	0	1	1	1
Cease Take - longest consecutive # days below 3143 l/s >3	3143	13	0	17 days	0	0	0	0	3.5 days	0	0	7 days	18 days	0	0	7 days	9.3 days	7.1 days
Cease Take - # of times > 5 days in a row below 3143 l/s	3143	6	0	3	0	0	0	0	0	0	0	2	4	0	0	1	1	1
Cease Take - longest consecutive # days below 3143 l/s >5	3143	12	0	17 days	0	0	0	0	0	0	0	7 days	18 days	0	0	7 days	9.3 days	7.1 days
Number of days less than minimum flow	2868	3.8	0.0	29.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.4	26.9	0.0	0.0	0.0	1.0	0.0

NOTE: MALF based on upper site Hanging Rock, allocation based on lower site u-s Confluence

14 existing takes – affected by cease take provision

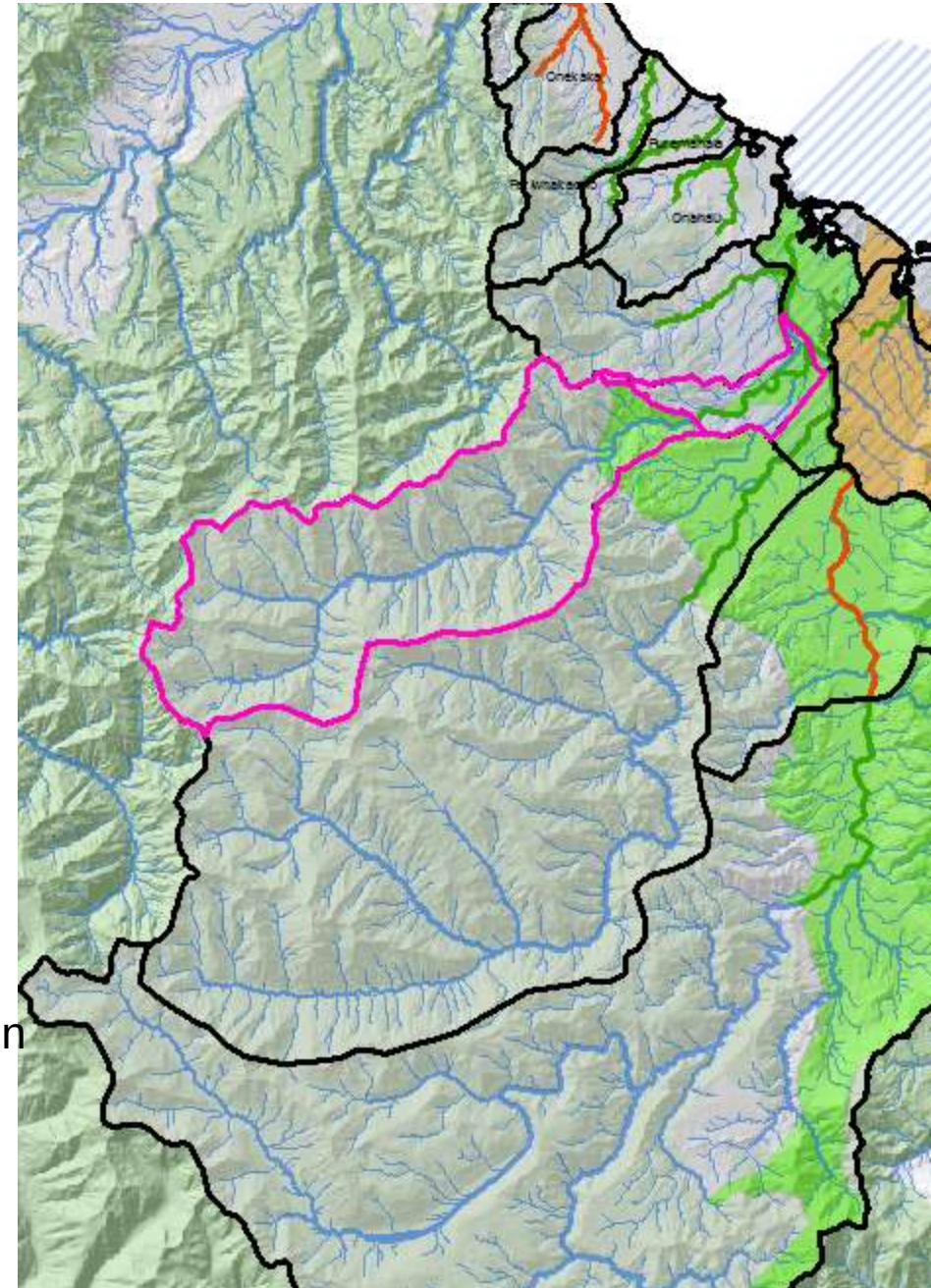
Regime	Rationing/ Cease Take (CT) Trigger	Minimum flow protected	Security % above CT Nov-April	Security % of years with CT>3days (longest CT)	Security % of years with CT>5days (longest CT)
Current	None	None	na	na	na
80:20 rationing step (50% cut)	3418 l/s	na	95.7%	na	na
80:20 Cease Take	3143 l/s	2868 l/s (80% of MALF)	97.6%	13 CT in 7 of 16yrs (longest: 18 days)	12 CT in 6 of 16yrs (longest: 18 days)

Anatoki Zone - Management context:

- Surface and groundwater combined
- Anatoki system and lower One Spec
- 4 existing consents (no cease takes)
- Not counted in AMA Recharge Zone informal allocation
- No waiting list

Environmental considerations:

- Anatoki river flows recharge groundwater, but do not affect flows at Te Waikoropupu Spring
- Current water quality generally good
  - Concern over quality at swimming holes
  - In a ‘maintain’ water quality state
  - Potential risk from land use intensification



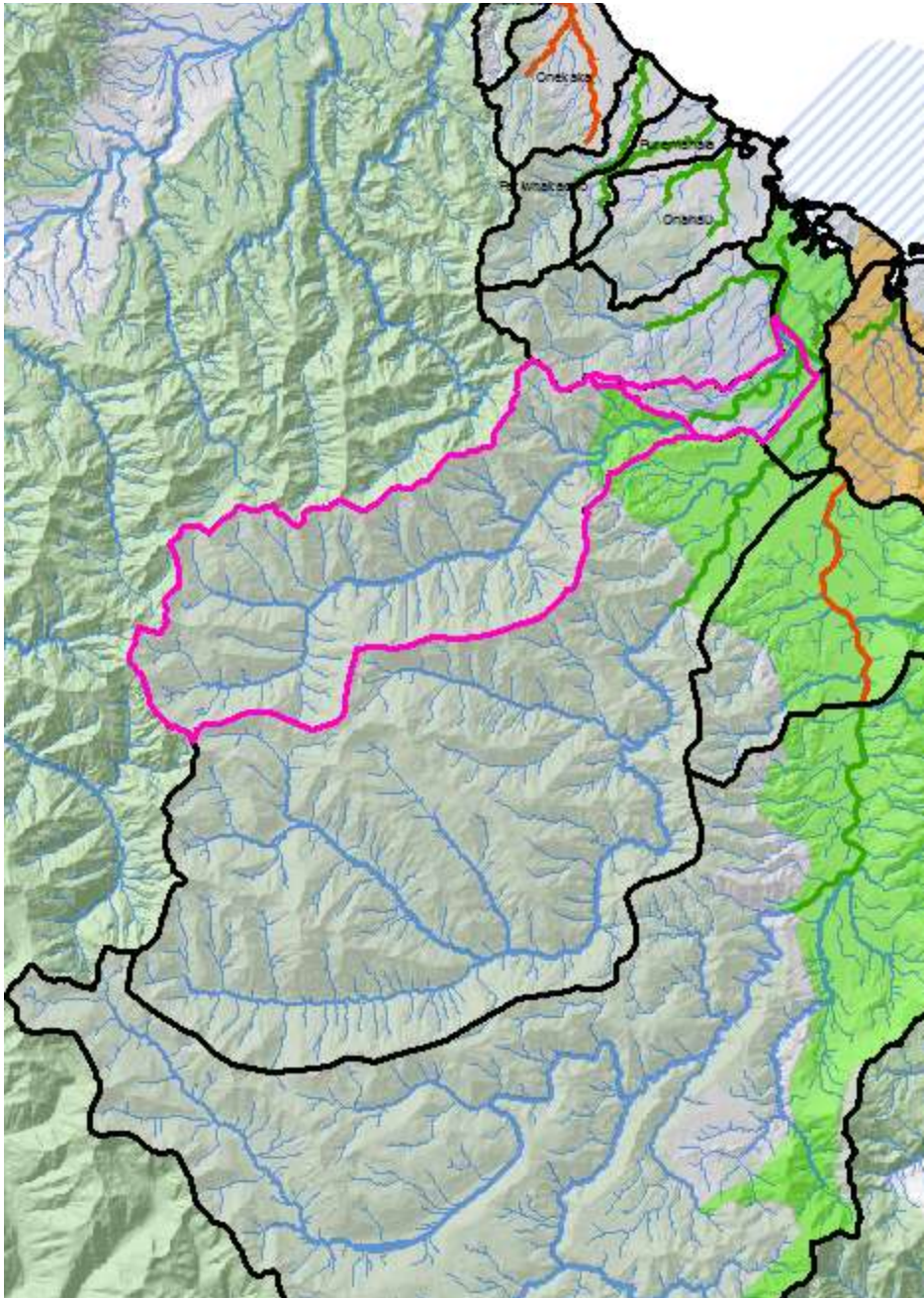
Anatoki Zone -Interim allocation decisions:

Proposal: 90:10 regime

- Existing and new consents:
  - Allocation up to 10 % of MALF (171 l/s) – calculated using MALF at One Spec (lower)
  - Rationing step of a 50% cut at 100% MALF
  - Cease take at 95% MALF for MF of 90%
  - New cease takes at Happy Sam's for existing and new consented takes

Key implications:

- Protection of low flows below 90% of MALF from effects of consented water takes
- 92 l/s more water
- New (lower) security of supply level for 4 existing users



Anatoki Zone – Security of supply

Anatoki - Scenario 1 - FLAG Option - 90% MALF & 10% Allocation

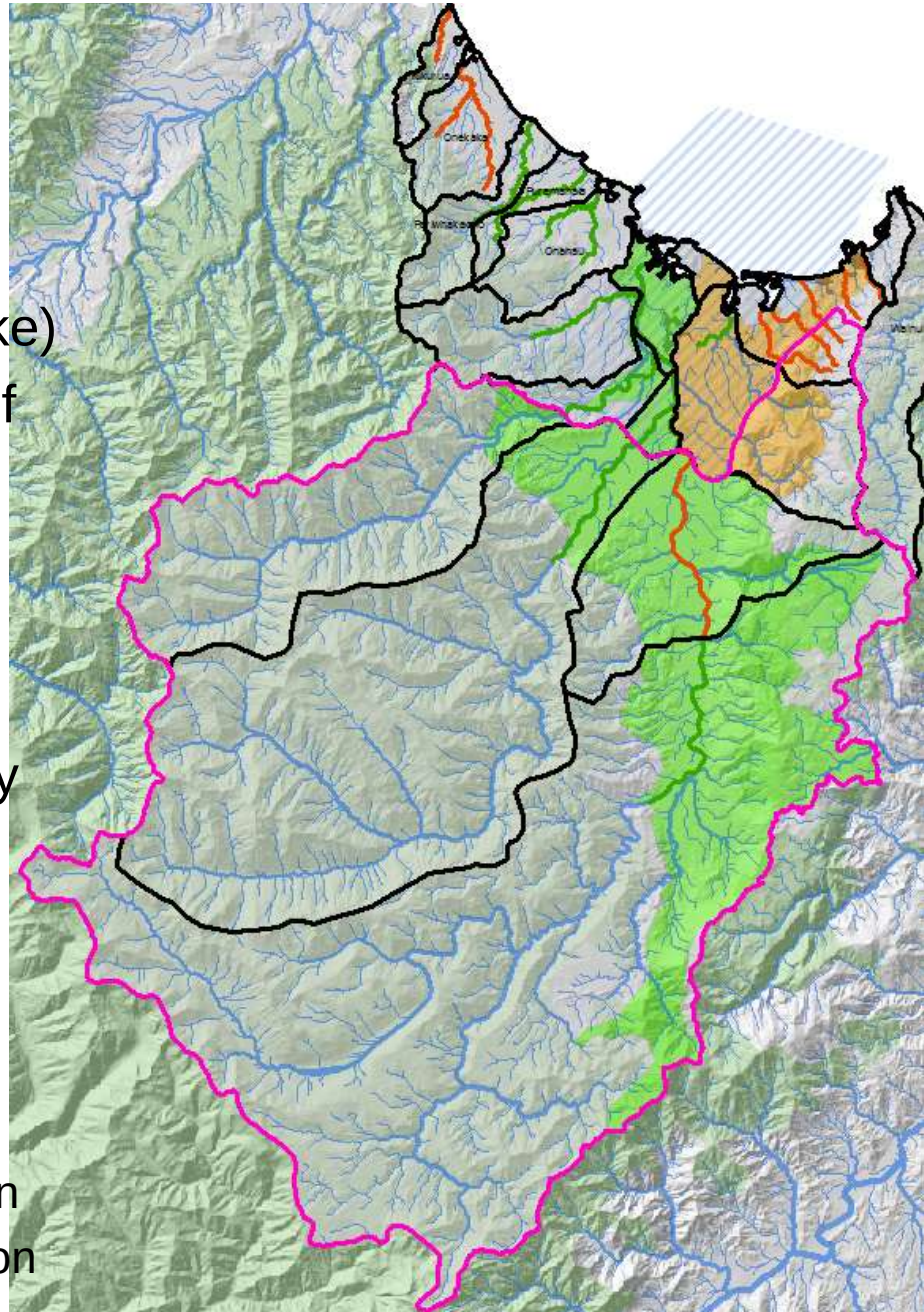
Anatoki at Happy Sams Data record: 1986 - 2015	Flow (l/s)	Average /Count	Days Below Flow (l/s) Per Hydrological Year (August to July)															
			1999/ 2000	2000/ 2001	2001/ 2002	2002/ 2003	2003/ 2004	2004/ 2005	2005/ 2006	2006/ 2007	2007/ 2008	2008/ 2009	2009/ 2010	2010/ 2011	2011/ 2012	2012/ 2013	2013/ 2014	2014/ 2015
Based on 15min interval instantaneous flows																		
Rationing Step 1 (50% cut) - number of days below (total)	2111	16.7	0.0	71.0	0.0	6.0	0.0	13.0	40.0	11.0	10.0	6.0	33.0	14.0	0.0	17.0	14.0	15.0
Cease Take - number of days below (total)	2025	13.1	0.0	66.0	0.0	3.0	0.0	11.0	34.0	5.0	5.0	0.0	27.0	7.0	0.0	15.0	10.0	13.0
Cease Take - # of times > 3 days in a row below 2025 l/s	2025	10	0.0	5.0	0.0	1.0	0.0	2.0	5.0	1.0	1.0	0.0	3.0	0.0	0.0	1.0	1.0	1.0
Cease Take - longest consecutive # days below 2025 l/s >3	2025	21	0.0	21 days	0.0	3 days	0.0	8 days	9 days	3 days	5 days	0.0	16 days	0.0	0.0	15 days	10 days	13 days
Cease Take - # of times > 5 days in a row below 2025 l/s	2025	8	0.0	4.0	0.0	0.0	0.0	1.0	3.0	0.0	1.0	0.0	2.0	0.0	0.0	1.0	1.0	1.0
Cease Take - longest consecutive # days below 2025 l/s >5	2025	14	0.0	21 days	0.0	0.0	0.0	8 days	9 days	0.0	5 days	0.0	16 days	0.0	0.0	15 days	10 days	13 days
Number of days less than minimum flow	1940	9.7	0.0	60.0	0.0	0.0	0.0	9.0	28.0	1.0	3.0	0.0	22.0	3.0	0.0	12.0	8.0	9.0

4 existing takes – affected by cease take provision

Regime	Rationing/ Cease Take (CT) Trigger	Minimum flow protected	Security % above CT Nov-April	Security % of years with CT>3days (longest CT)	Security % of years with CT>5days (longest CT)
Current	None	None	na	na	na
90:10 rationing step (50% cut)	2111 l/s	na	94.7%	na	na
90:10 Cease Take	2026 l/s	1940 l/s (90% of MALF)	95.8%	21 CT in 10 of 16yrs (longest: 21 days)	14 CT in 8 of 16yrs (longest: 21 days)

AMA Recharge Zone - Management context:

- Surface and groundwater combined
- Includes takes from contributing catchments and any takes from the unconfined parts of the AMA
- 21 (32) existing consents (3 cease take)
- Fully allocated informal regime (498 of 500l/s)
- Waiting list total 312 l/s



Environmental considerations:

- Concern over impacts on water quality and flow at Te Waikoropupu Spring
- Concern over water quality, flow and function of Arthur Marble Aquifer
- Current water quality generally good
  - In a ‘maintain’ water quality state
  - Debate whether at thresholds of concern
  - Potential risk from land use intensification

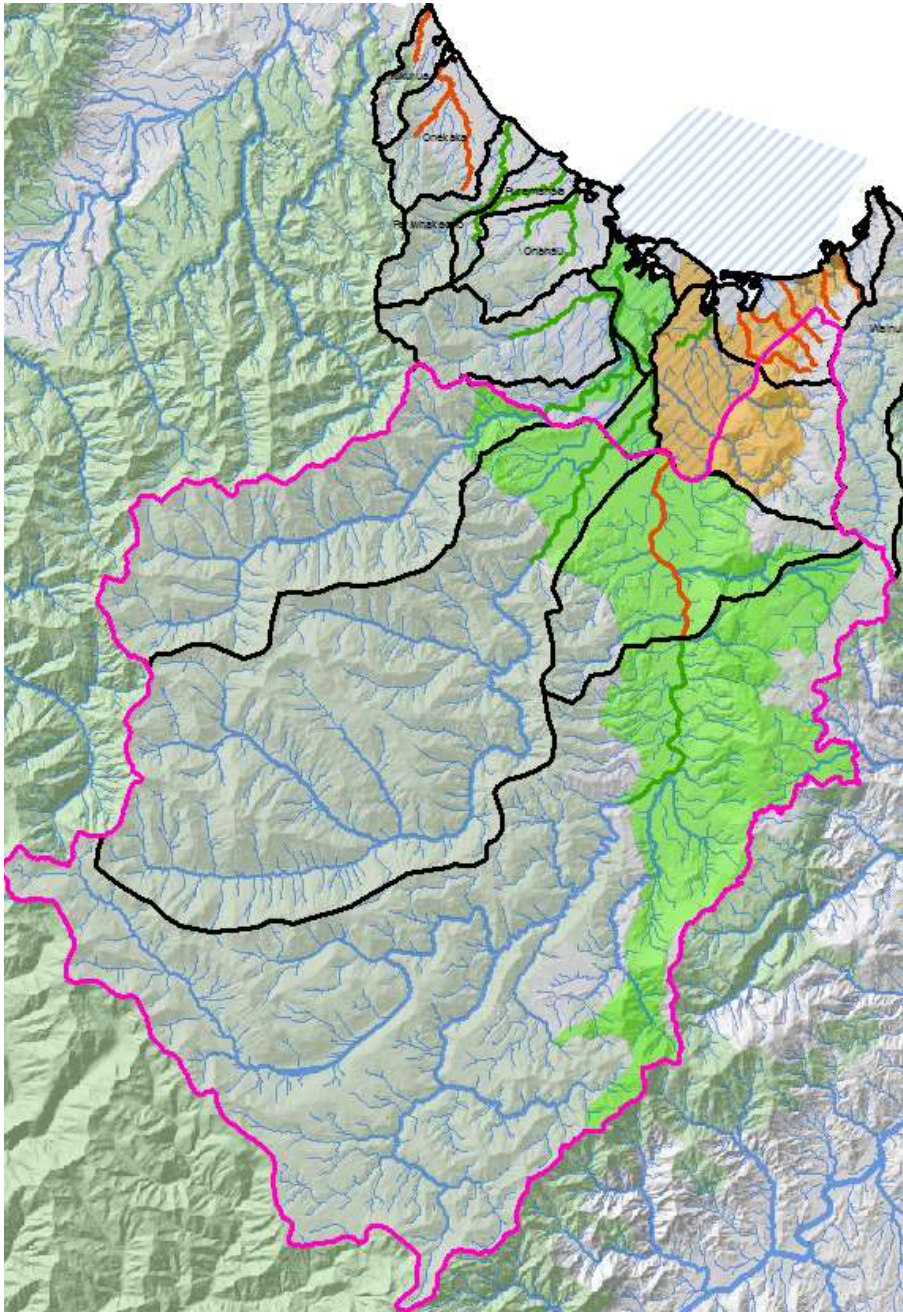
AMA Recharge Zone Interim allocation decisions:

Proposal: 96:10 regime

- Accounting change: 8% (vs 100%) of Waingaro takes
- Surface and groundwater
- Existing and new consents:
  - Allocation up to 10 % of MALF (766 l/s)
  - Cease take at 96% of MALF for MF of 96%
  - Cease take for existing and new consented takes in contributing catchments without their own regime cease takes

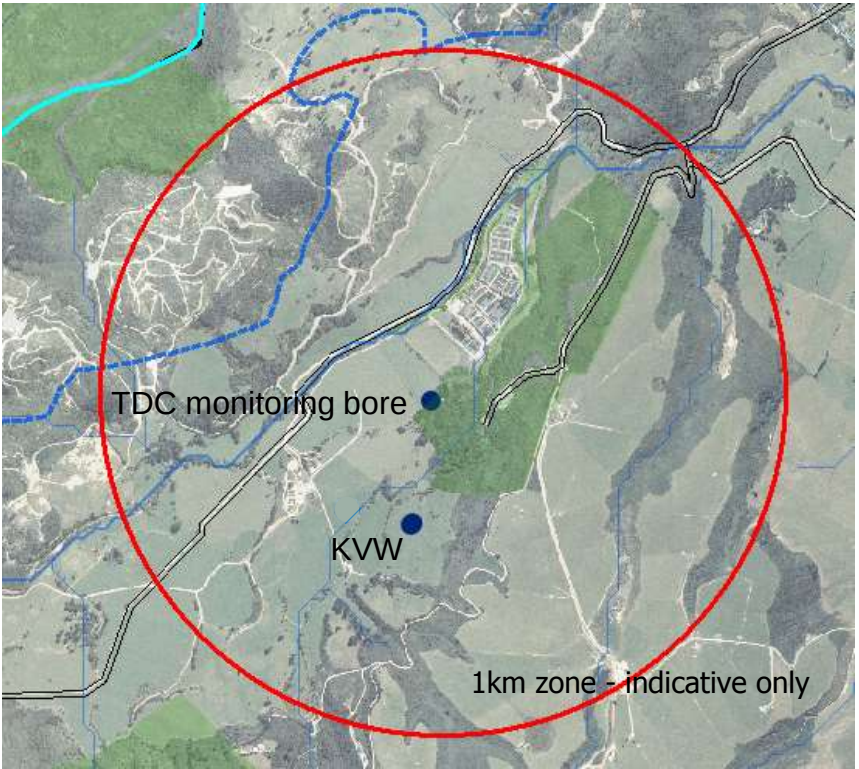
Key implications:

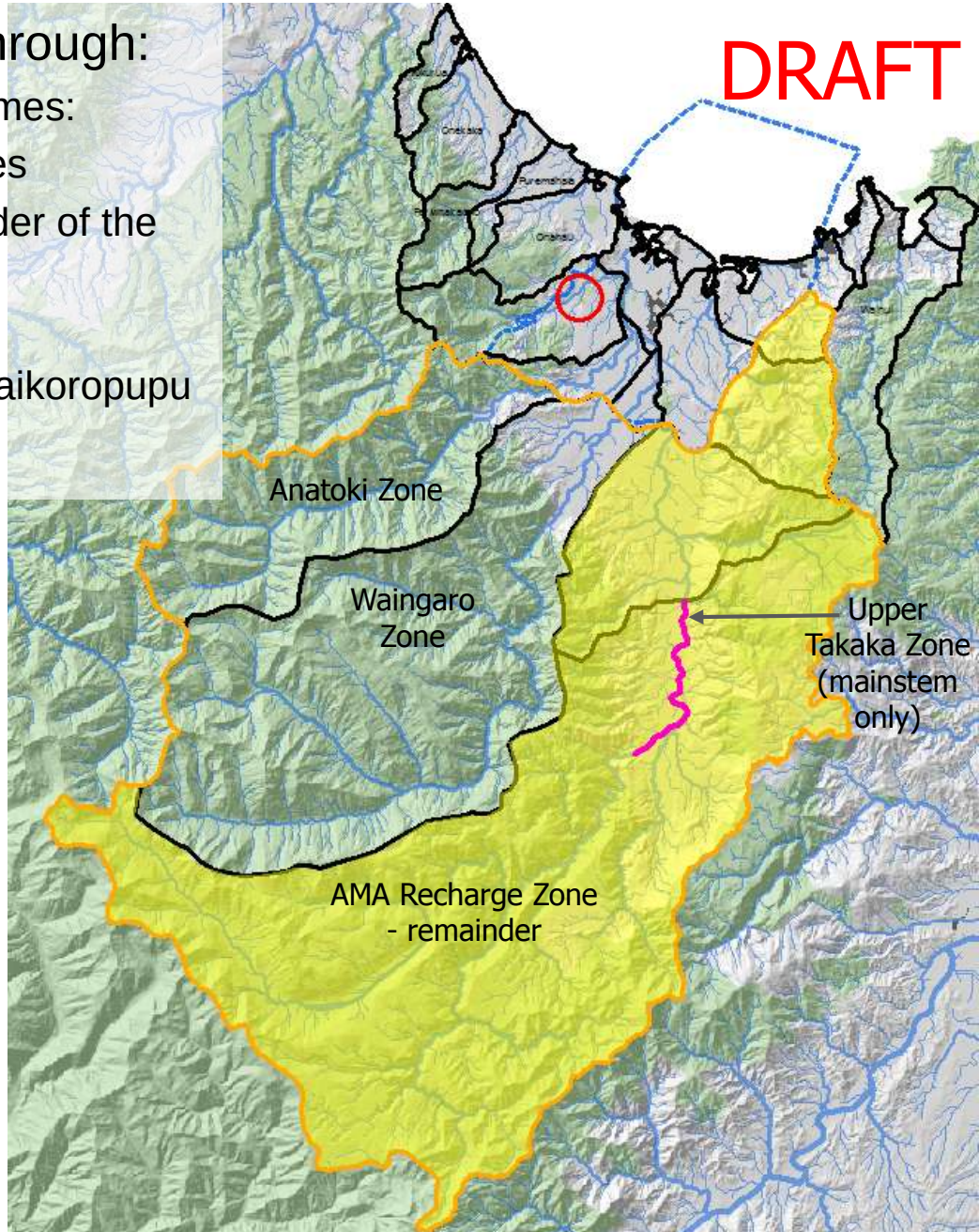
- Protection of low flows below 96% MALF from effects of consented water takes
- 356 l/s more water
- New (lower) security of supply level for 7 existing users subject to cease take
- After contributing regimes accounted, 223 l/s remaining
  - Staff recommending this only come from Unconfined AMA in Middle and Upper Takaka areas (physical access permitting) to avoid effects on surface waters



AMA Recharge Zone - Cease Take application

- Protection of spring/aquifer flow through:
  - Cease takes in contributing catchment regimes:
    - Anatoki, Waingaro, Upper Takaka Zones
  - Cease take (measured at TWS) for remainder of the AMA recharge area (ie yellow in map)
  - Potential 1km exclusion zone around Te Waikoropupu - no new bores/takes from Confined AMA





AMA Recharge Zone – security of supply

96:10 - AMA Recharge at TWS

Te Waikoropupu Springs

GW 6013 Data - 1999 to 2016	Flow (l/s)		Days Below Flow (l/s) Per Hydrological Year (August to July)															
			1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Based on 15min interval instantaneous flows																			
Cease Take 7350 l/s (Level: 14820 mm)		Average:																	
Cease Take - number of days below (total)	7350	7.7	0.0	20.0	0.0	0.0	2.5	1.0	58.0	0.0	0.0	0.0	28.5	0.0	0.0	0.0	4.5	2.5	14.0
Cease Take - # of times > 3 days in a row below 7350 l/s	7350	4 years	0	2.0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	1.0
Cease Take - longest consecutive # days below 7350 l/s	7350	7 times	0	10.5 days	0	0	0	0	30 days	0	0	0	18.5 days	0	0	0	0	0	14 days
Cease Take - # of times > 5 days in a row below 7350 l/s	7350	4 years	0	2	0	0	0	0	2	0	0	0	1.0	0	0	0	0	0	1.0
Cease Take - longest consecutive # days below 7350 l/s	7350	6 times	0	10.5 days	0	0	0	0	30 days	0	0	0	18.5 days	0	0	0	0	0	14 days
Cease Take - # of times > 1 day in a row below 7350 l/s	7350	7 years	0	20	0	0	2	0	28	0	0	0	21	0	0	0	3	1	13.0
Cease Take - longest consecutive # days below 7350 l/s	7350	88 times	0	10 days	0	0	2 days	0	28 days	0	0	0	18 days	0	0	0	1 day	1 day	13 days

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Duration (for all record):
Flow was greater than 7350 l/s 97.8% of the time between August 1999 and August 2016 (all year)
Flow was greater than 7350 l/s 95.9% of the time between August 1999 and August 2016 (Nov-Apr incl)

7 existing takes – affected by cease take provision (4 Middle Takaka, 3 Takaka Tributaries)

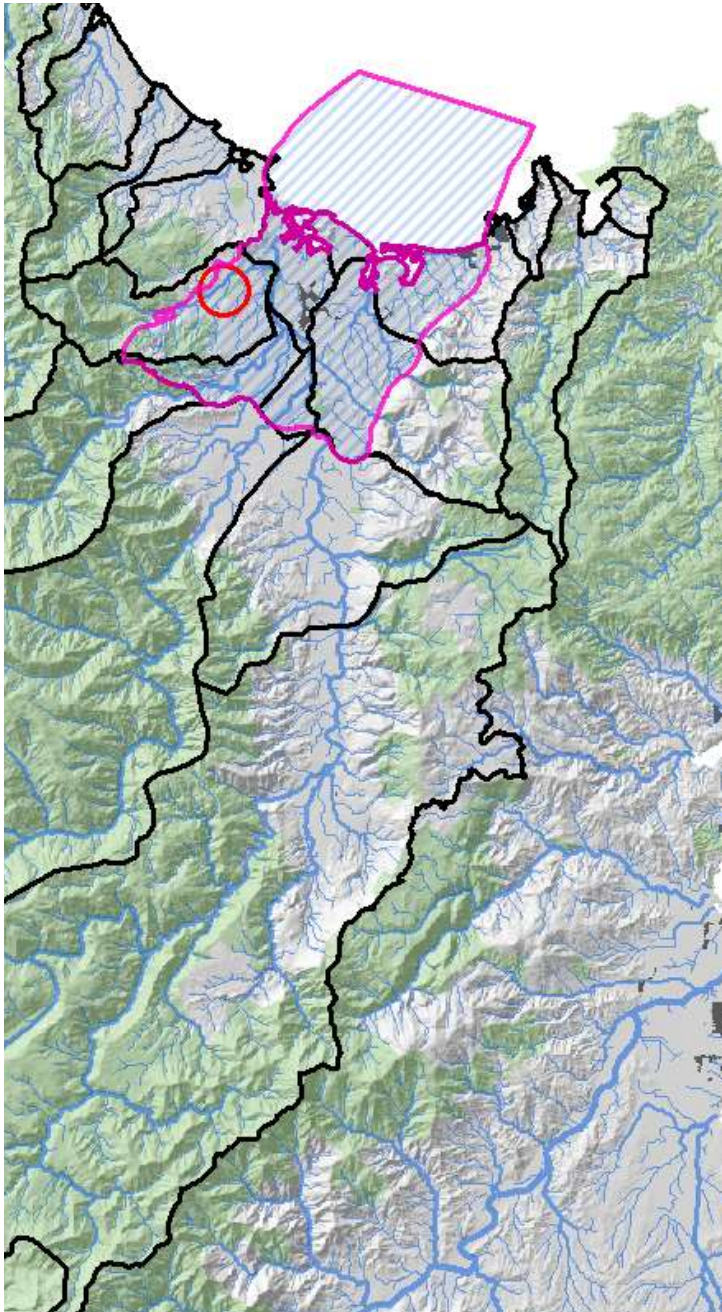
Regime	Cease Take Trigger	Minimum flow protected	Security % above Nov-April	Security No. of CT/yrs >3day	Security No. of CT/yrs >5day
Current	none	none	na	na	na
96:10	7350 l/s	7350 l/s (96% of MALF)	95.9%	7 CT in 4 of 17yrs (longest: 30 days)	6 CT in 4 of 17yrs (longest: 30 days)
Comparison with Upper Takaka A permits	1657 l/s	1417 l/s (60% of MALF)	95.9%	2 CT in 2 of 17yrs (longest: 5 days)	1 CT in 1 of 17yrs (longest: 5 days)

Confined AMA – Management context:

- Confined Arthur Marble Aquifer
- Groundwater
- 1 existing consent (no cease take)
- No waiting lists

Environmental considerations:

- Water from unconfined part of AMA flows into confined part of AMA
- Unknown flow paths within aquifer, but thought to be shallower and deeper parts – not well mixed
- Water from Confined AMA flows out at Te Waikoropupu (~67%) and to the sea (~33%)
- Te Waikoropupu nationally significant, wahi tapu, important to local iwi & community
  - Current take effect not measurable (0.09% of TWS MALF)
- Current water quality generally good
  - In a ‘maintain’ water quality state
  - Debate in FLAG whether at thresholds of concern
  - Potential risk from land use intensification



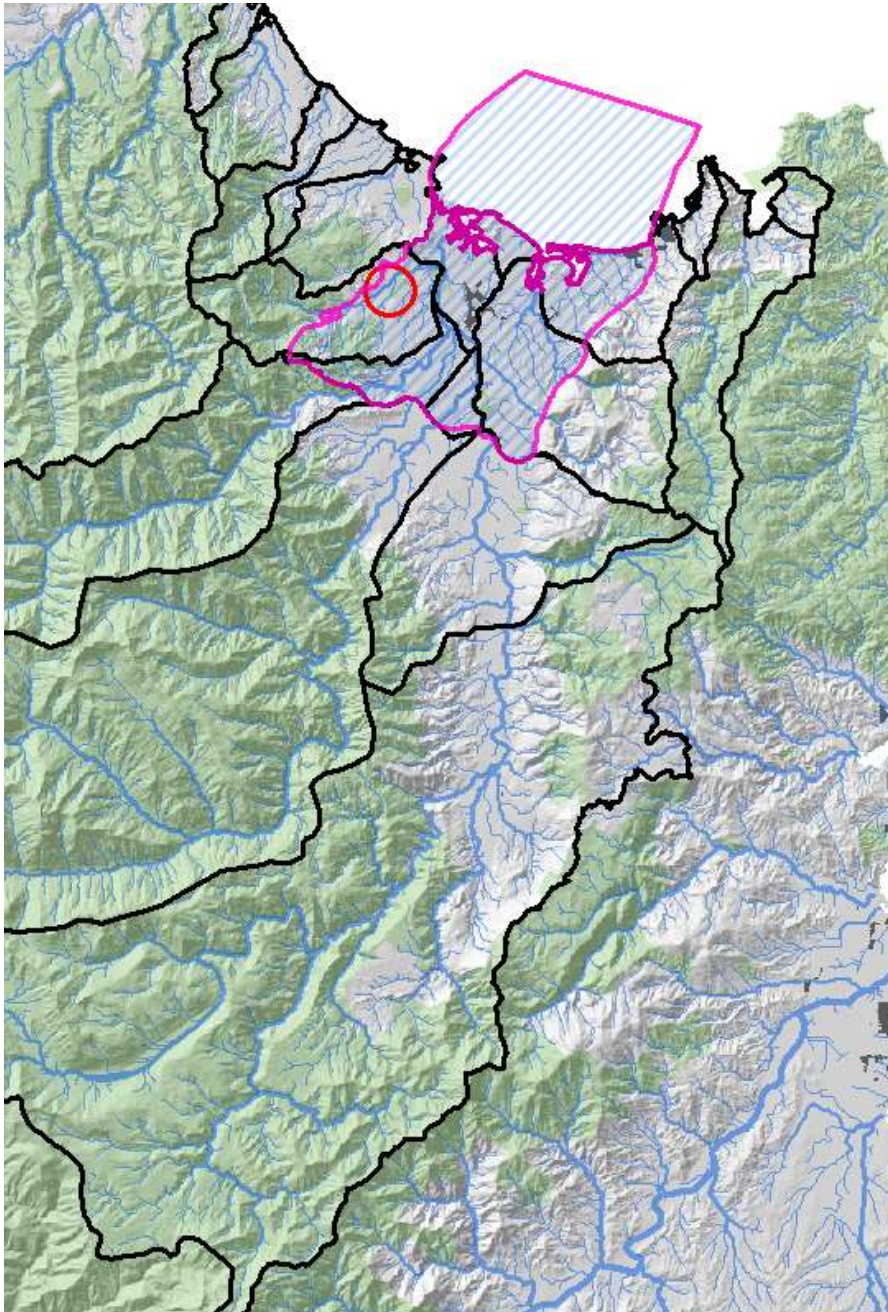
Confined AMA- Interim allocation decisions:

Proposal: 50 l/s allocation

- Based on less than 1% of estimated flow to the sea (~6500 l/s)
- No cease take proposed
- Potential 1 km exclusion zone around Te Waikoropupu
    - No new bores or takes

Key implications:

- Allocation regime defined
- No change for existing consent
- 43 l/s more water
- New takes from confined AMA to be outside exclusion zone

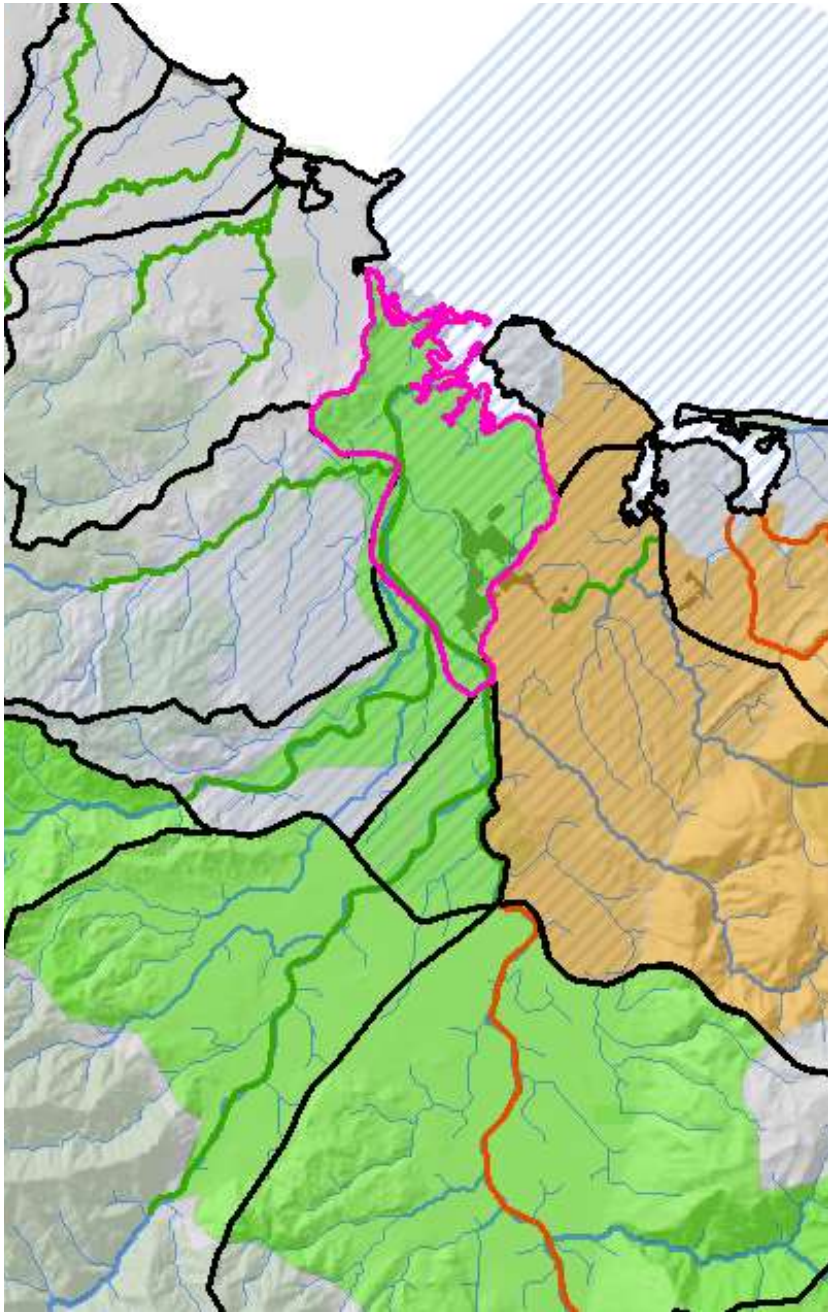


Takaka Township – Management context:

- Lower Takaka River and Takaka Gravel Aquifer
- Surface and groundwater
- No existing surface water consents
- 11 existing groundwater consents
- No waiting list, possibly low demand

Environmental considerations:

- Large amount of water passing through Takaka Gravel Aquifer to coast
- Lower Takaka River is gaining from groundwater and unlikely to be affected by groundwater takes
- Current water quality generally good
  - In a ‘maintain’ water quality state – except localized areas (ie Te Kakau Stream, Lake Killarney)
  - Concern over habitat degradation in small coastal streams around Waitapu estuary



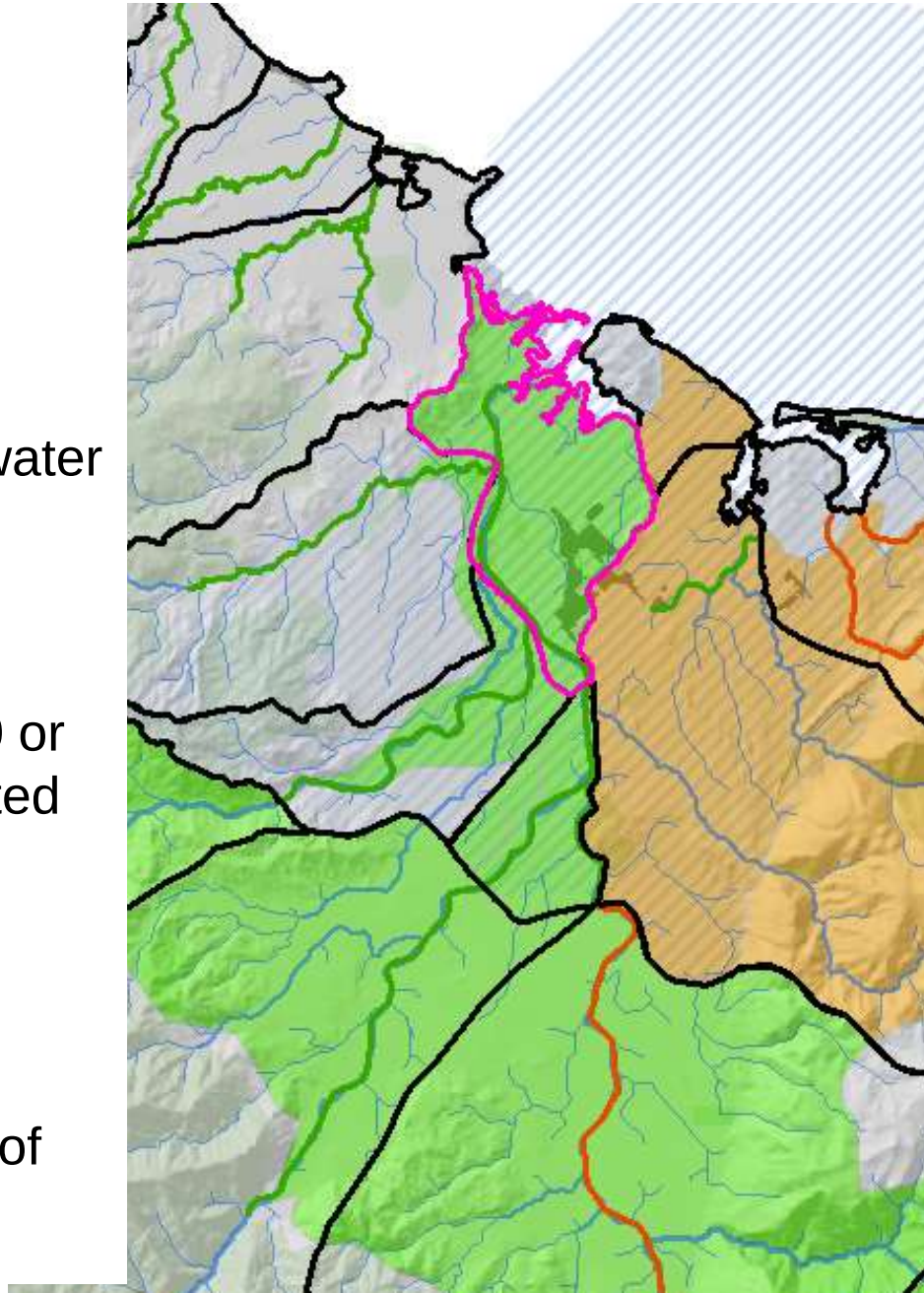
Takaka Township - Interim allocation decisions:

No consensus on proposal as yet:

- Two options discussed:
  - 80:20 recommended as ecologically sustainable
  - 90:05 alternative raised by FLAG
  - Concern over opportunity cost
- Cease take to apply only to surface water takes

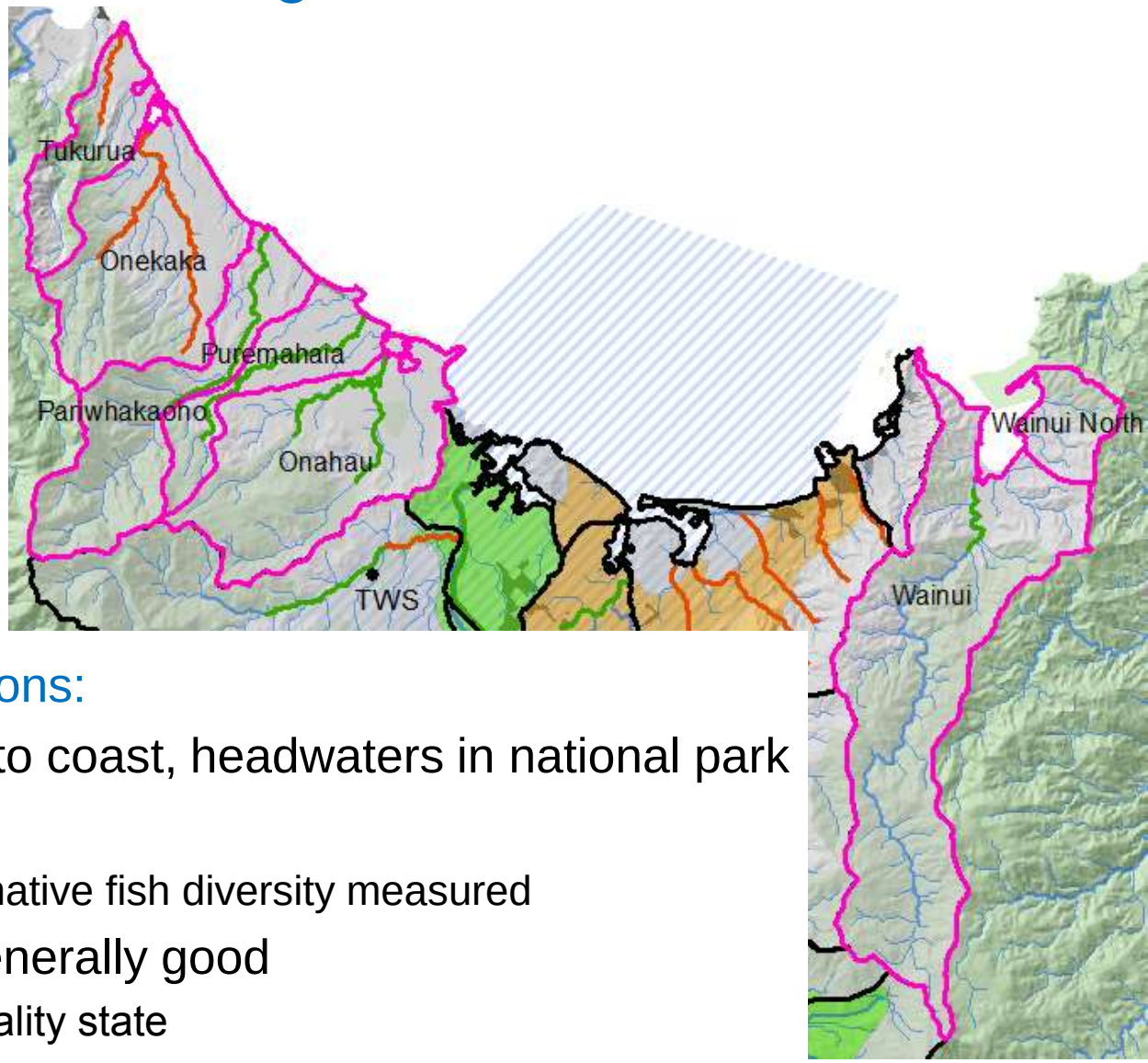
Key implications:

- Protection of river low flows below 80 or 90% of MALF from effects of consented surface water takes
- Large amount of water available:
  - 135 or 405 l/s more water
  - surface and groundwater combined
- No change to existing users security of supply



Coastal catchments – Management context:

- Tukurua to Onahau, Wainui, Wainui north
- Surface water
- 4 existing consents
  - Wainui, Wainui North, Tukurua, Onekaka
- No cease takes
- No waiting lists



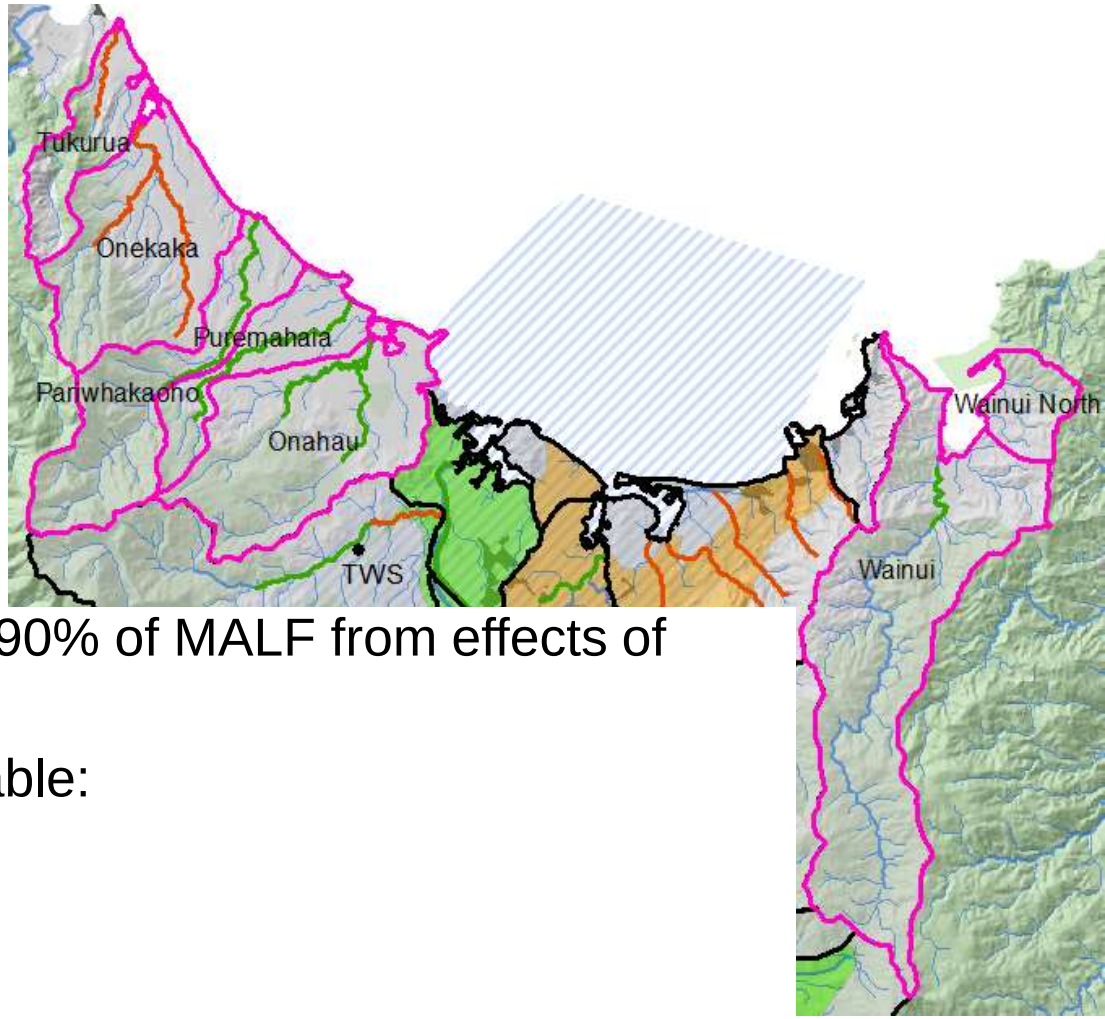
Environmental considerations:

- Smaller streams, close to coast, headwaters in national park
- High ecology values
  - eg Onekaka very high native fish diversity measured
- Current water quality generally good
  - In a ‘maintain’ water quality state
  - Concern over swimming quality at river mouths and beaches
    - Ongoing *E.coli* issues at Tukurua, Onahau

Coastal catchments- Interim allocation decisions:

Proposal: 90:10 regimes

- Existing and new consents:
  - Allocation up to 10 % of MALF
    - 2 to 61 l/s
  - Cease take for minimum flow of 90% MALF
  - New cease takes for 2 existing and new consented takes

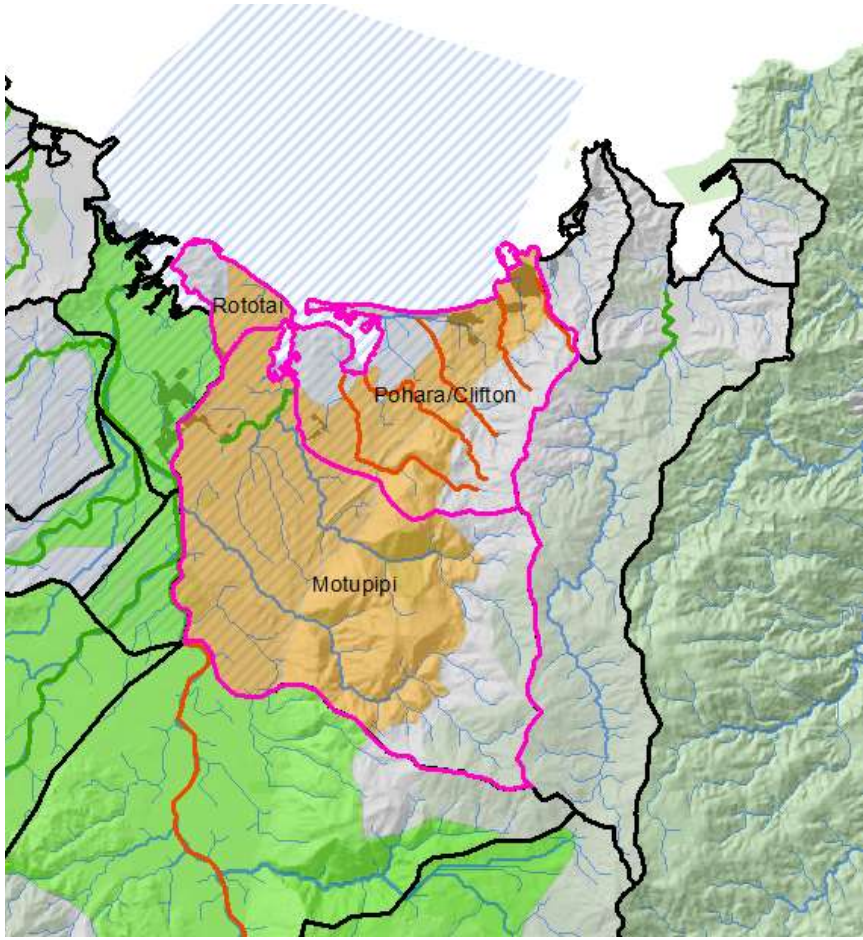


Key implications:

- Protection of low flows below 90% of MALF from effects of consented water takes
- Small amounts of water available:
  - Pariwhakaoho: 19.5 l/s
  - Puremahaia: 2.3 l/s
  - Onahau 6.7 l/s
  - Wainui 61.3 l/s (31.5 l/s more water)
  - Wainui North (yet to be confirmed - existing take 1.9 l/s)
- No further water in:
  - Tukurua (over-allocated under 90:10)
  - Onekaka (existing take grandfathered at equivalent of 90:12)
- Reduced security of supply for 2 existing consents

Motupipi, Pohara/Clifton, Rototai – Management context:

- Surface waters
- Takaka Gravel and Limestone Aquifers
- Shallow coastal aquifers
- Several community water supply takes
- No waiting lists

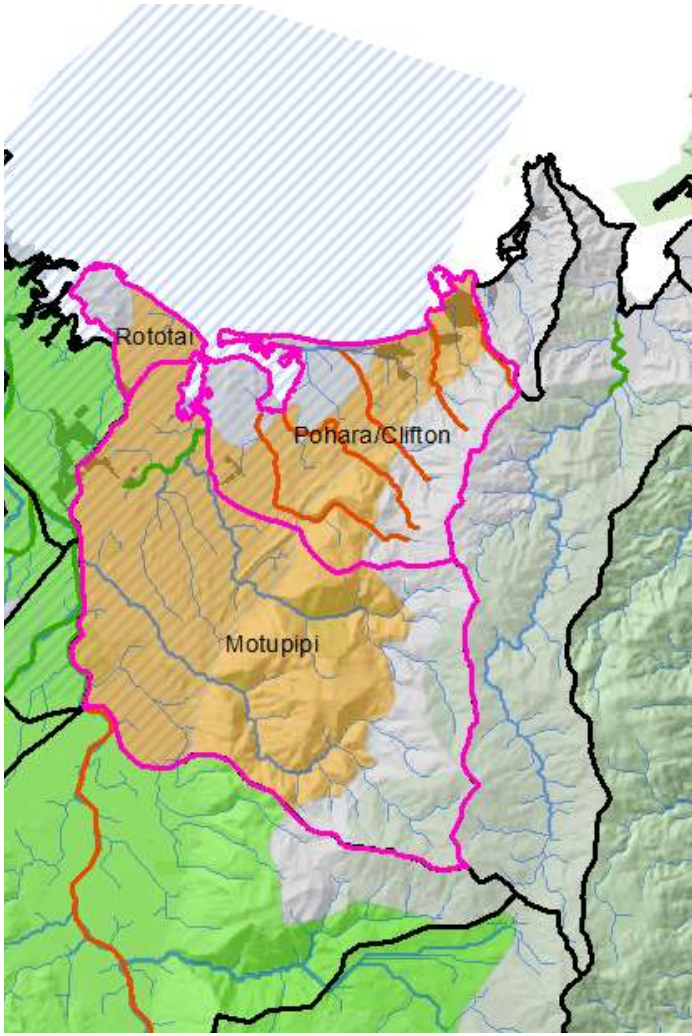


Environmental considerations:

- Smaller streams, close to coast
  - Many stream reaches go dry (recharge of Limestone aquifer and localized gravels)
  - Lower Motupipi River gains from groundwater (from around Sunbelt Cres)
- Current water quality generally good
  - In a ‘maintain’ water quality state – except for nitrate in the Limestone Aquifer
  - Concern over swimming quality - ongoing *E.coli* issues at Pohara Creek
  - Riparian and aquatic habitat concerns – particularly for Motupipi tributaries

Motupipi, Pohara/Clifton, Rototai – Interim allocation decisions:

- Motupipi zone: 80:20 (surface water)
  - Regime for surface water only
  - Almost fully allocated: ~2 l/s more water
  - Cease take applies to 1 existing take and new takes
  - Existing (6) groundwater takes grandfathered
- Pohara/Clifton zone: Existing Takes
  - Existing (10) surface and (3) groundwater takes grandfathered
  - Cease take provisions addressed in consents
- Rototai : Existing Takes
  - Groundwater only, 2 existing consents grandfathered
  - Cease take provisions addressed in consents
- No waiting lists in any of these zones



Implications:

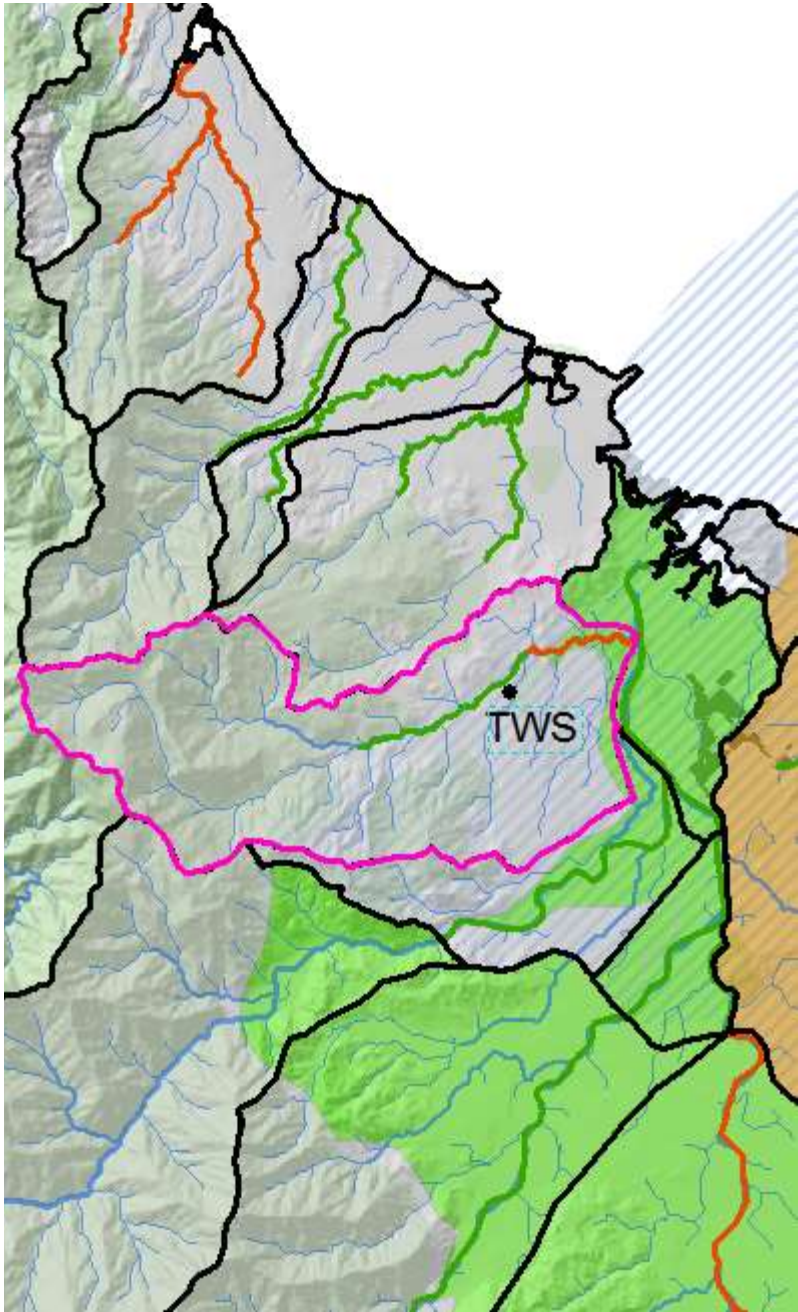
- Some river low flow protection with cease takes
- Lower security for some existing users due to new cease takes
- No new water available in Pohara/Clifton or Rototai
- ~2 l/s more water available in Motupipi River

Waikoropupu River Zone – Management context:

- Campbell Creek (Bell Creek)
  - Surface water only
  - No existing consumptive takes
- Waikoropupu River
  - below confluence with Campbell Creek
  - Surface (2) and ground water (1)
  - 3 existing takes
  - Excludes TWS (Salmon farm take non consumptive)
- No waiting list

Environmental considerations:

- TWS influences Waikoropupu River flows
- Campbell Creek considered similar to coastal western catchments
- Current water quality generally good
  - In a ‘maintain’ water quality state

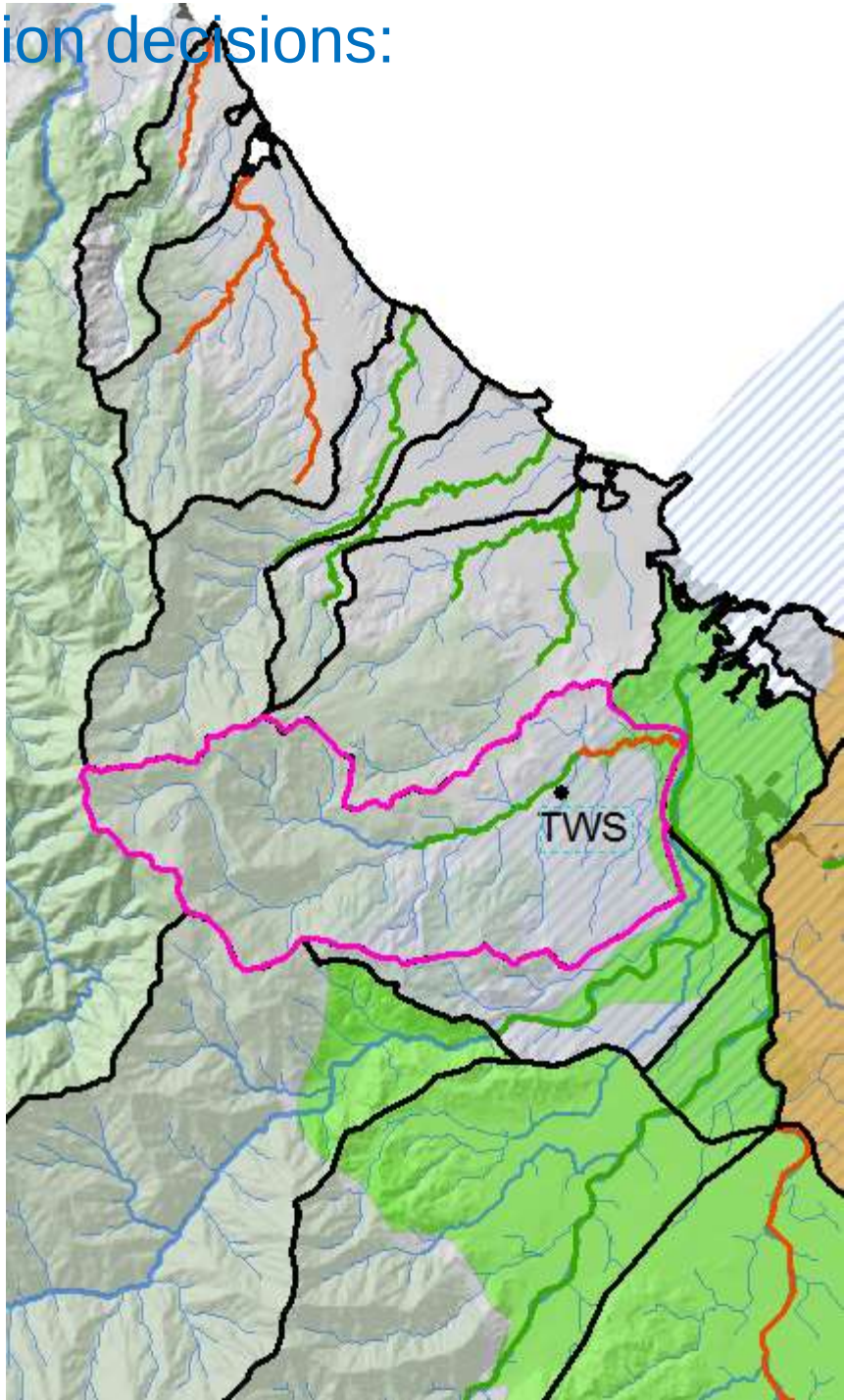


Waikoropupu River - Interim allocation decisions:

- Campbell Creek: 90:10
  - Allocation up to 10 % of MALF (35 l/s)
  - Cease take for minimum flow of 90% MALF
- Waikoropupu River: Existing Takes
  - Existing 3 takes grandfathered
  - No cease take proposed due to water available

Key implications:

- Protection of low flows:
  - in Campbell Creek below 90% of MALF from effects of consented water takes
  - In Waikoropupu by consent provision
- 35 l/s available in Campbell Creek
- No further water in Waikoropupu river area
- Lower security of supply for existing consumptive takes

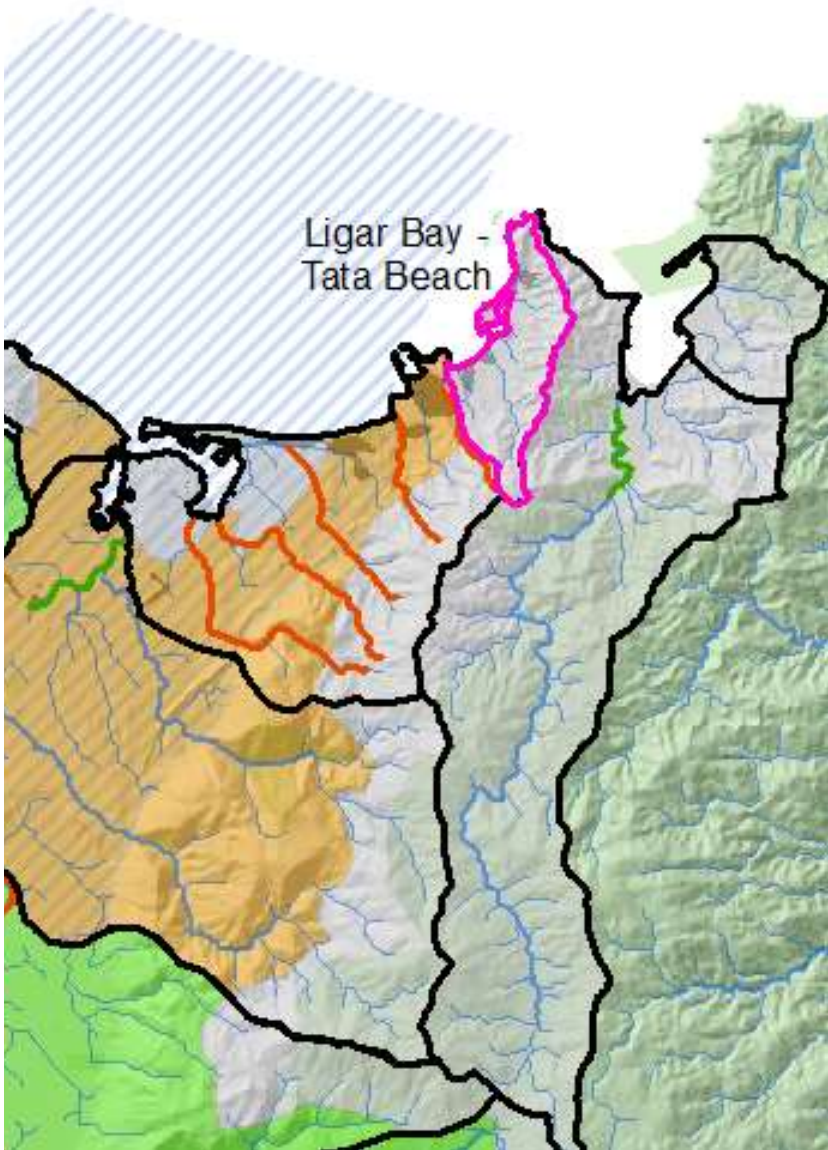


Ligar Bay-Tata – Management context:

- Ligar Bay – Tata (surface water)
  - No existing takes
  - Limited water availability
- No waiting lists

Environmental considerations:

- Smaller streams, close to coast
- Current water quality thought to be good
  - In a ‘maintain’ water quality state



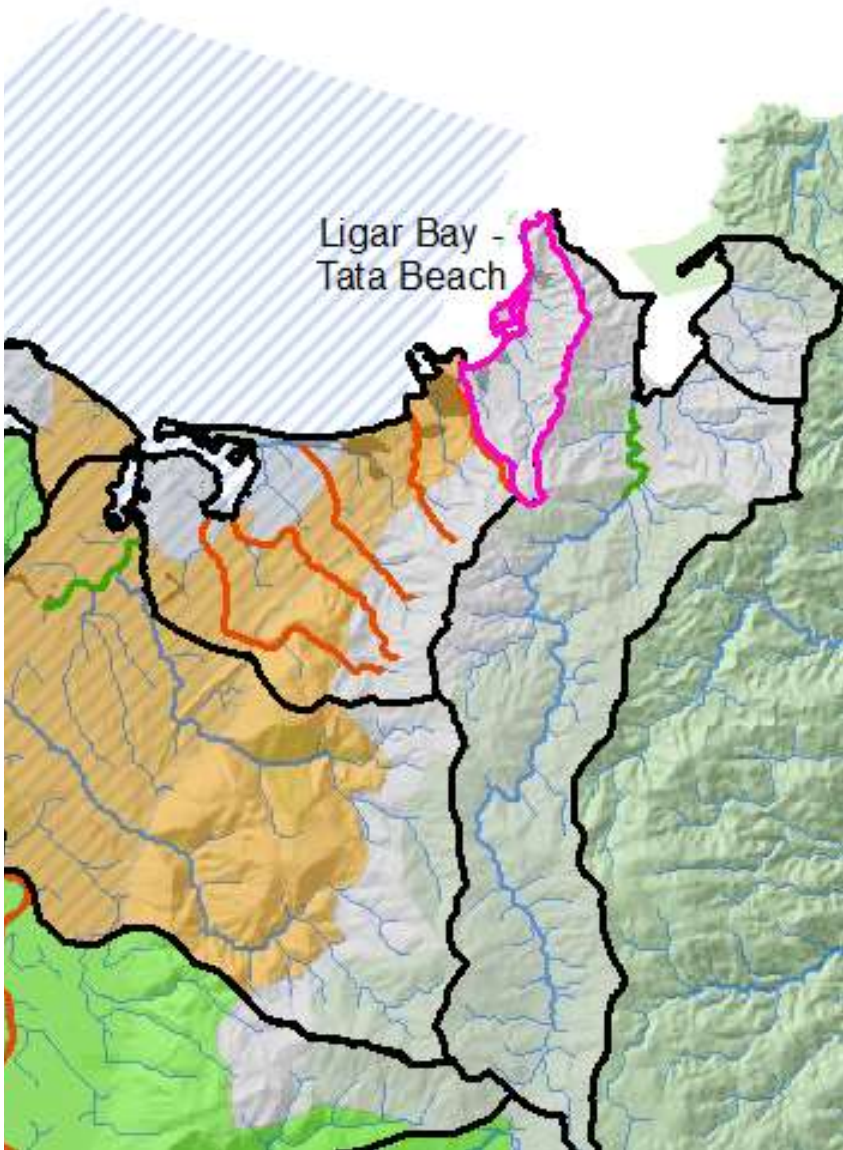
Ligar Bay-Tata - Interim allocation decisions:

No regime proposed as yet

- A 90:10 regime may be applicable
- If no regime, default allocation policy applies
- Upper extent of current default allowance (33% of 5yr 7day low flow) typically not ecologically sustainable in Takaka

Key implications:

- No change to current situation
- Possible 90:10 regime, but little available water.



Questions?