

Waimakariri Land and Water Solutions Programme

Targeted Engagement with Consent holders

23 April 2018

Saltwater Creek

Mō tātou, ā, mō kā uri ā muri ake nei

For us and our children after us

For more information visit www.waimakariri-water.nz
or find us at facebook.com/canterburywater

Workshop Agenda

- Introduction
- Minimum flow and allocation options
- Group discussion
- Groundwater allocation options
- Group discussion
- Managing nitrate risk
- Group discussion



Workshop purpose

- Saltwater Creek flow regime in LWRP and what it means for you
- Your feedback on options Zone Committee considering for:
 - Addressing over allocation
 - Saltwater Creek minimum flow and allocation limits
 - Capping groundwater allocation limits
 - Managing to nitrate limits

To better support stream ecology, the cultural health and other uses of rivers and streams and the estuary

Zone Committee's solutions include....

1. Practical Actions



Actions on the ground by landowners, industry, community and ECAN etc.

2. Water Quality & Quantity Limits, policies and rules



Plan Change to Section 8
Land and Water Regional Plan








Issues for Saltwater Creek

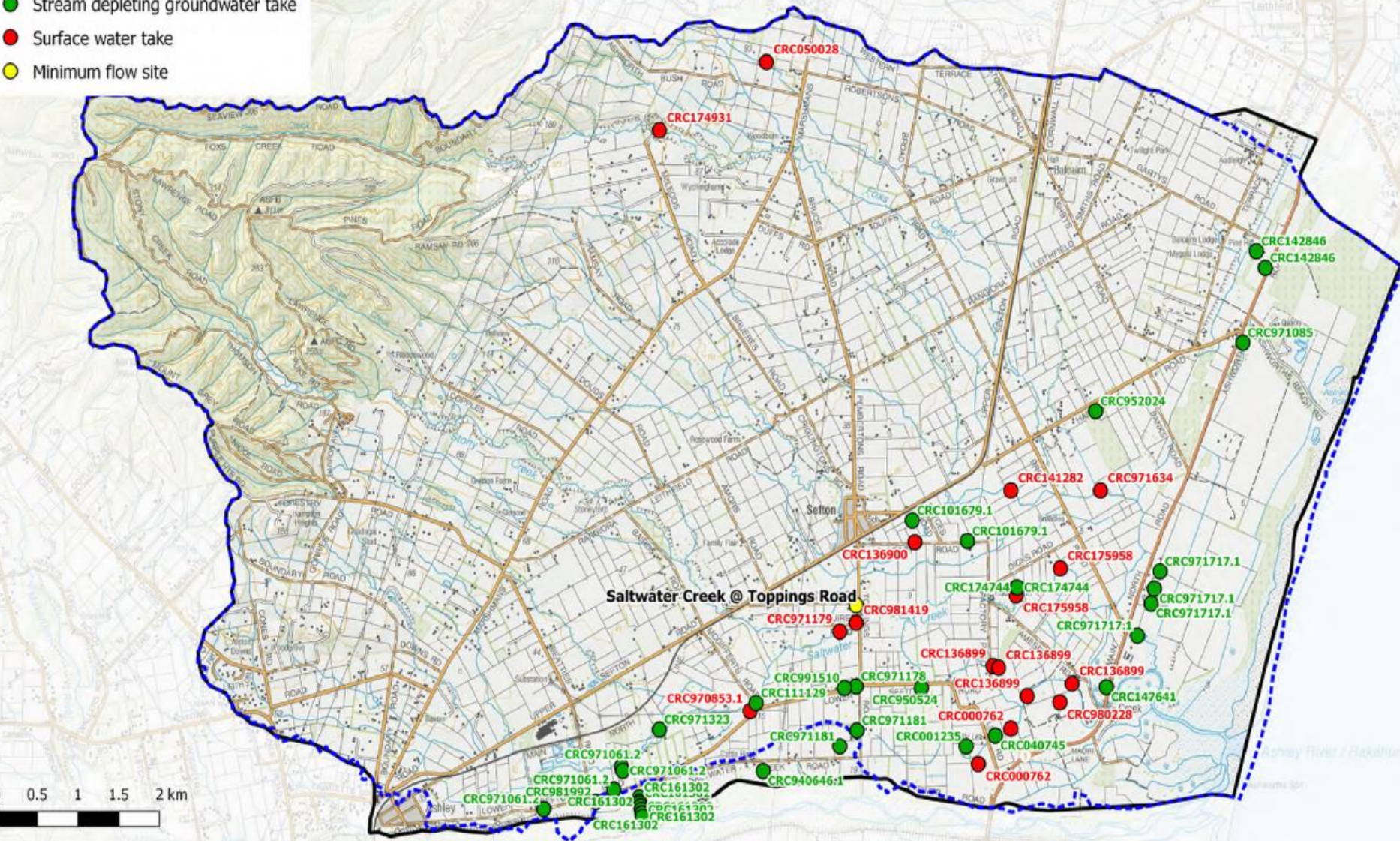
- Nutrient enrichment of Estuary
- Degraded habitat esp. sediment
- Nuisance algal growth in tidal reaches
- Loss of cultural values
- Hydrology challenges



Saltwater Creek Surface Water Allocation Zone

Legend

-  Revised SWAZ boundary
-  Existing SWAZ boundary
-  Stream depleting groundwater take
-  Surface water take
-  Minimum flow site



0.5 1 1.5 2 km

What consents need a minimum flow restriction?

- Surface water takes
- Shallow groundwater takes connected to stream or river classed as having a:
 - **Direct** stream depletion effect
 - **High** stream depletion effect greater than 5 L/s

Saltwater Creek flow regime (LWRP)

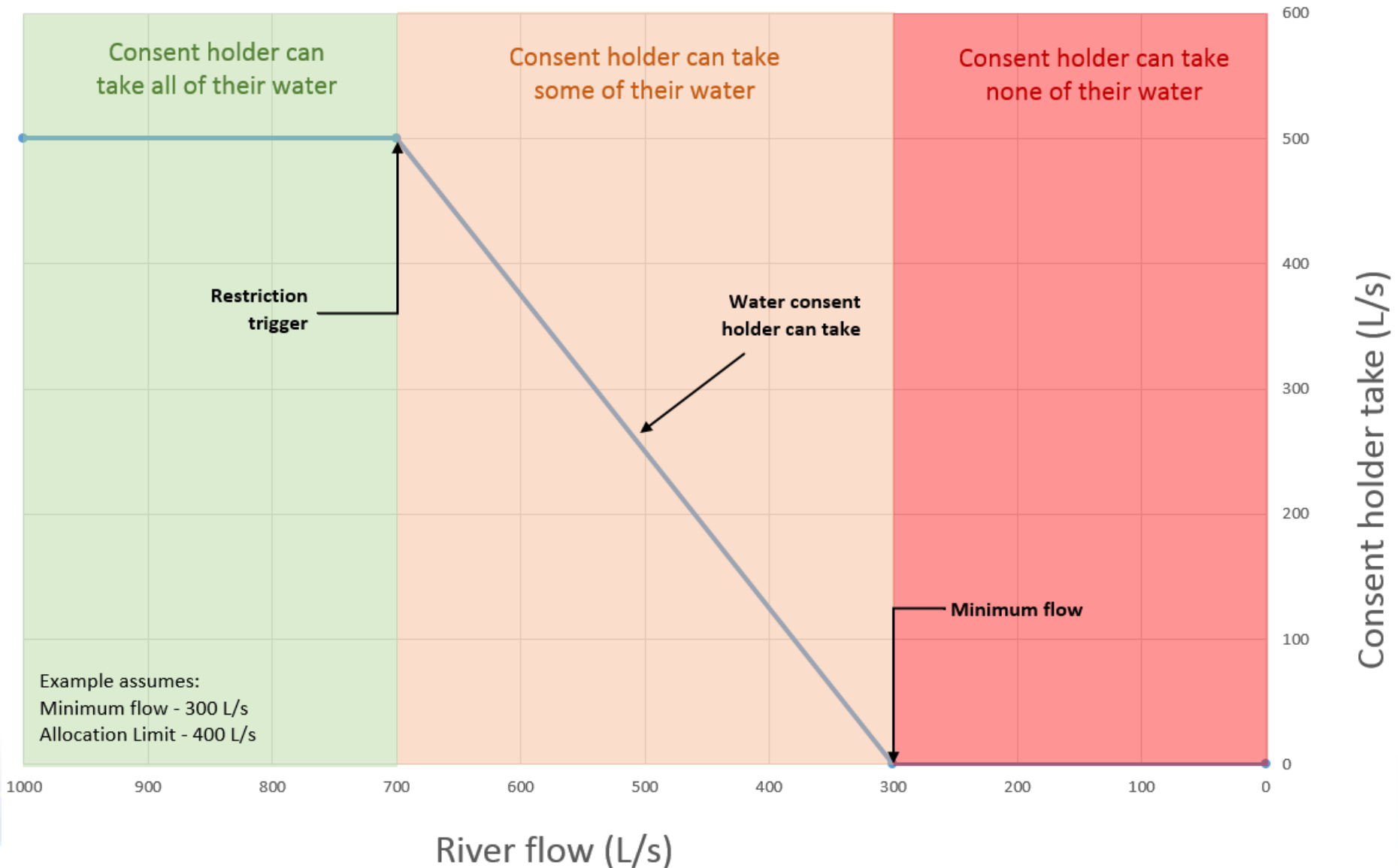
River or Stream	Minimum flow L/s	Allocation limit L/s (adjusted limit L/s)	Current allocation L/s
Saltwater Creek	100	408 (417)	550 ~135% of limit

Plus partial restrictions on pro-rata basis to maintain min flows (Policy 8.4.1)

The amount of water allocated within an allocation limit is the sum of:

- (a) the maximum rate of abstraction of each surface water take and
- (b) the stream depletion effect of each groundwater take calculated in accordance with Schedule 9

Partial restrictions



What does the LWRP mean for you?

- New takes from Saltwater Creek prohibited
- Existing users can apply for replacement consents (must be at least 3 months before expiry)
- Your consent would include LWRP compliant conditions including:
 - Annual volume based on efficient water use
 - Minimum flow if a surface water take or stream depleting groundwater take
 - Pro-rata partial restrictions
 - Up to 10% reduction in previous rate of take and/or volume if over-allocated

Questions

1. Do you have any concerns about any of the minimum flow and allocation limit options?
2. Any ideas for how we can address those concerns?
3. How should over-allocation be phased out?

Saltwater Creek minimum flow options

Options	Pros	Cons
1. LWRP – 100 L/s (with partial restrictions)	<ul style="list-style-type: none">• Better reliability relative to cultural/ecological options• Ecological benefits from partial restrictions• No additional days on full restriction relative to current consents	<ul style="list-style-type: none">• Low level of protection for stream ecology (58% 7DMALF)• 56% volume restriction in average year (0 days on full restriction and 205 on partial restriction)
2. Ecological / Cultural – 148 L/s over time (with partial restrictions)	<ul style="list-style-type: none">• Better level of protection for stream ecology (86% 7DMALF)• Meets cultural aspirations	<ul style="list-style-type: none">• Significant economic impact relative to LWRP by worsening reliability• 66% volume restriction in average year (7 days on full restriction and 199 days on partial restriction)

Saltwater Creek allocation limit options

Options	Pros	Cons
1. LWRP (adjusted limit) – 417 L/s	<ul style="list-style-type: none">• Should maintain current level of economic activity (assuming actual water use not affected by phasing out over-allocation)• Provides better level of protection for stream ecology• Helps nitrate risk by preventing new allocation	<ul style="list-style-type: none">• Still considered a high allocation limit for ecological values
2. A feasible limit < LWRP	<ul style="list-style-type: none">• As for option 1 but to greater extent	<ul style="list-style-type: none">• Further work needed to determine a feasible reduction below LWRP allocation limit

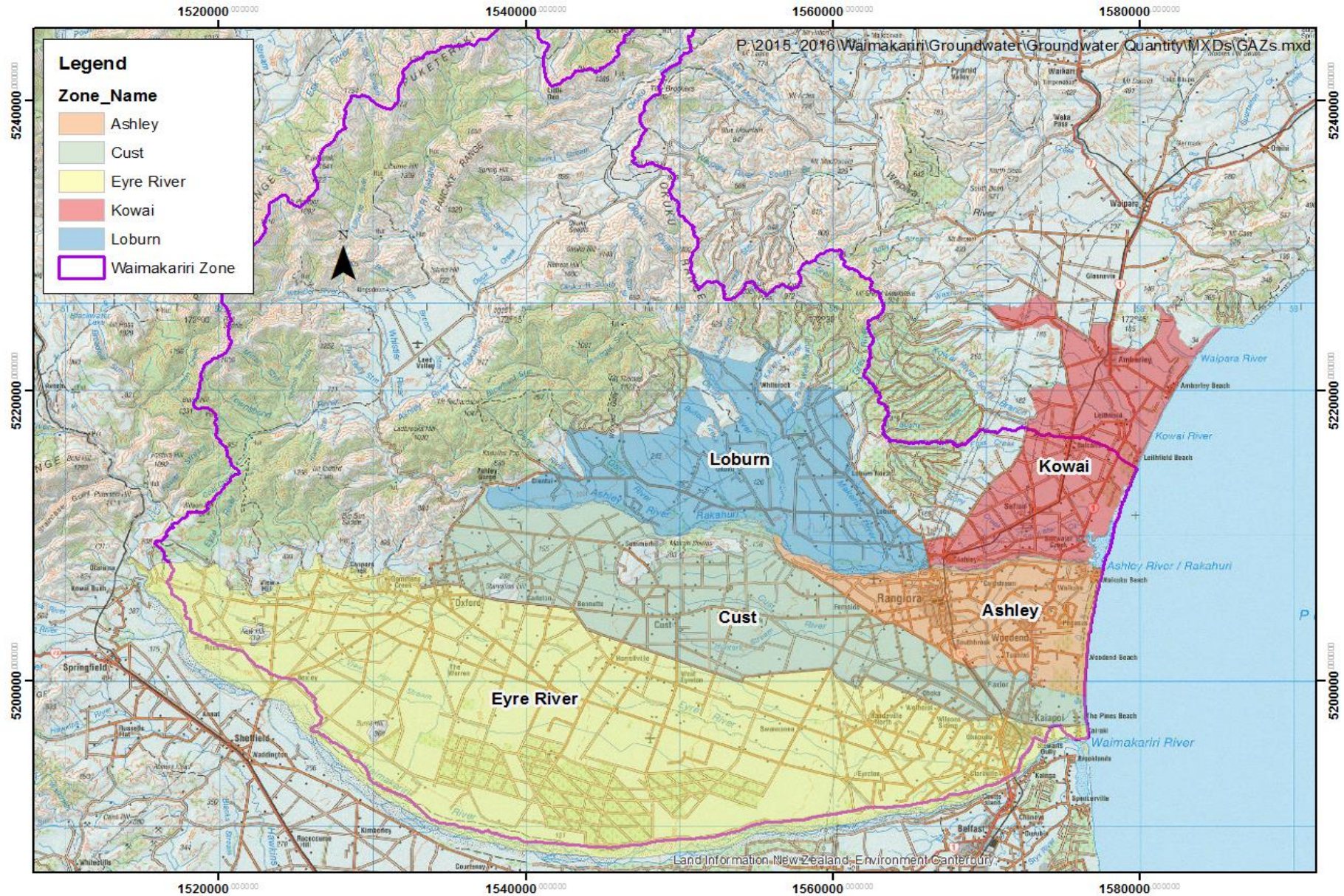
Some tools for addressing out over-allocation of Saltwater Creek

1. Switch to deep groundwater
2. Reducing allocation e.g. % haircut for everyone
3. Prohibiting or restricting water transfers
4. Voluntary surrender of water permits
5. Not re-allocating lapsed or expired consents
6. Allocate water based on actual water use data
7. Allocate water based on modelled efficient water use
8. More accurate stream depletion assessment model
9. Water User Groups (sharing water when takes restricted)
10. Offset mitigations in short term (e.g. riparian plantings)

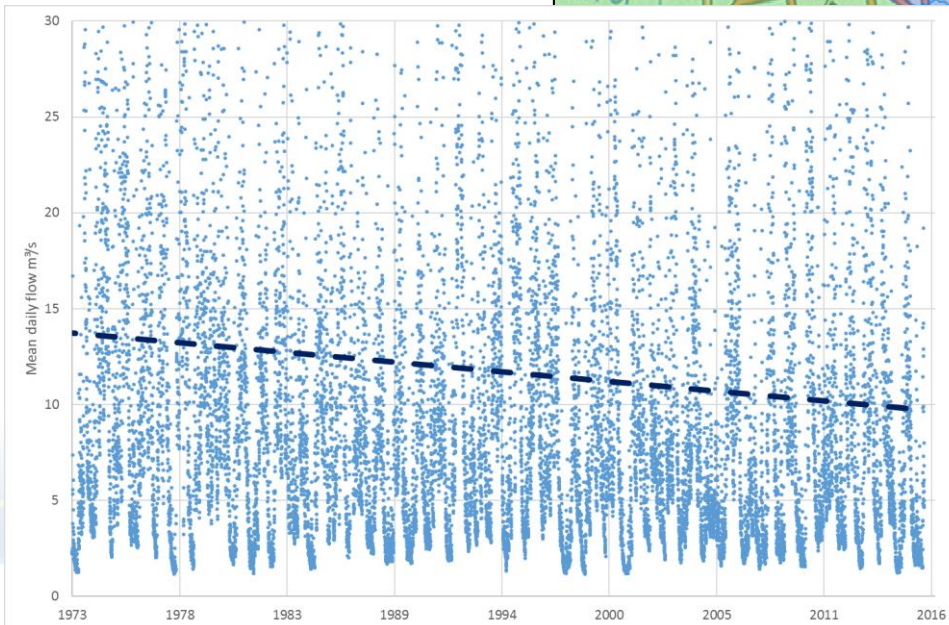
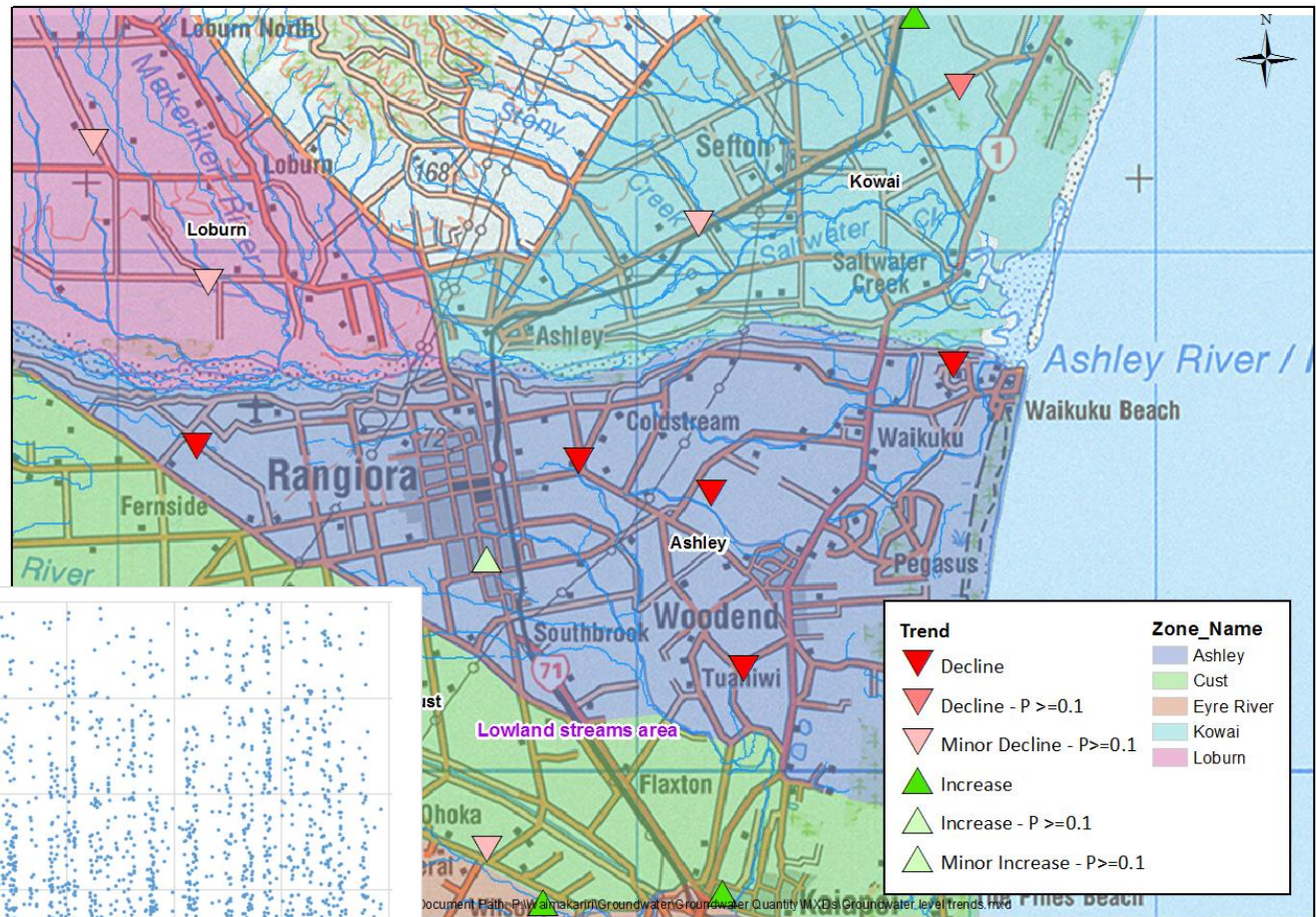
Could apply some of above when apply to renew consents OR
earlier by consent review

Groundwater quantity

Groundwater zones



Flow and groundwater level trends



Kowai Groundwater allocation options

Issues:

1. Current allocation limit may not reflect actual groundwater availability
2. Full uptake of allocation limit may allow for reduced reliability and lower spring-fed stream flow

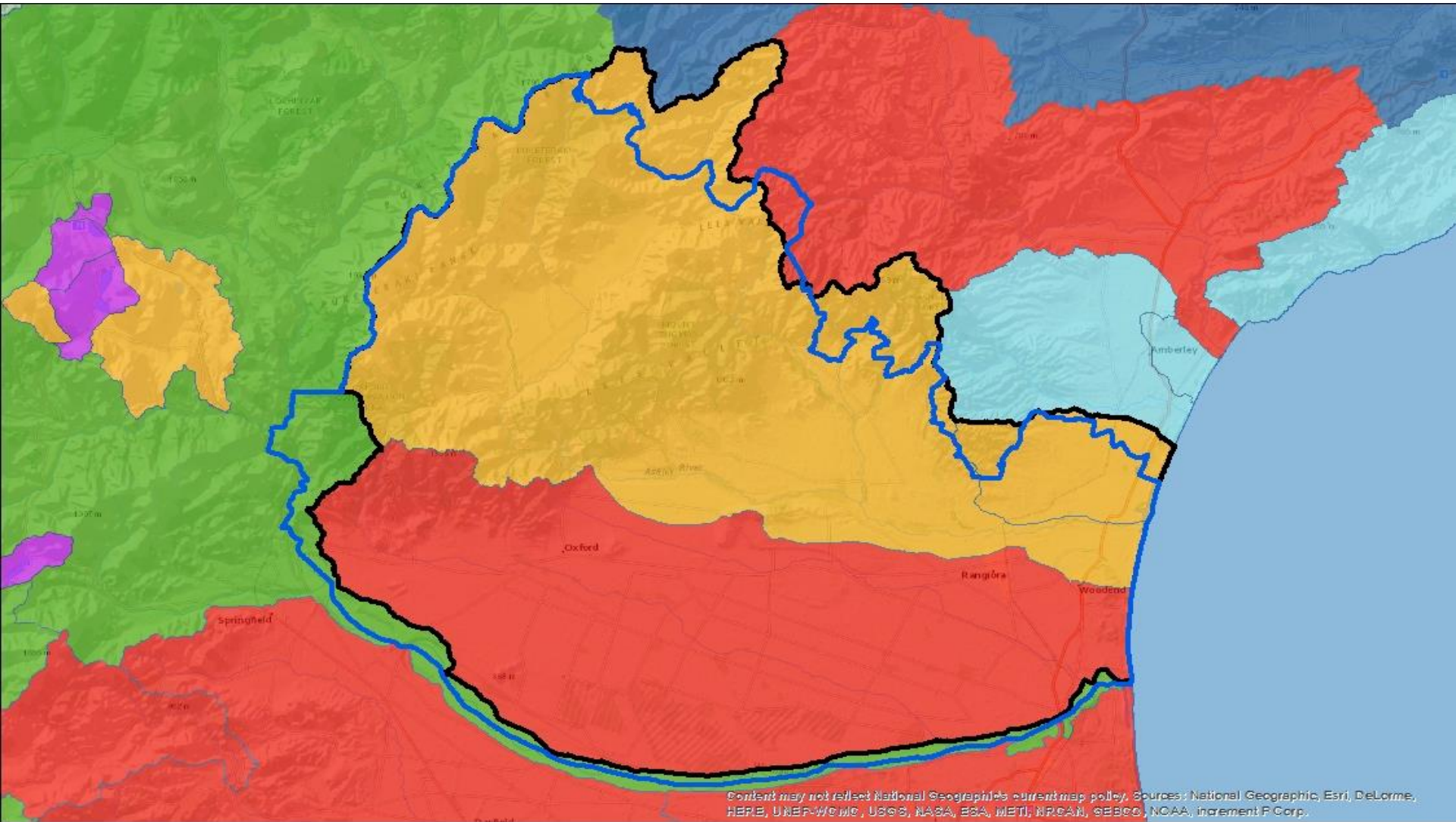
Allocation limit (Estimated % Allocated)	Options	Pros	Cons
17.4 million m ³ /year (53%)	1. Cap at current allocated volume	Protects against reduced reliability & low flows in spring-fed streams	Stops swaps from river supply to groundwater
	2. Cap at current allocated volume + <ul style="list-style-type: none">• Amount to enable switches from surface water,	Allows swaps from river supply to groundwater	Lower protection against reduced reliability & low flows in spring- fed streams
	3. Option 2 and/or: <ul style="list-style-type: none">• Headroom % for new takes (e.g. 10%)	Allows for some increased usage	









Question

1. Do you have any concerns about the options for capping groundwater allocation?
2. Any ideas for how we can address those concerns?

Nitrates

Nutrient zones



-  Lake Zone
  Water Quality Outcomes Not Met
  Waimakariri CWMS zone boundary
-  Unclassified
  At Risk
  Waimakariri sub regional chapter boundary
-  Refer to Hurunui Waiau River Regional Plan
  Meets Water Quality Outcomes
- 0 5 10

0 5 10 20 Kilometers



Proposed nitrate limits

Stream or River	Current measured mg/L nitrate-N	ZC preferred options mg/L nitrate-N
Saltwater Creek	0.7	1.0
Groundwater*	1.1	1.1

* As an annual average

Note: the LWRP region wide limits for groundwater nitrate-N are an annual average concentration of <5.65 mg/L and maximum concentration of <11.3 mg/L.

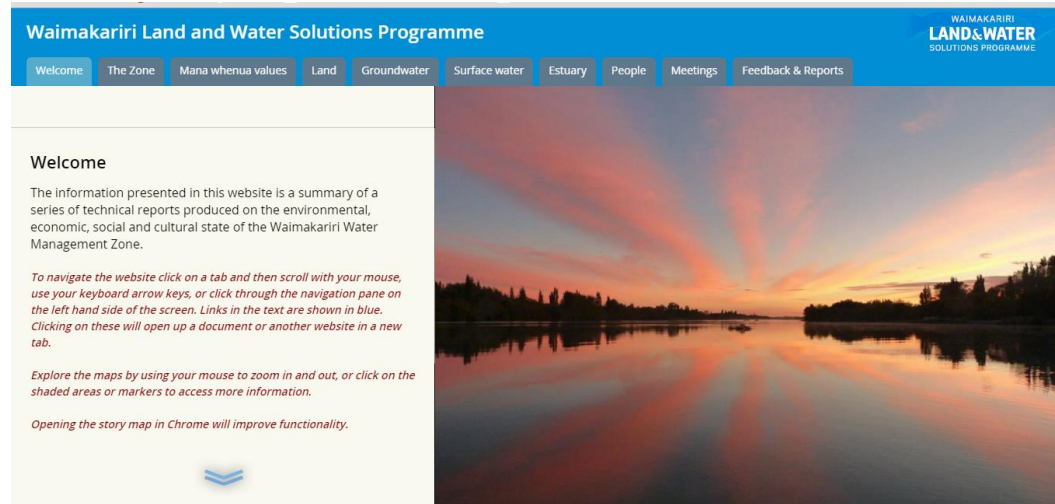
Options for managing to nitrate limits

Option	Summary
LWRP orange zone nutrient rules (water quality outcomes at risk)	<ul style="list-style-type: none">• Farming permitted if:<ul style="list-style-type: none">• Less than 50 ha irrigation or• Area used for winter grazing of cattle < 10 ha for properties less than 100 ha; 10% of area of properties between 100 ha and 1000 ha; or 100 ha for properties larger than 1000 ha• Consent required above thresholds and to comply with “Baseline loss rate” and from 2020 “Baseline GMP loss rate”• Can apply for consent to increase nitrogen losses above N Baseline but generally inappropriate (non-complying)
LWRP red zone nutrient rules (water quality outcomes not met)	<ul style="list-style-type: none">• Permitted activities not allowed to increase irrigated area by more than 10 ha above area irrigated at Feb 2016• Cannot apply for consent increase nitrogen losses above Baseline (prohibited)

Questions

1. Do any concerns about any of the nitrate limit options for rivers and groundwater?
2. Do you have any concerns with the Ashley catchment being subject to red zone nutrient rules?

Thank you for your time!



Go to **waimakariri-water.nz** for more information
or provide feedback.