

Heed the Taniwaha Dan Hikuroa



UNIVERSITY OF
AUCKLAND
Waipapa Taumata Rau
NEW ZEALAND

ARTS



TE AWA O
WAIKATO
RIVER SYMPOSIUM





The Challenge

- Across New Zealand, many rivers are unsafe parts of the ecosystem, with Kiwis seriously concerned about declining river health.
- The 'bottom line' regulatory approach of the government's freshwater reforms requires a coordinated commitment across river stakeholders.
- Despite the talent and commitment of existing groups, the current fragmented approaches are not achieving the scale and rapidity of change needed
- It is not enough to rely on government.



The Challenge

- 70% of our rivers don't meet swimming standards
- Half our lakes are polluted with excess nutrients and/or over-run by invasive pests
- Sediment chokes most harbours and estuaries
- 90% wetlands gone
- 18,000-34,000 people contract waterborne diseases every year





Te Awaroa - Voice of the River

**River Health
River Behaviour
River Stories**

Voice of the River

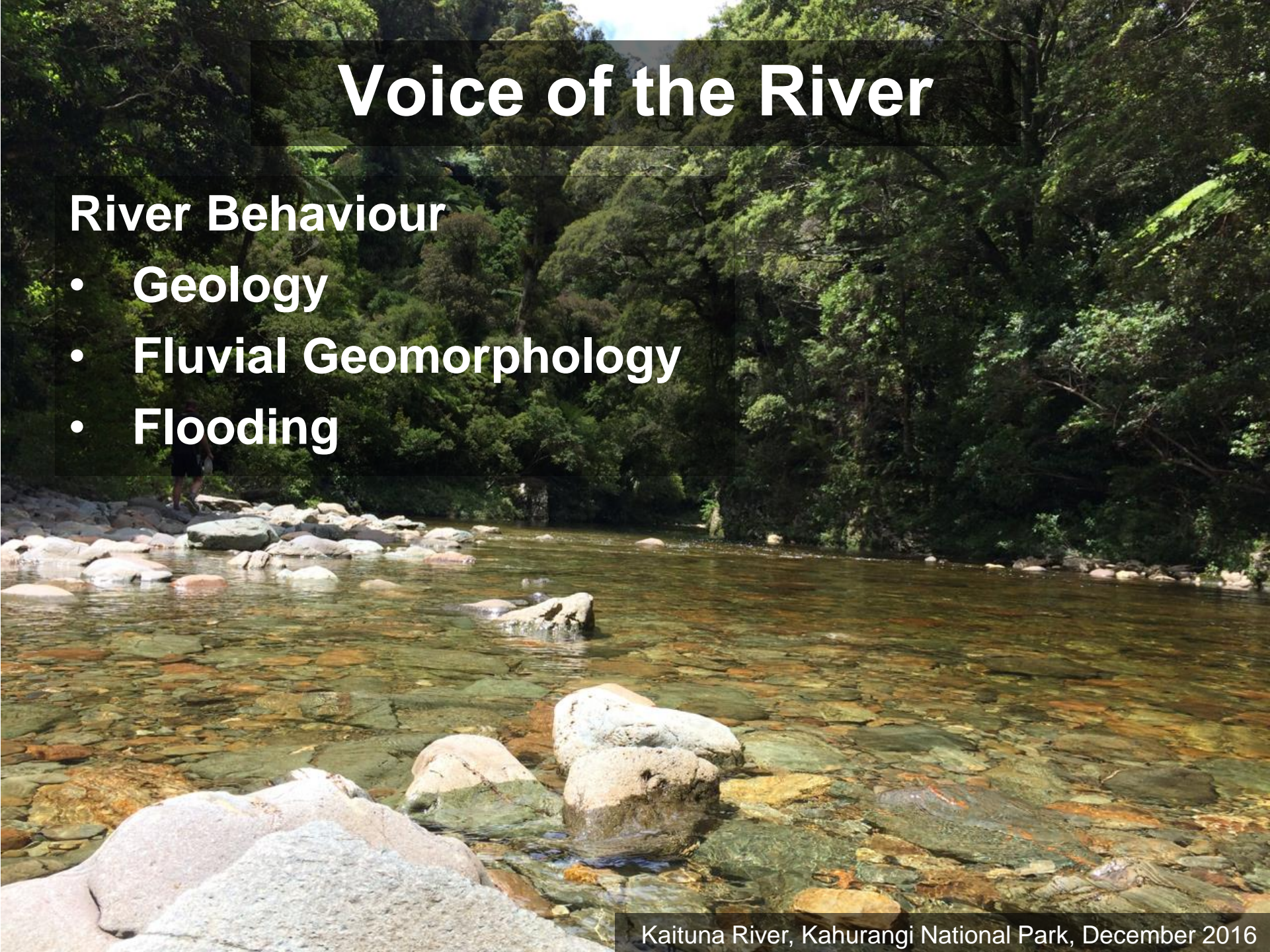
River Health

- **Minimum flows**
- **Water quality - nutrients, sediments, pathogens, human and animal waste**
- **Flora and fauna**

Voice of the River

River Behaviour

- **Geology**
- **Fluvial Geomorphology**
- **Flooding**



Voice of the River

River Stories

- How do we know the river?
- Multiple views and stories
- “Noo taatou te awa. Noo te awa taatou”
- River ethnography

Waikato River Act



”Noo taatou te awa. Noo te awa taatou. E kore e taea te wehe te iwi o Waikato me te awa. He taonga tuku iho naa ngaa tuupuna. E whakapono ana maatou ko taa maatou, he tiaki i taua taonga moo ngaa uri whakatupu

“We are the river. The river is us. The people of Waikato and the river are inseparable. It is a treasured gift of our ancestors. We believe it's our job to protect that heritage for future generations”

Naa Robert Mahuta

Let the River Speak

Marsden project



Let the River Speak

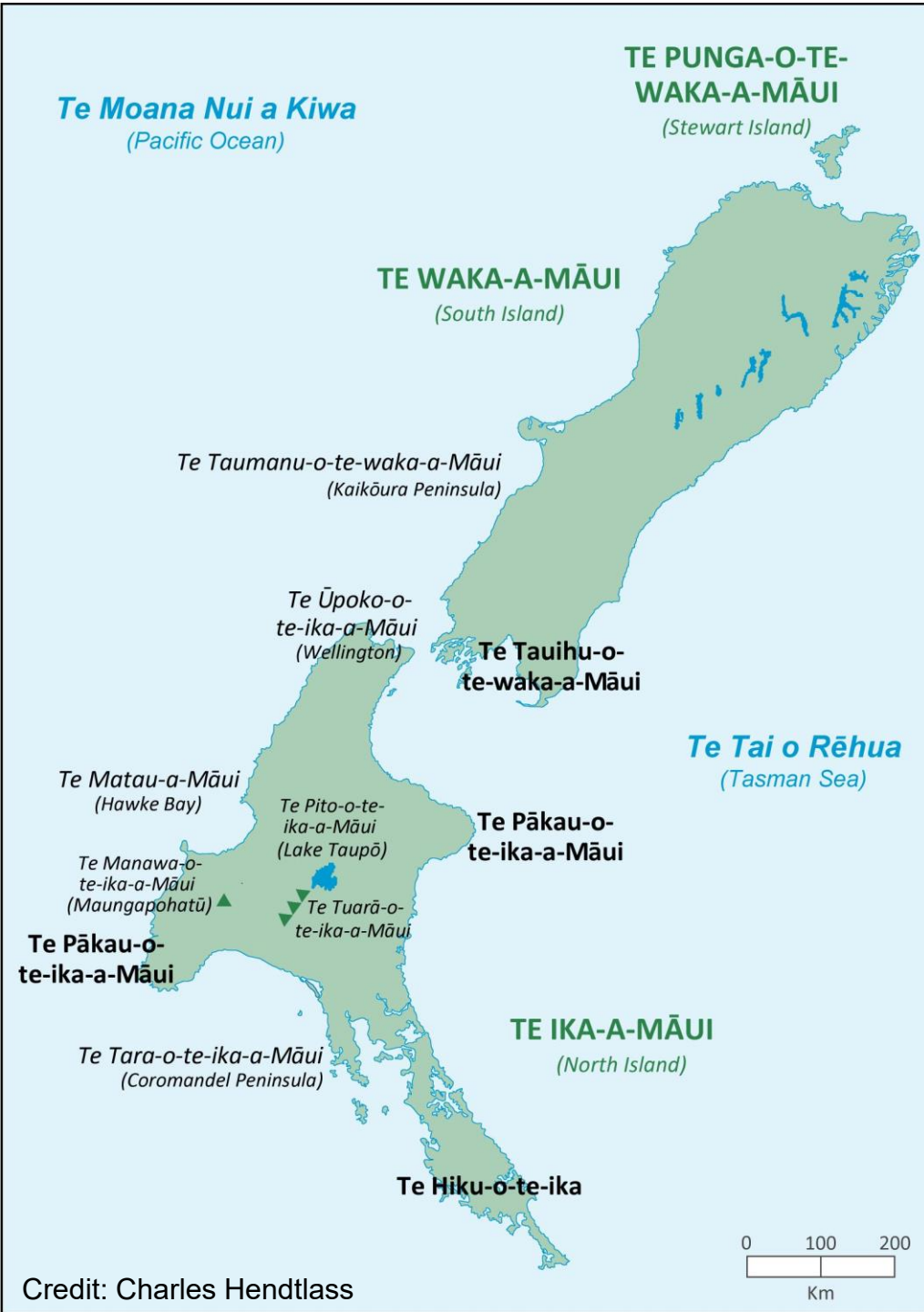


Tāmaki based team members

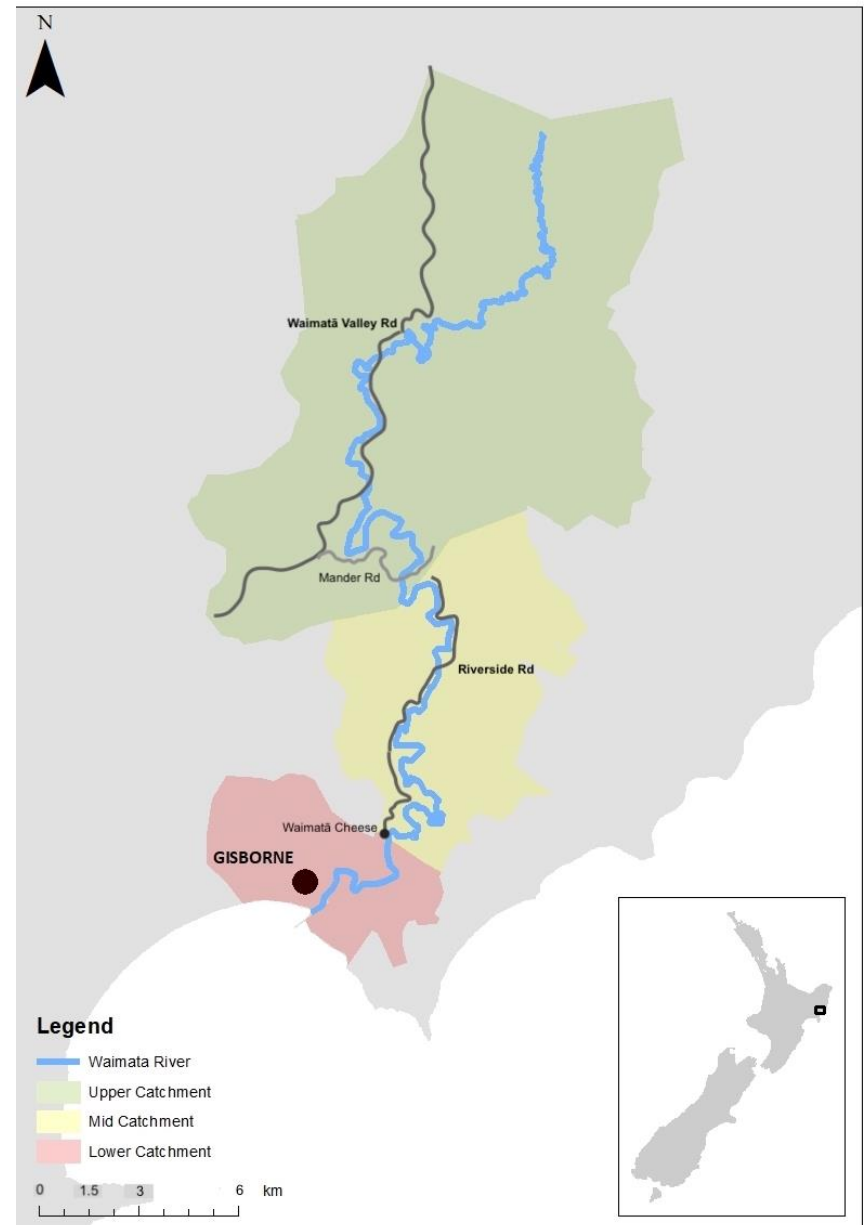
Let the River Speak



Tai Rawhiti based team members

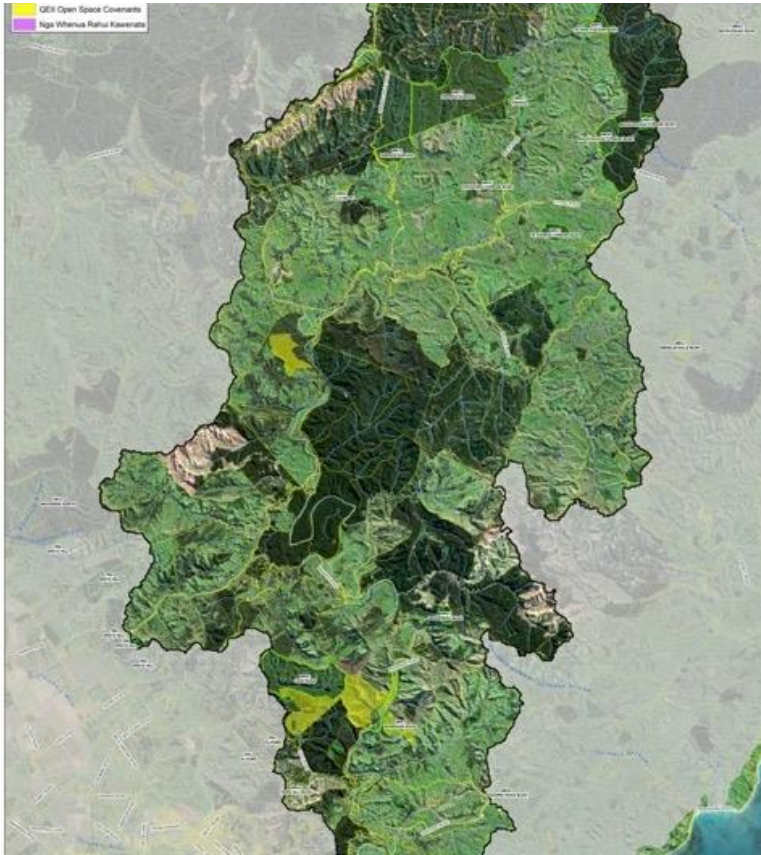


Credit: Charles Hendtlass



Credit: Elliot Stephens

Credit: Elliot Stephens



23,600 ha catchment

70% hill country sheep and beef farming

25% pine forestry

5% native vegetation



The good

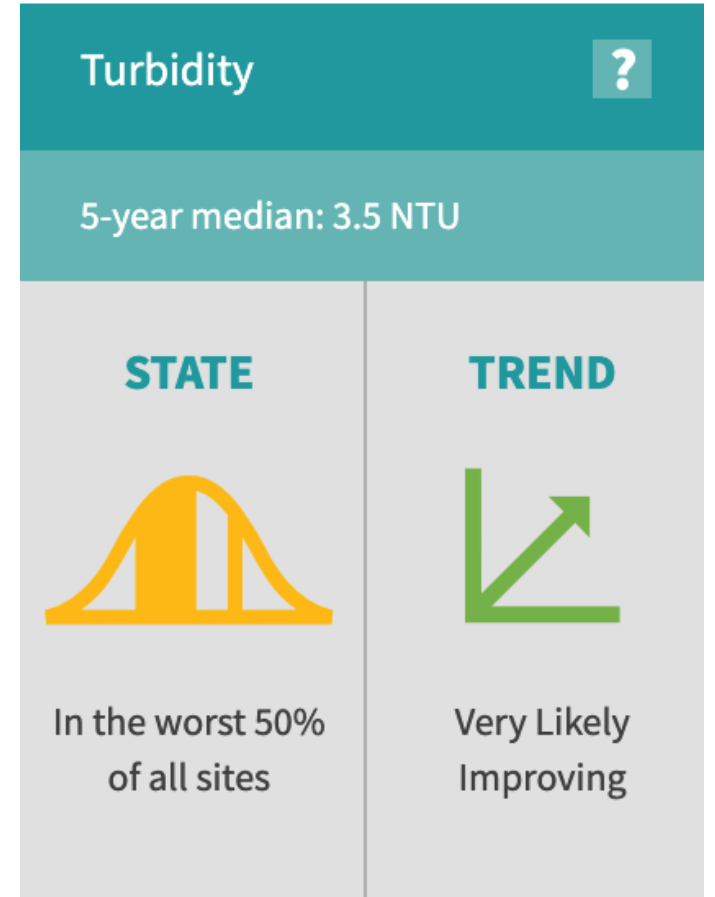
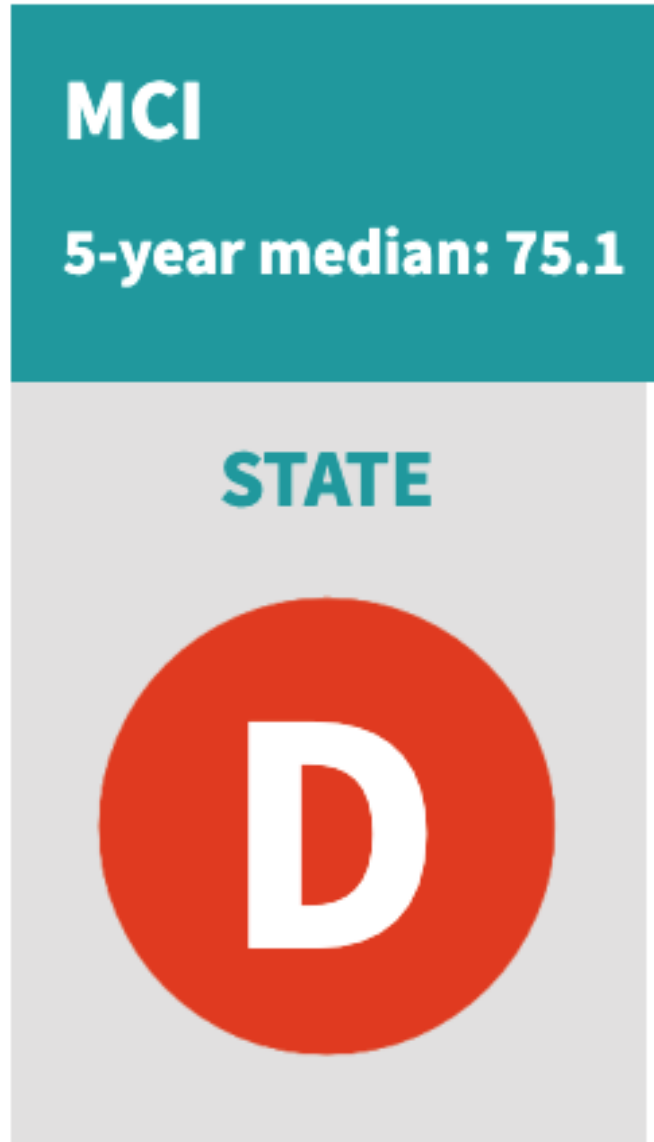
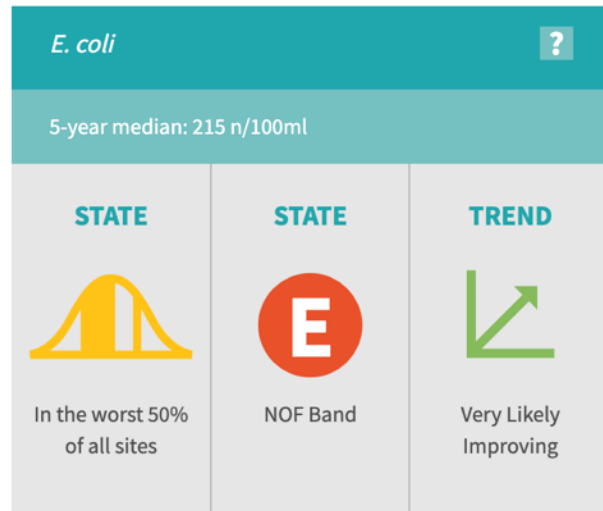
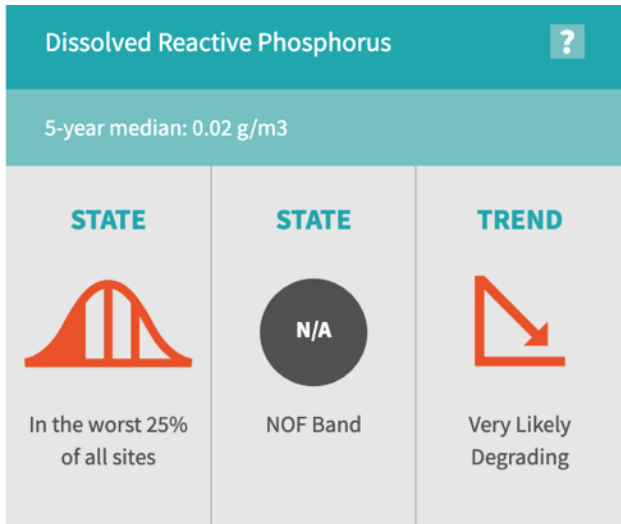
- Gisborne's most used freshwater recreational asset
- Heavily sedimented, eroding riverbanks, high *E.coli*
- Hugely impacted by forestry harvest – slash and sediment are “the gift that keeps on giving”



The bad



The ugly



Let the River Speak



Let the River Speak



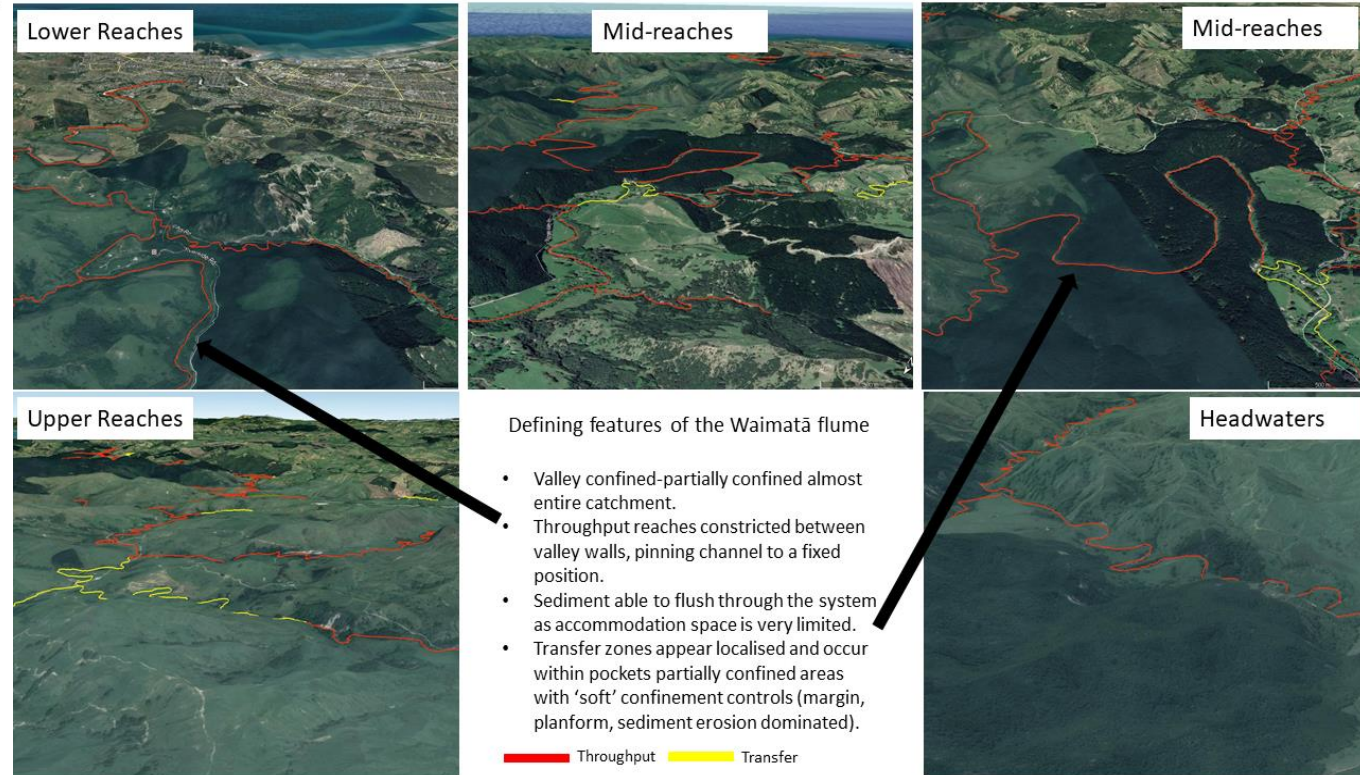
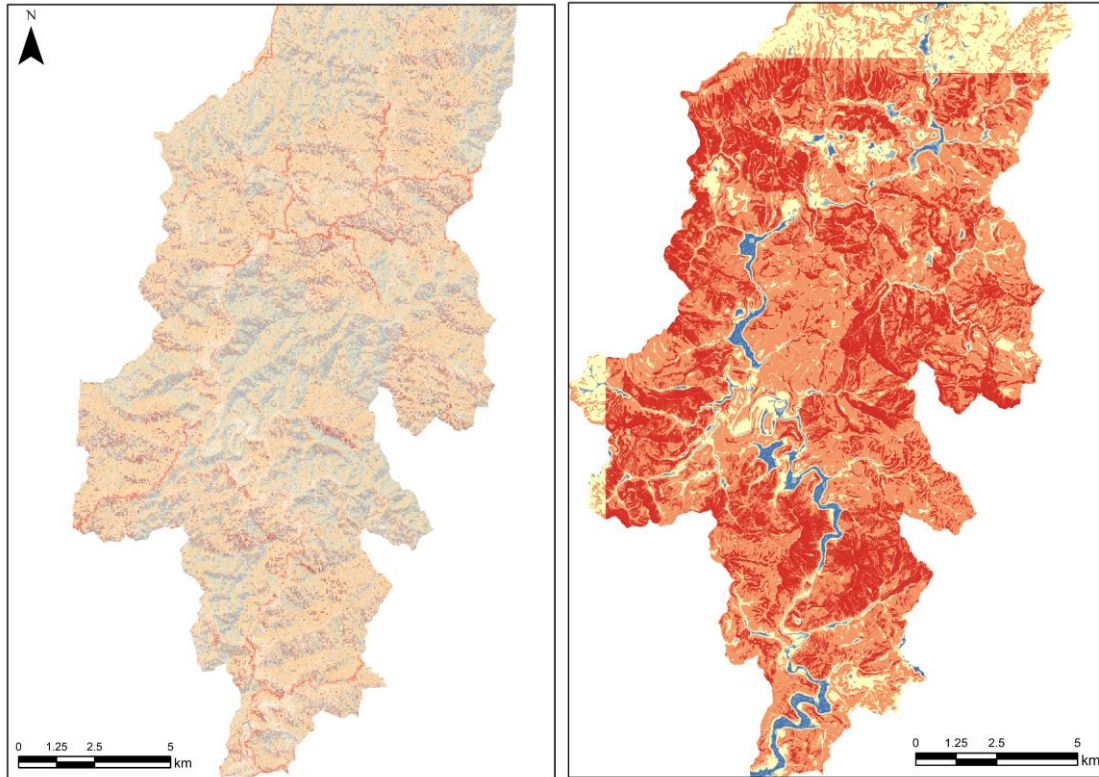
Let the River Speak



Let the River Speak

- 1. *Let the River Speak:*** Listen to the voices of the river to trace its emergence through space and time (wā), and discern the current state of the river, including sources of flourishing (ora) and ill-health (mate) – for the river itself, and its plants, animals and people.
- 2. *River Stories:*** Tell stories of the river community in images, artworks, workshops and writing, including the design, development and applications of a methodological approach to the conduct of a ‘River Ethnography’.
- 3. *A Digital River:*** Co-creating a digital Waimatā that links remote sensing and in-river sensors with field measurements and observations, historical movements, ancestral place names and stories, surges of sediment and pollution, exploring differing representations of the river.
- 4. *Let the River heal:*** Wai ora, te mana o te wai, mauri ora – what does a healthy, thriving Waimatā look like? Discover strategies that allow the river community to self-heal.

The Waimatā is a highly connected system, where the mountains are truly connected to the sea



- DEM, Connectivity Indices and CASCADE model show a highly connected river.
- Terraces restrict the space for adjustment on the valley floor.



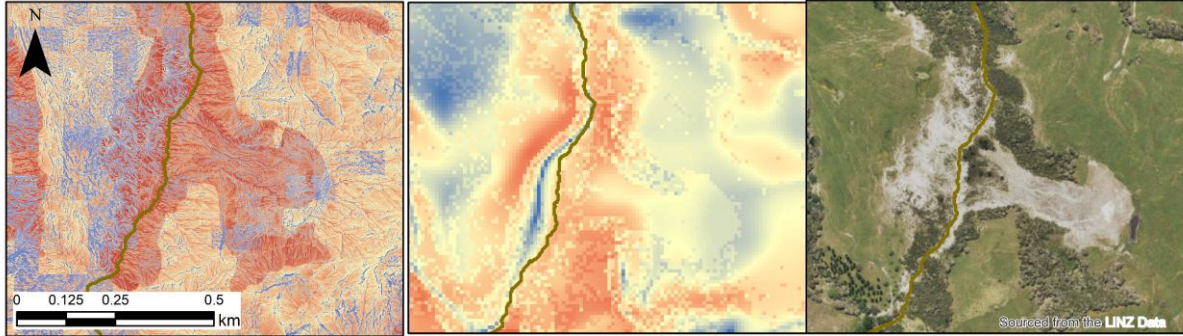
High lateral connectivity (hillslope coupling) combined with efficient transport pathway leads to debris delivery to the coast.



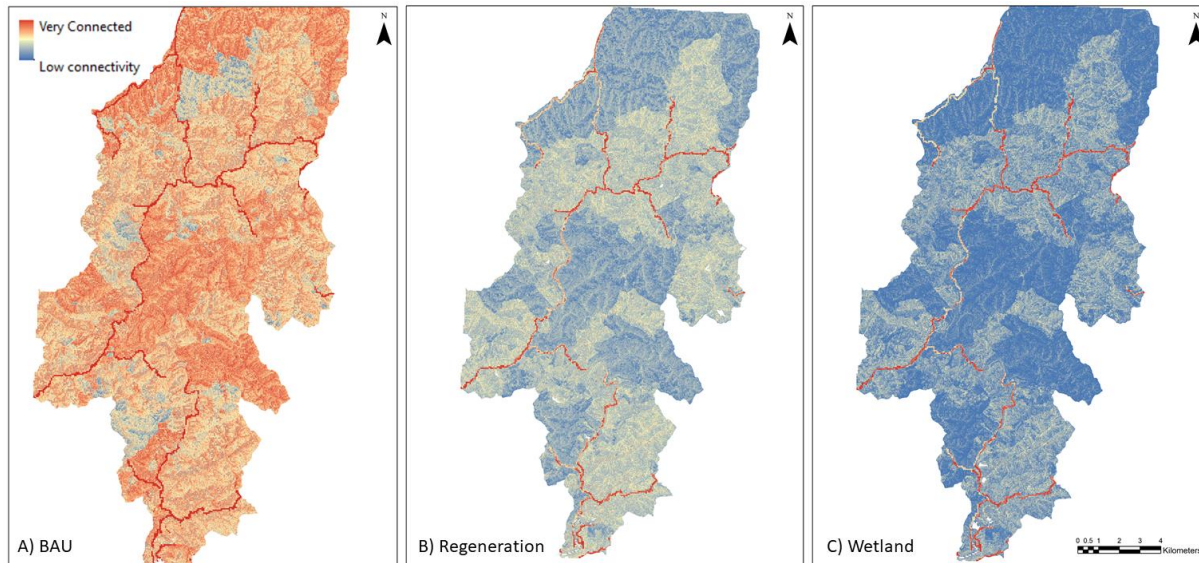
Image from Waikereru Ecosanctuary, Ian Ruru.

Discoveries

Identification of 'hotspots' – areas of sediment generation and deposition.



Land use scenarios



- Managing sediment problems at source is critical in highly connected river systems such as the Waimatā Catchment.
- Imperative to link forestry activities and farm management plans within a catchment scale sediment management plan.
- Unless geomorphic considerations are incorporated into catchment management plans, prospects for restoration initiatives will be less effective than they could otherwise be.
- Collaborative research by geomorphologists and the Catchment Group is needed to inform these deliberations.

Let the River Speak

- Actualising various 'river voices'
- Waimatā Catchment Restoration groups
- Collaborative
- Involved in catchment planning
- Using self-generated data & data provided from Tāmaki based team members
- Making room for rivers is as much a conceptual shift as a physical act



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