Where does microbial contamination come from?

Nick Ward ***Team leader – ecosystem response***

environment SOUTHLAND
REGIONAL COUNCIL
Te Taiao Tonga

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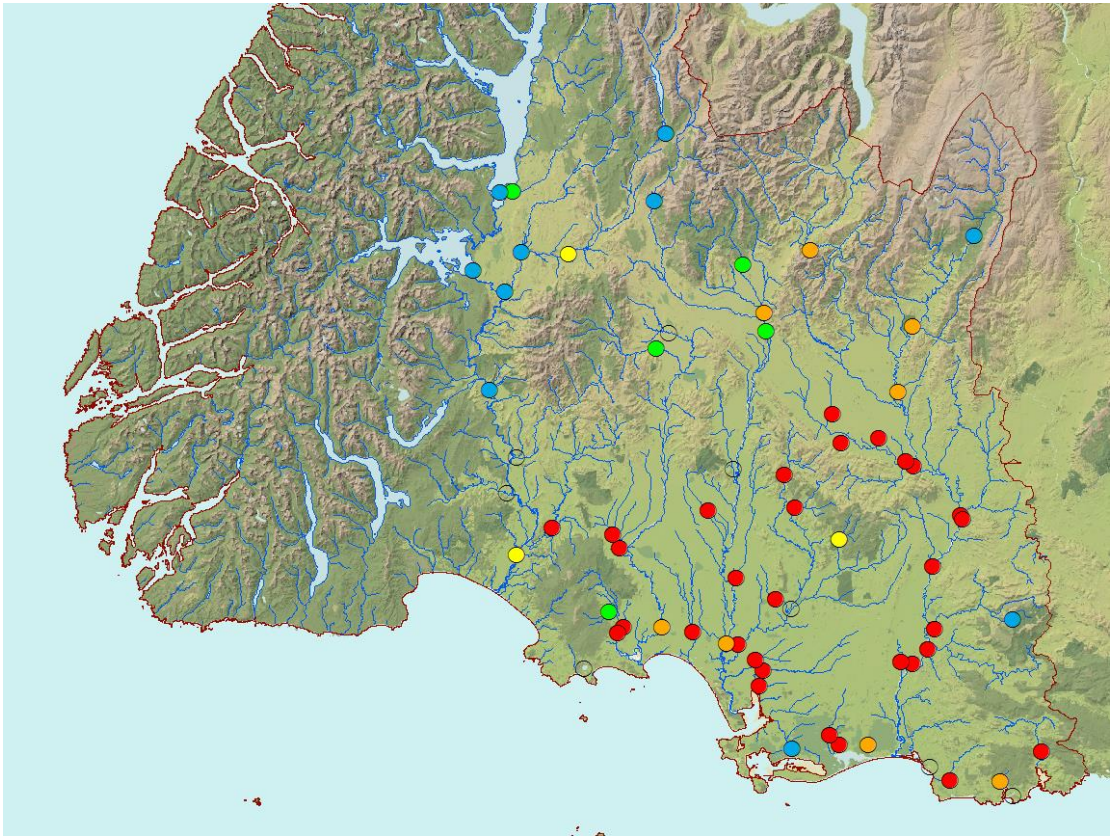
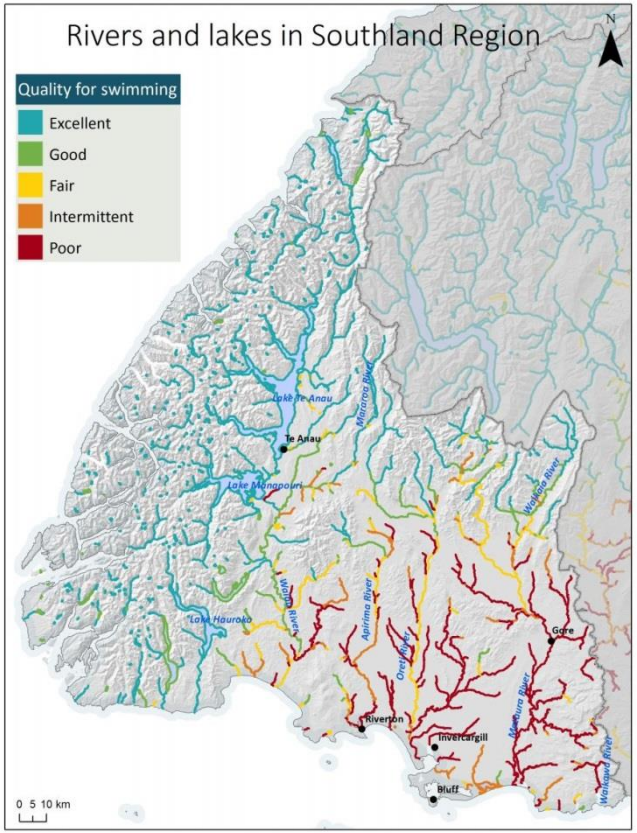
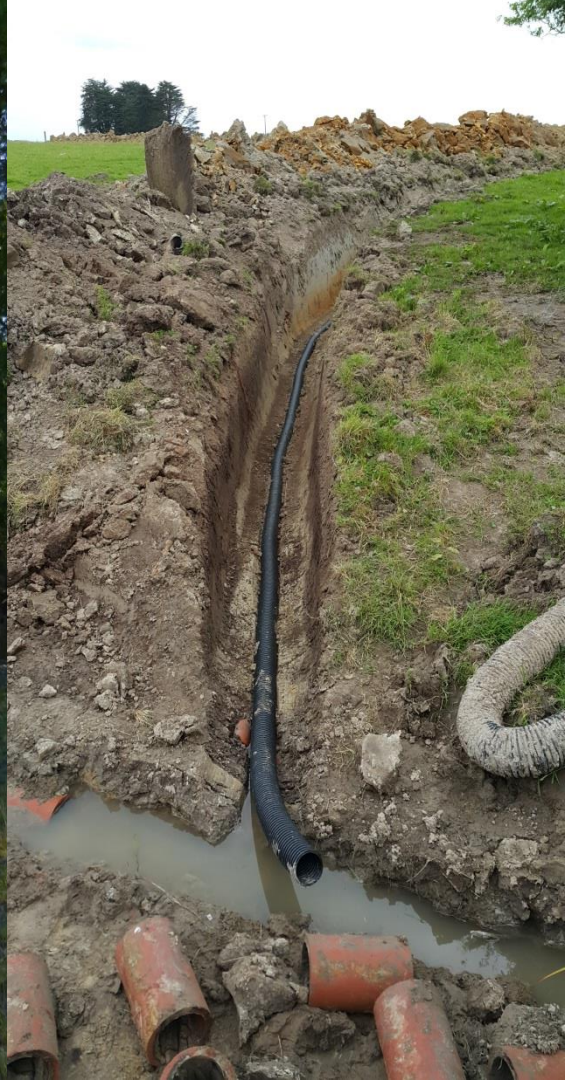
What's the problem?





Sources

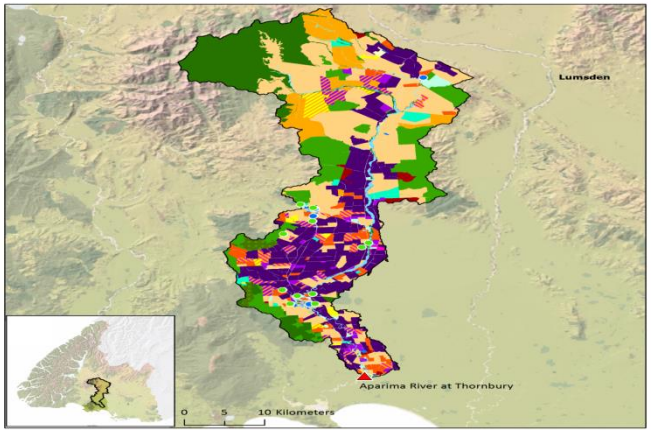
Pathways

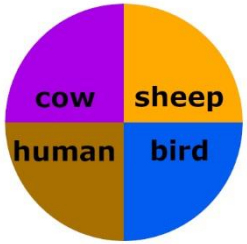


Sources of faecal pollution

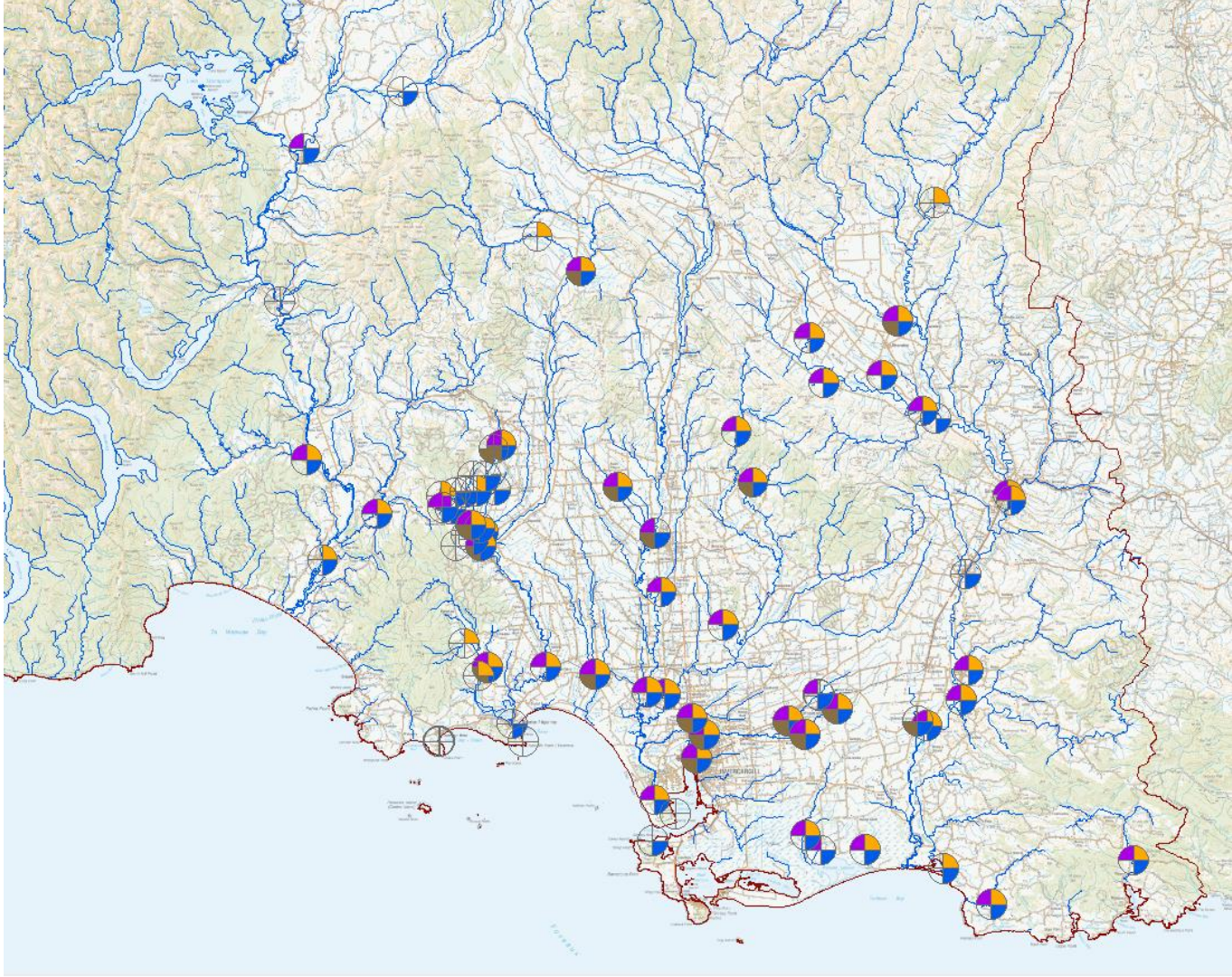
- Over 250 samples analysed
- PCR Markers, Campylobacter
- Human, ruminant (sheep or cow), wildfowl

simple
vs
complicated





Absence/Presence



Maximum sheep PCR copies

1 - 1,000

1,001 - 10,000

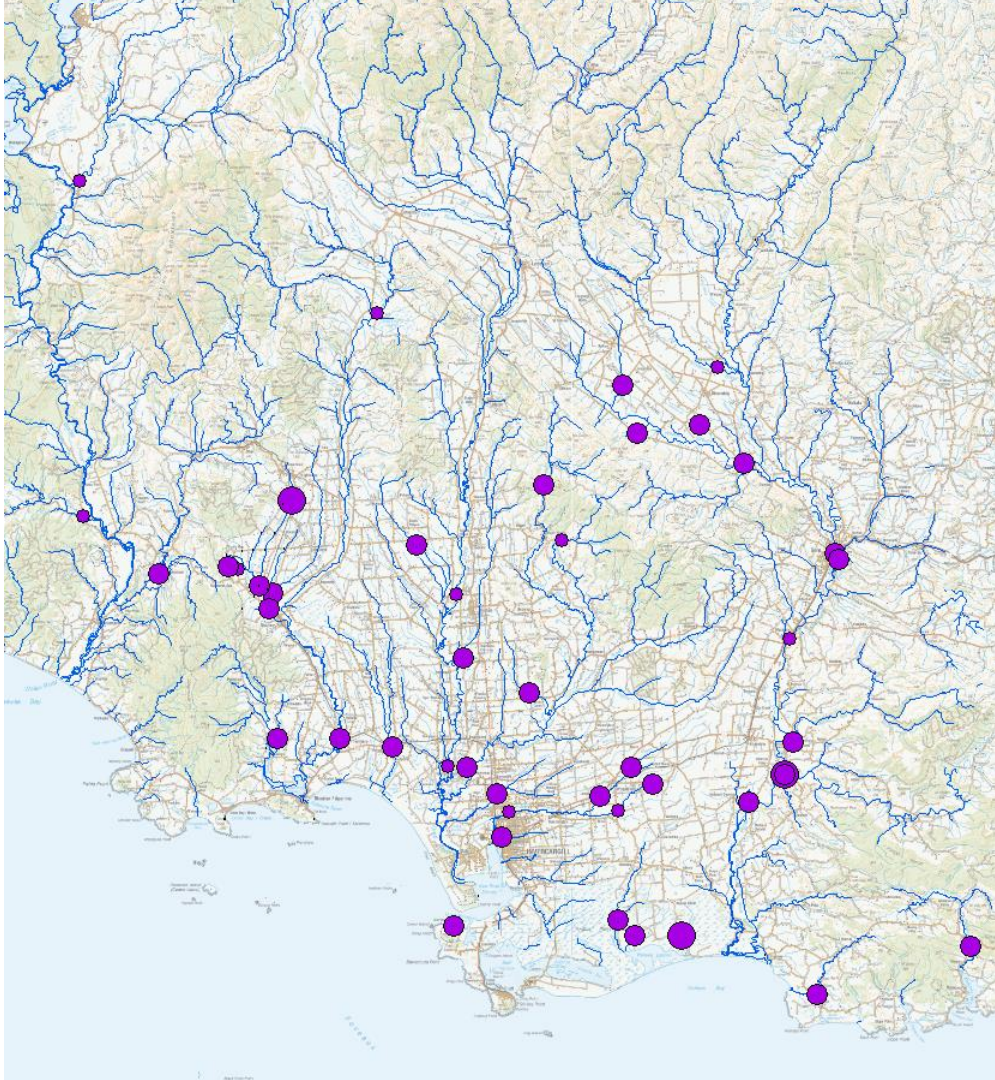
10,001 - 1,000,000

Maximum cow PCR copies

1 - 100

101 - 1,000

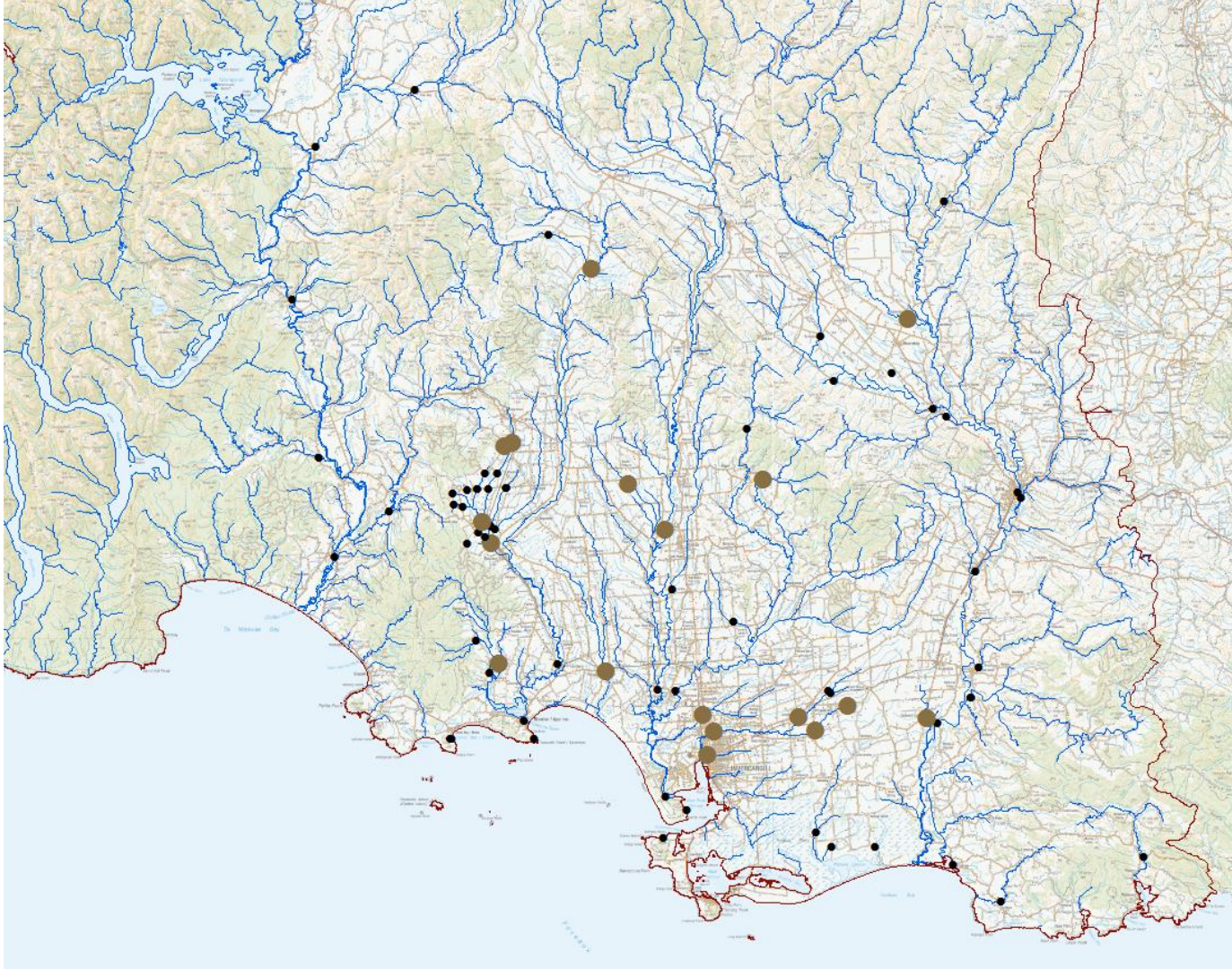
1,001 - 100,000



Human source

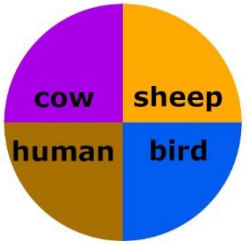
Absence

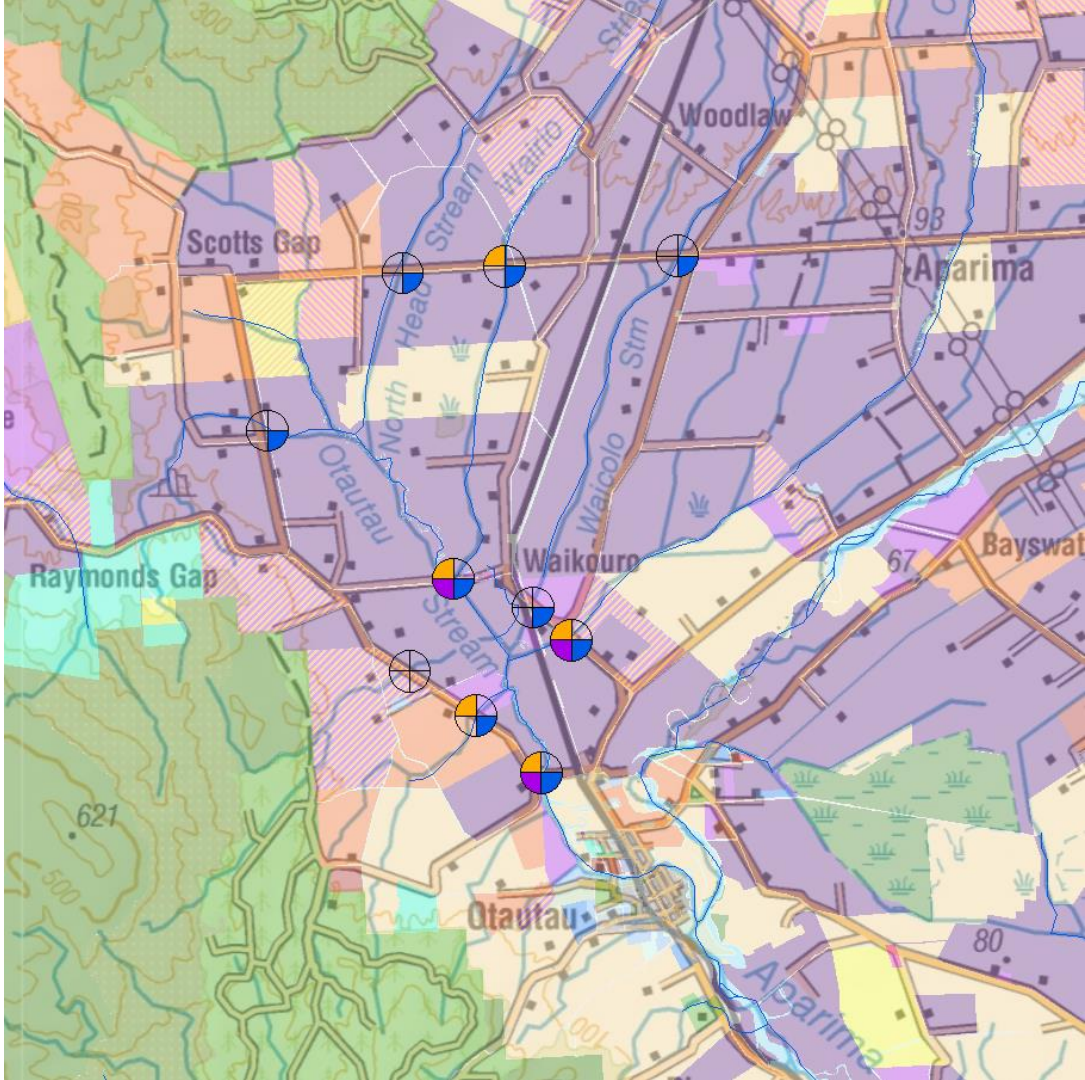
Presence



Otautau Stream

Sub-catchment study





Thoughts

- Can you target policy spatially?
- What about microbial antibiotic resistance?
- Flow separation and geochemical tracing

Integration

- Every site is different – use context

- Microbial is just the tip of the iceberg

….. but great segway