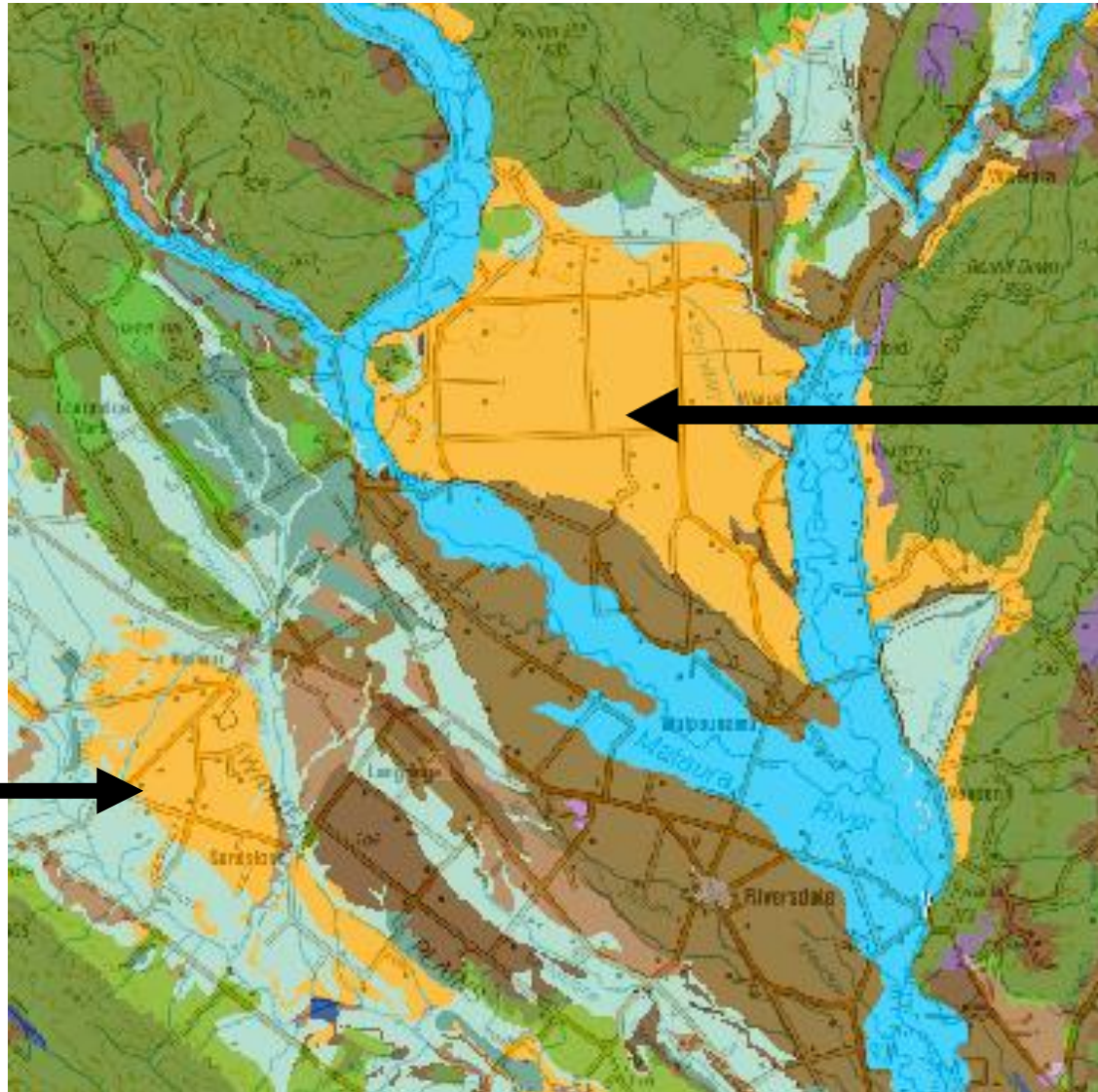


Old Matura Zone Map – Different Issues



Wendonside

Flat, Free draining, aerobic soils,
no surface water bodies or ditches

Black Swamp & Sandstone

Tile drains, anaerobic soils,
Imperfectly drained, many
surface bodies and ditches

Intro

Some major concerns for this catchment;

- Broad restrictions on land use without recognition of how well it is managed and not justified with appropriate scientific investigation.
- Capital erosion and restricted incomes, undermines generations of farm development & investment – flow on to communities.
- Landscapes are very different on a local scale, Balfour v Wendonside and on a farm scale, undermines PZ confidence.
- Rules based approach will restrict the economic and social development of community by dis-incentivising farmers to apply developing technologies.

Catchment Group

- Targets

- Meet ground water Nitrate level requirements
- Maintain swimmable rivers
- Initially focus on nitrate, in future other factors to consider, P & Ecoli

- Reflection

- Major concerns on representative bore data used to shape plan.
- Major lack of understanding of the impact of certain land uses groundwater aquifer quality and from aquifers to surface bodies on a local & regional scale.
- No standardised data to confirm that we do/don't meet standards.

Rules

- The group generally supports the idea of holding the line on water quality but disagrees that the following rules are in line with achieving these outcomes.
- There are many rules mentioned by the group in our submission, community has a broad range of land uses and believes any activity should be granted according to its environmental impact as per the RMA not bluntly denied without any discretionary consideration.
- Policy 9.3 – we oppose the wording *strongly discourage the granting of consents* – gives no provision for mitigation factors or further understanding of Nitrate risk.
- Oppose rule 22, new or expanding dairy farms
- Oppose rule 23, intensive winter grazing rule
- Oppose rule 25, cultivation on sloping ground

How to achieve Water Quality objectives?

- Need a better understanding of the landscape...water quality and farm practise relationship. To fix a problem, need to understand it using a transparent & standardised, credible sampling regime.
- Establish standardised water quality expectations...ground water & surface water.
- Consultation between ES & CG to determine the sustainable nutrient loading in CG, look toward industry body for resource. Effects based...not determining land use.
- Third party to transparently monitor water quality in association with both CG & ES.
- CG to extend industry specific expertise and coproduce knowledge in local context.

Sampling Plan

- Worked with ES and external hydrologist to create ground water monitoring model to present to CG.
- Plan to get an understanding of the areas water origin, water quality & relationship with agriculture
- Evaluate groundwater nitrate in all aquifers in 3 transects from recharge to discharge area aligned in groundwater flow direction.
- Also evaluate groundwater discharge at transect ends (river).
- Use same transects to evaluate origin and timing of groundwater recharge by testing for environmental isotopes: O18, H2, and H3. The 'finger print' to identify the source of the water....ie alpine or local recharge.
- Evaluate origin of nitrate along transects using nitrate isotopes and other advanced techniques. Is it animal, human or some other form of legacy.
- Evaluate agricultural practices along transects (current and historical and future).

Wendonside Groundwater example

Cattle Flat

(Recharge Zone)

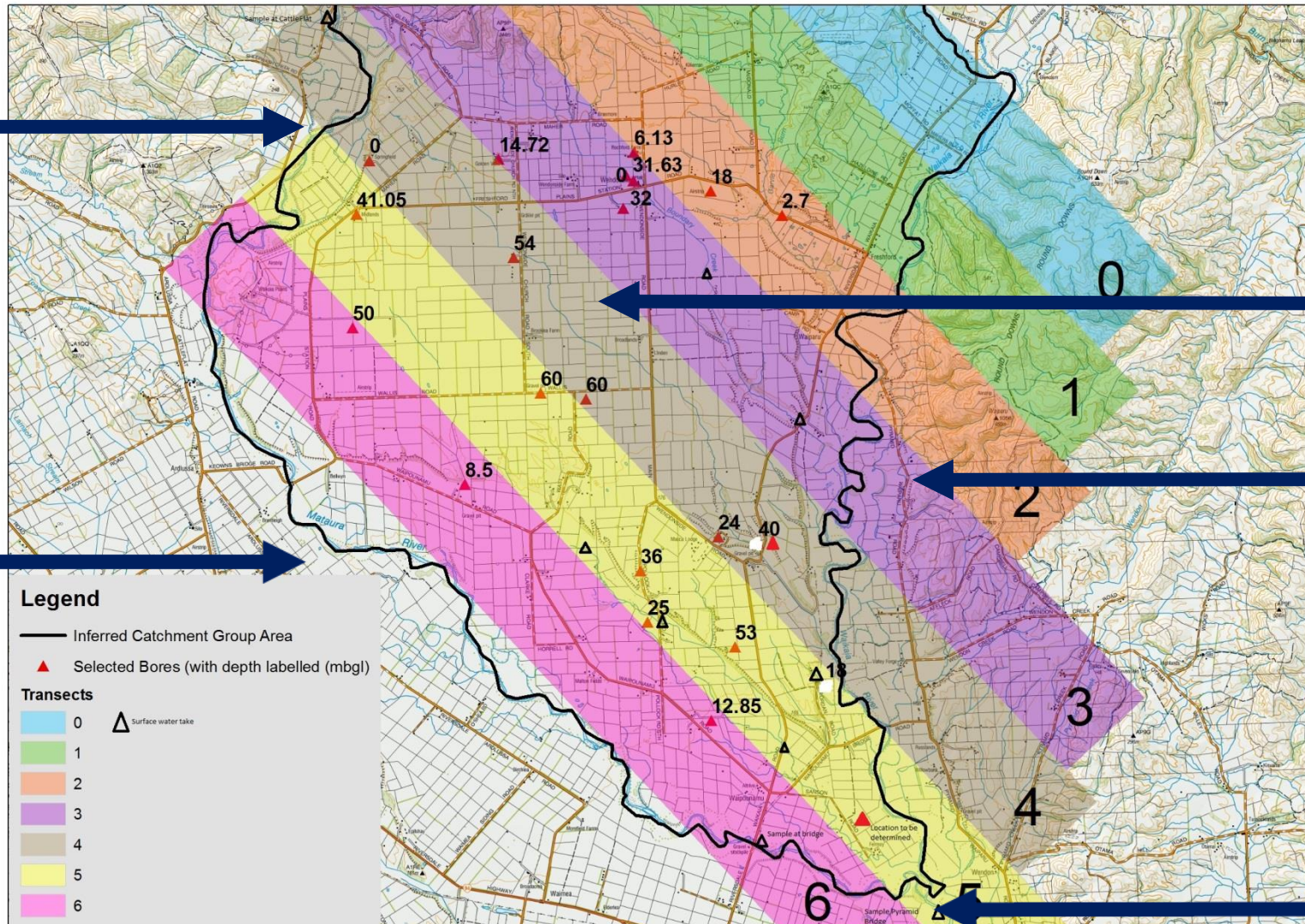
Mataura River

Groundwater Zone
(Mid Point)

Waikaia River

Discharge Zone

Mataura & Waikaia
River Confluence



Good Management Practice -

- **Improved effluent practise** – spread a little effluent over a large area, spray low rate application.
- **Crop Calculator** – strictly only apply what required to achieve yield.
- **GPS Controlled Traffic** – Avoid sensitive areas, proof of placement.
- **Catch crops** – better effluent utilisation, deep rooted cereals or beets.
- **N timing** – soil moisture monitoring instruments in the root zone.
- **Reduced tillage** – improves soil structure and soil water holding capacity.
- **Feed pads** – capture nutrients during saturation periods, large outlay.
- **Variable Rate Fertiliser** – High intensity soil testing, results overlaid on GPS map for fert spreader to follow applying variable rates.
- **Irrigation** – Ensures plants are always growing capturing more nutrients than those sitting dormant, increases soil carbon levels improving water holding capacity/reducing soil leaching. Allows for low rate spray effluent application over large areas.

Catchment Groups - Community Co-operation

- CG amalgamates localised issues, displacing the need for pz's/broad & ineffective planning rules.
- Reduced duplication and over-lap, as demonstrated in this forum.
- Break down gap between coal face & legislators, community feel apart of CG & CG feels apart of legislation.
- Provides forum cooperation of interested parties council –farmers–conservationists–industry–recreation–public.
- Prescriptive rules set for lowest common denominator will disenchant majority, make farmers part of the solution.
- Farmers concede we haven't always got it right, we DO care, we HAVE made steps, we DO want to get right, we NEED the opportunity, we NEED community support, we NEED input.
- Interested parties are not mutually exclusive...farmers are consumers, recreators, conservationists.
- Farmers use generational models, interested in long term sustainability, not speculators exploiting land & water for short term gain.