

*“New Zealand’s economy, ecosystems, community health, and social and cultural values depend on adequate water quality in sufficient quantity. The abundance and quality of our water and ‘clean green’ perceptions of New Zealand give us a competitive advantage in primary production, energy generation and tourism.*

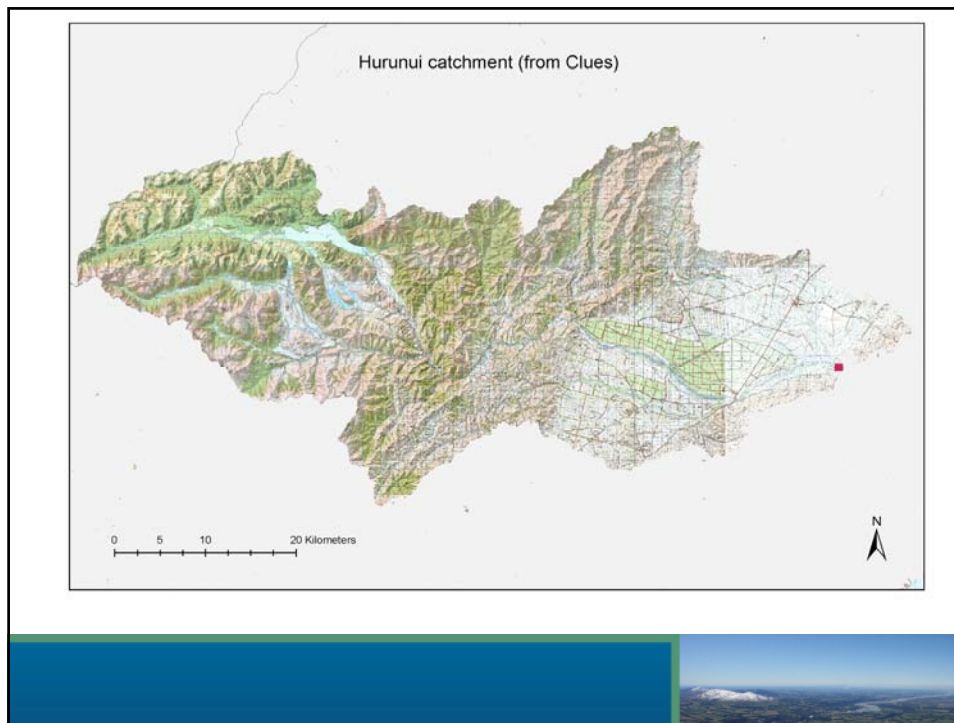
*Sound water management is not solely an environmental issue, it is essential to enable us to pursue sustainable economic and social development.*

***One of the most significant challenges to be faced is the strong link between some forms of land use intensification, water use and water quality decline.”***

New Start for Fresh Water – Office of Minister for Environment (2009)

## What is the LU & WQ Project?

- Project to identify a range of preferred approaches for managing the impacts of land use on water quality
- Canterbury wide
- Case study approach (Hurunui)
- Collaborative project - primary sector, environmental groups and other key stakeholders.
- Governance group – includes key stakeholders representatives
- Strong links with the CWMS



## Our expectations

- that we will end up with a range of solutions which are workable & are generally supported
- recognition of environmental limits
- recognise social, economic, cultural & environmental values
- some trade-offs may be necessary, but if there are the reasons for these will be open and transparent

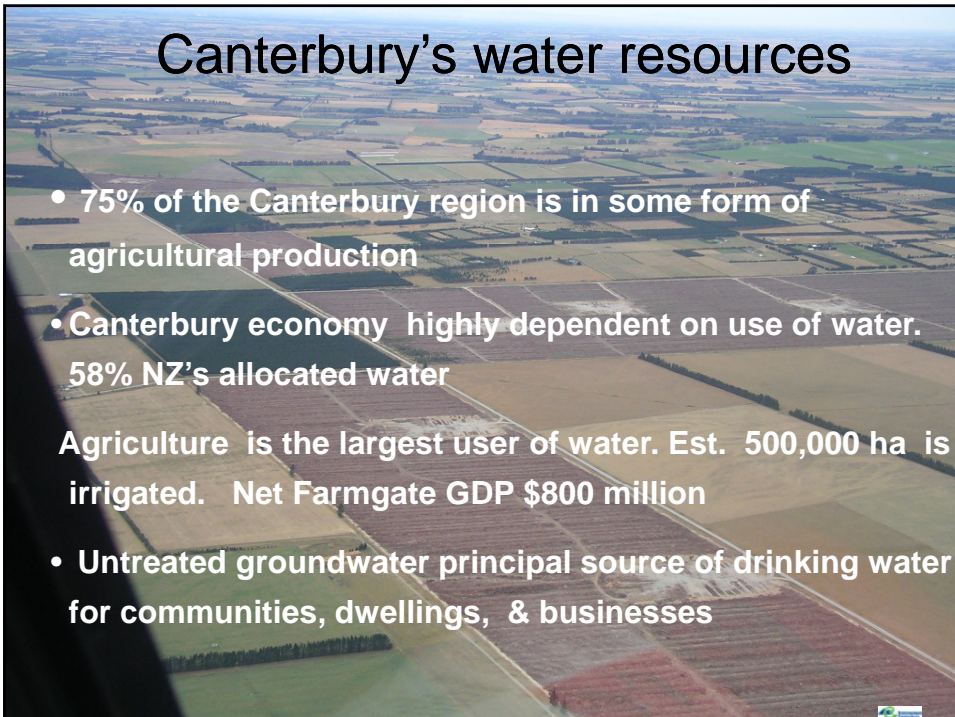
## Why the Hurunui Catchment?

- Good history of working with people in the Hurunui to address issues (e.g. Pahau)
- It is generally representative of much of Canterbury's surface and groundwater conditions
- The boundaries are well defined
- The hydrology is well understood , and
- There are good water quality records for the area

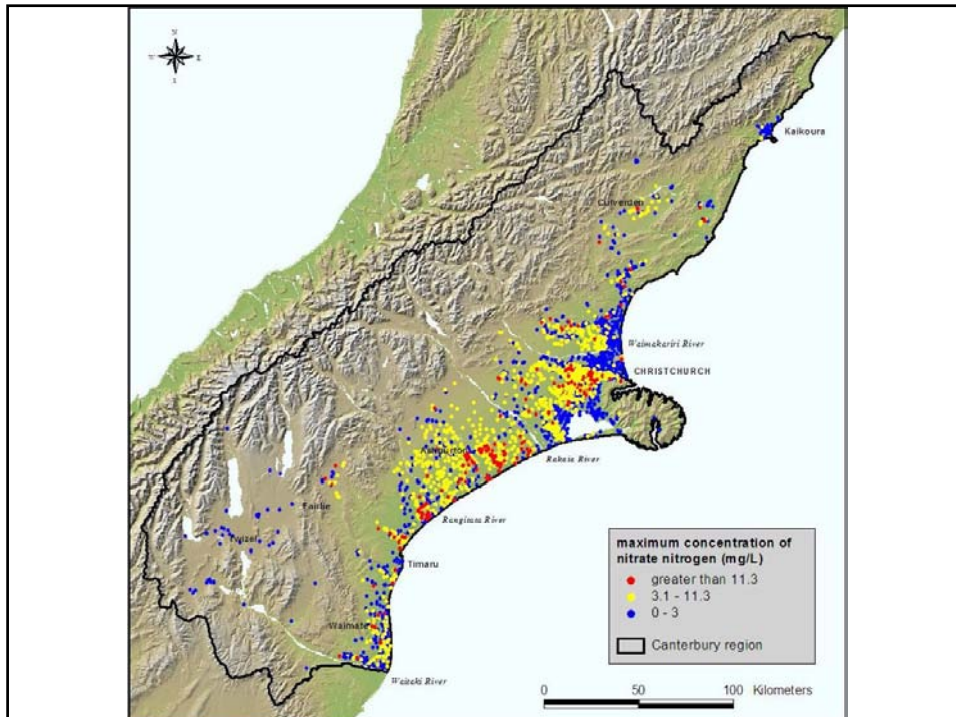
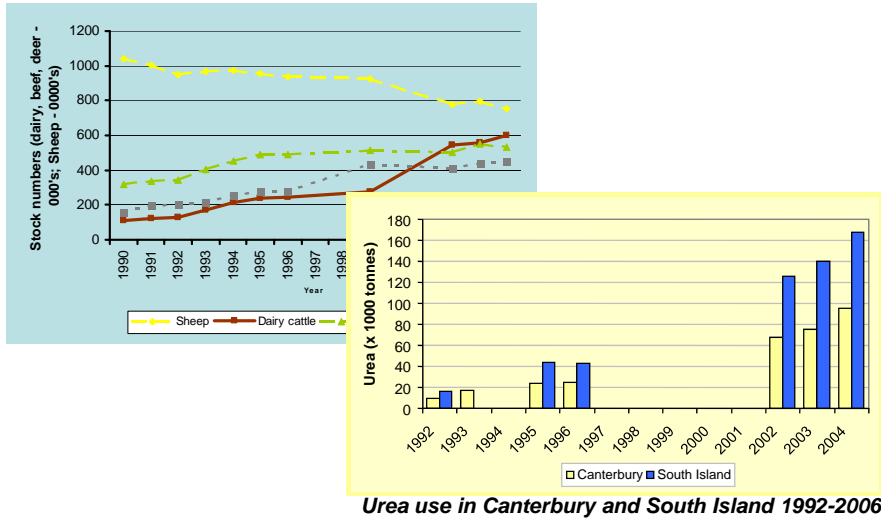


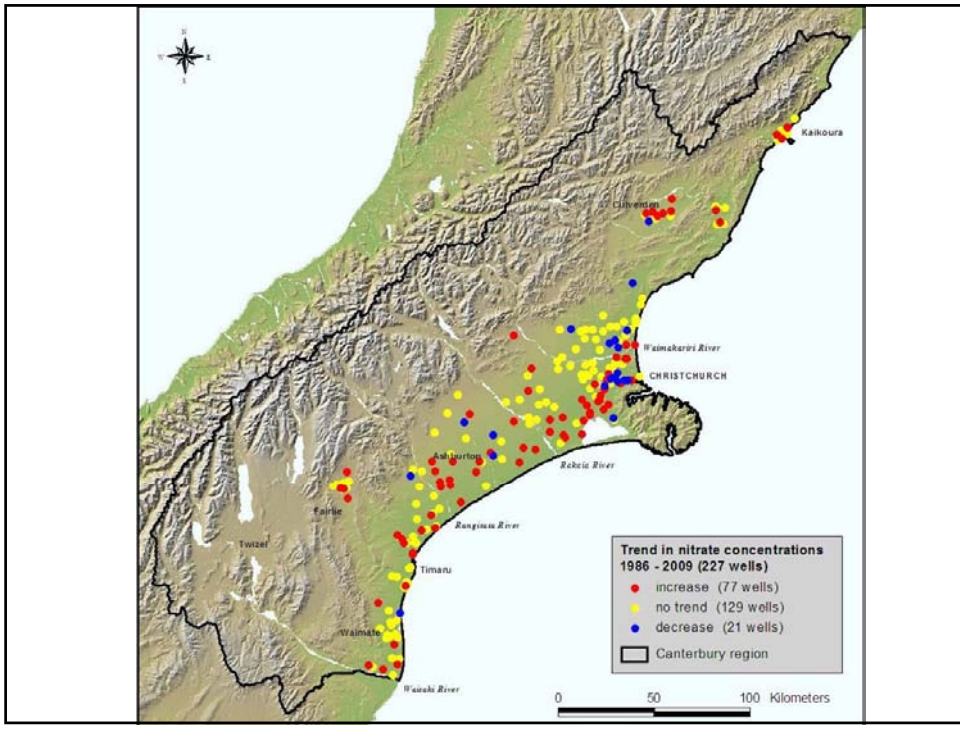
## Canterbury's water resources

- 75% of the Canterbury region is in some form of agricultural production
  - Canterbury economy highly dependent on use of water. 58% NZ's allocated water
- Agriculture is the largest user of water. Est. 500,000 ha is irrigated. Net Farmgate GDP \$800 million
- Untreated groundwater principal source of drinking water for communities, dwellings, & businesses

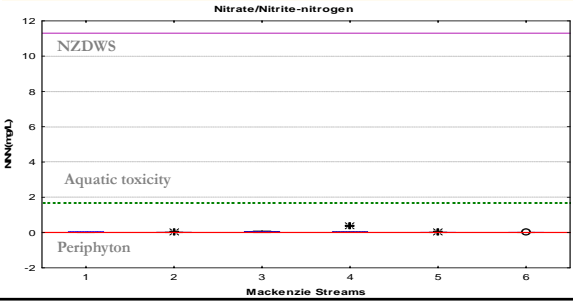
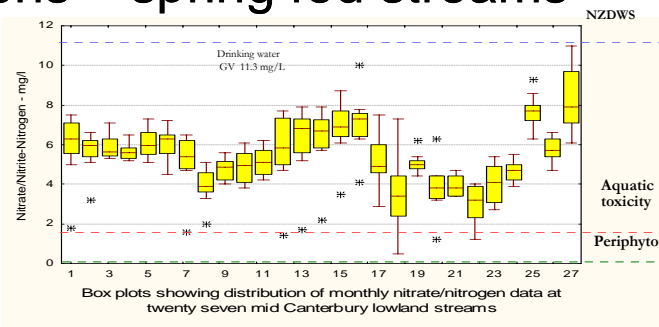


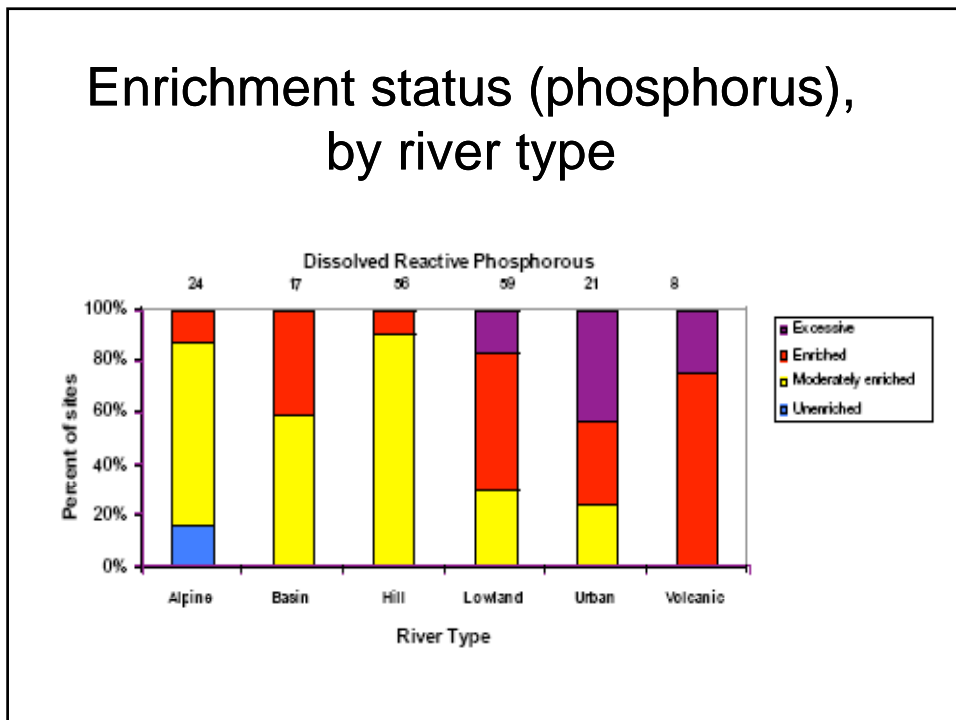
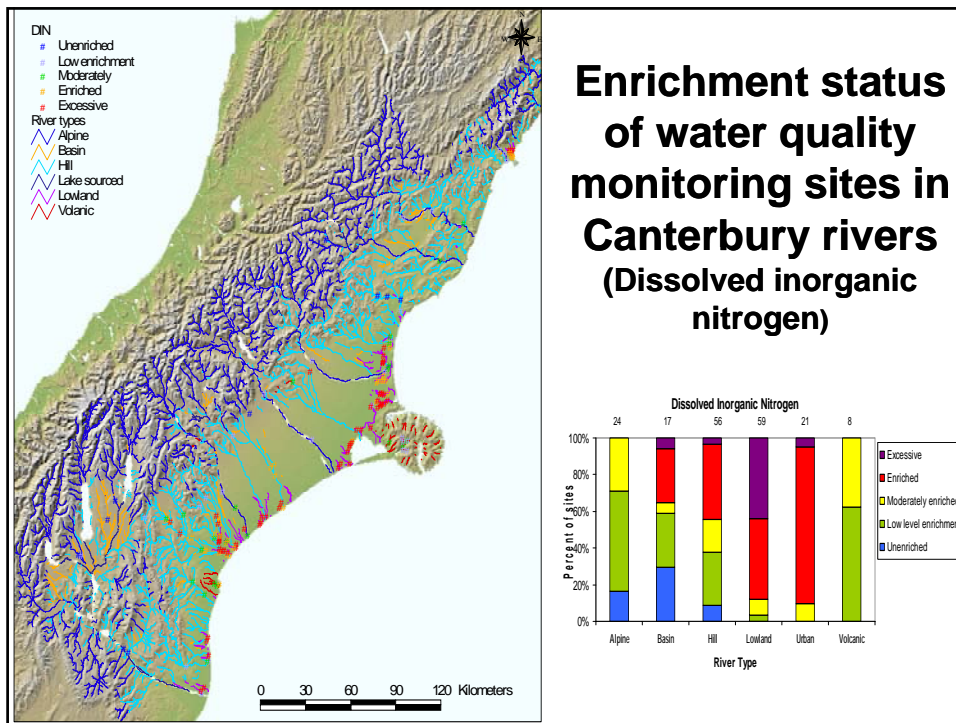
## Indicators of land use change



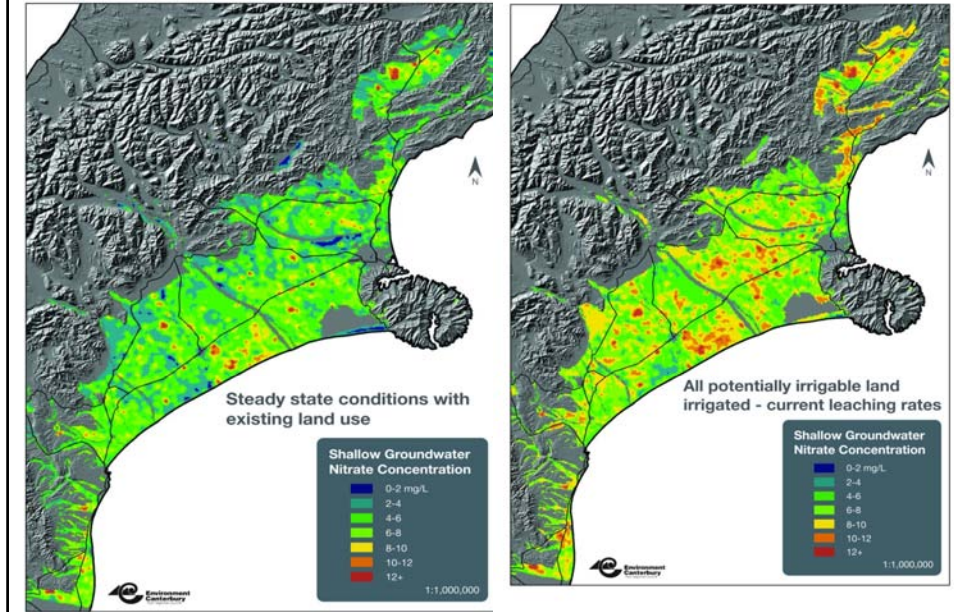


## Groundwater – surface water interactions – spring fed streams

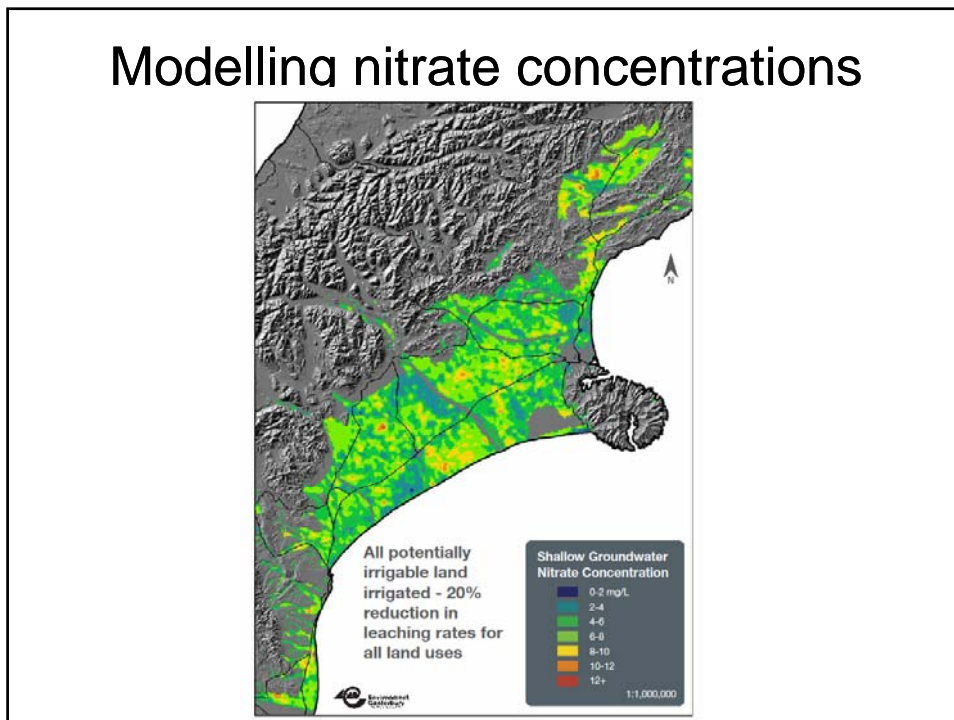


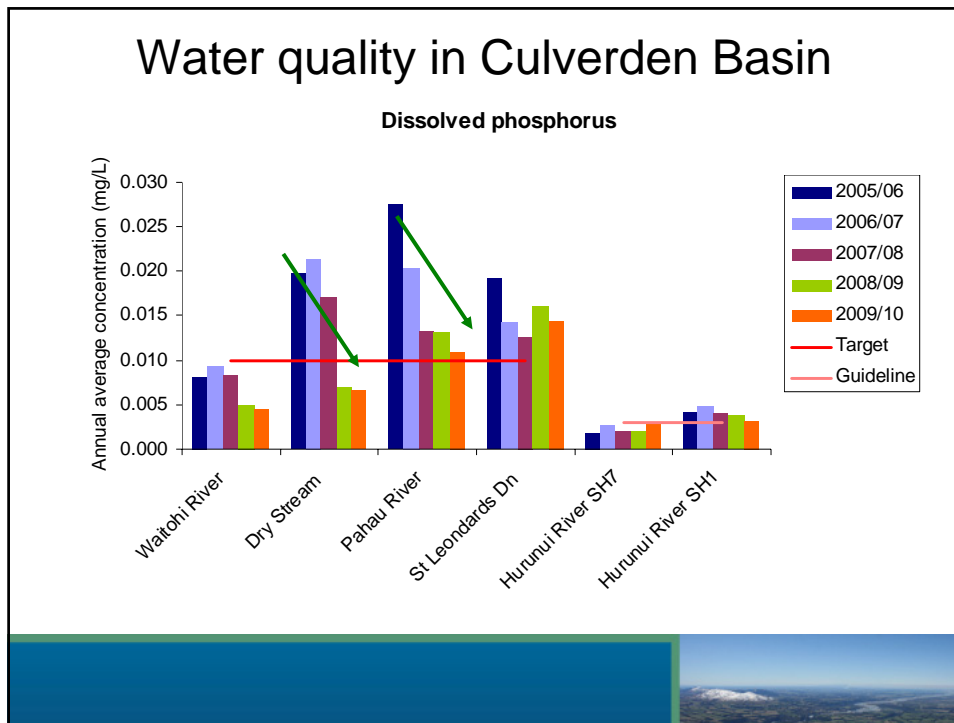


## Modelling nitrate concentrations



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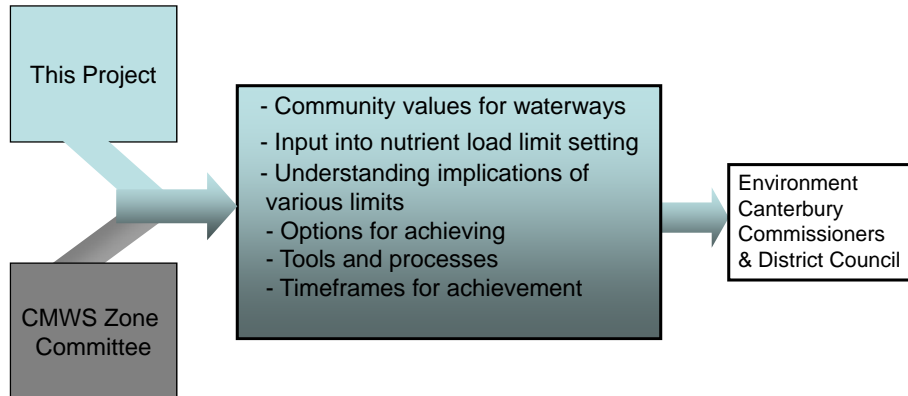




## Hurunui case study

- Catchment workshops
  - 4 workshops held between late August & early December
  - Follow a deliberative process – land, water , people focus
  - Workshop participant selection – responsibility of individual key stakeholder groups.
  - Science work, economic studies and on-farm analysis will inform the discussions

## What the community will be discussing



Ultimately, ECan/council decides, but community has strong influence

Extent of influence = extent of agreement

## Decision making process?

- **Outcome**
  - Document that identifies a range of preferred approaches for managing the impact of land use change on water quality (By March 2011)
  
- **Decision making**
  - Final responsibility lies with Environment Canterbury's Commissioners
  - Based on recommendations from the project Governance Group