



# Managing Land Use Intensification

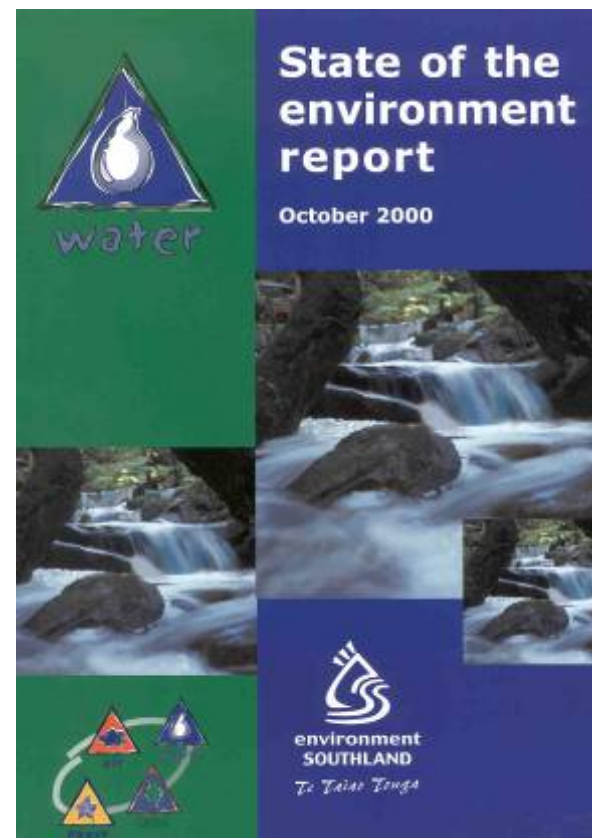
*Rachael Millar, Environment Southland*



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# Overview

- Environmental **P**ressure
- Environmental **S**tate
- Environmental **R**esponse



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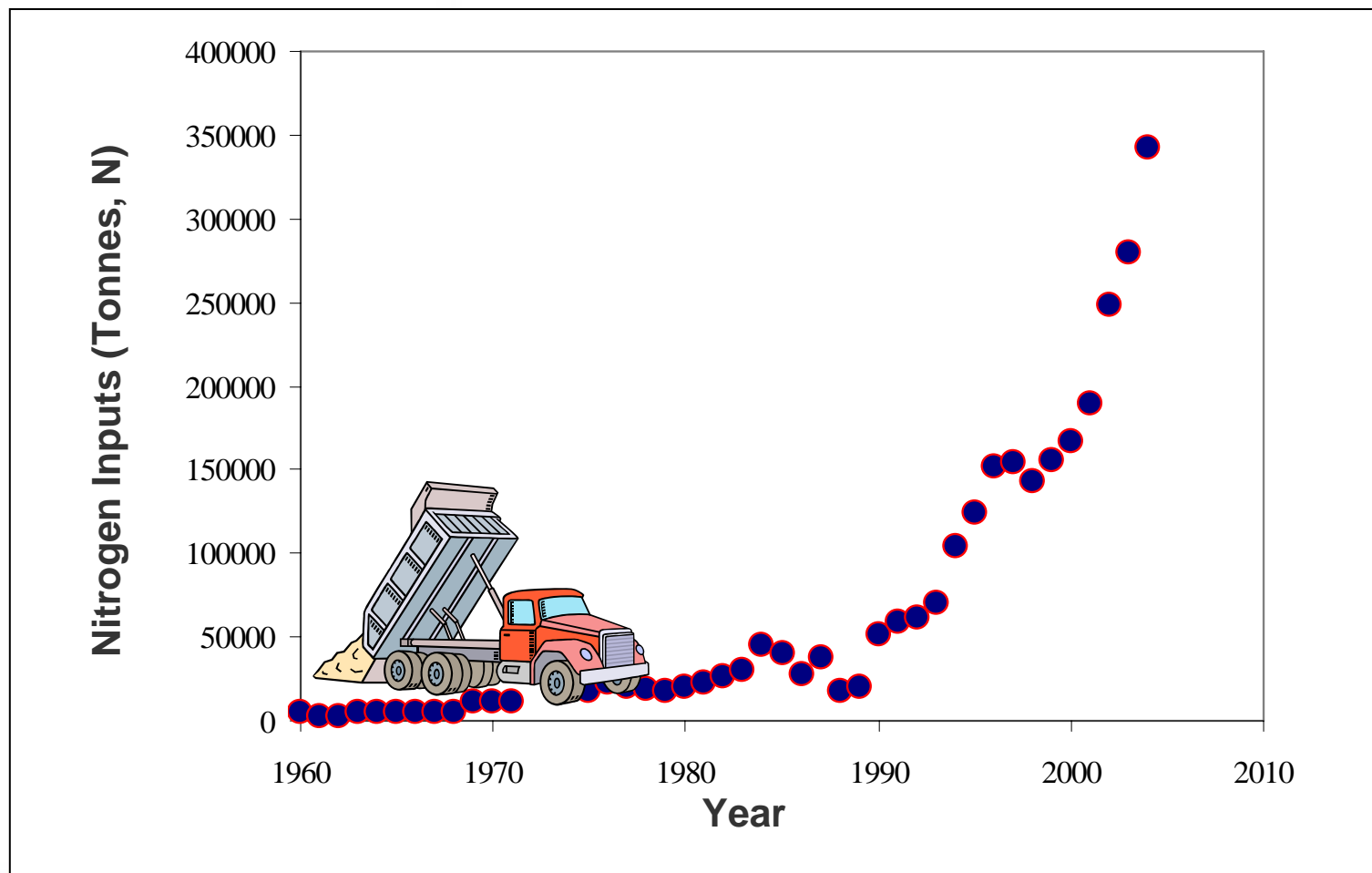
# Pressure/state: national context

- Environment NZ, 2007
  - Increasing trend of intensive pastoral land use.
  - This has resulted in water quality degradation, increased greenhouse gas emissions, water scarcity, changes in soil health and loss of biodiversity in some areas.
- *National trends mirrored in Southland.*



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# Agriculture: NZ's fastest growing sector (> 4% p.a.)



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# Pressure: Southland context

- Significant land use intensification.
  - N from livestock waste contributes 5x the amount of N from fertiliser.
  - Cows excrete 7x the amount of N and P as sheep (ewes).
- Land use intensification has led to a significant increase in fertiliser use, particularly lime and N (urea).
  - Southland is one of highest users of urea, diammonium phosphate (DAP) and lime nationally.
  - The use of lime increased by 50% between 1996 and 2003 while the use of urea quadrupled.
  - Total fertiliser tonnage increased 11% between 1990 and 1996 and a further 50% between 1996 and 2002.

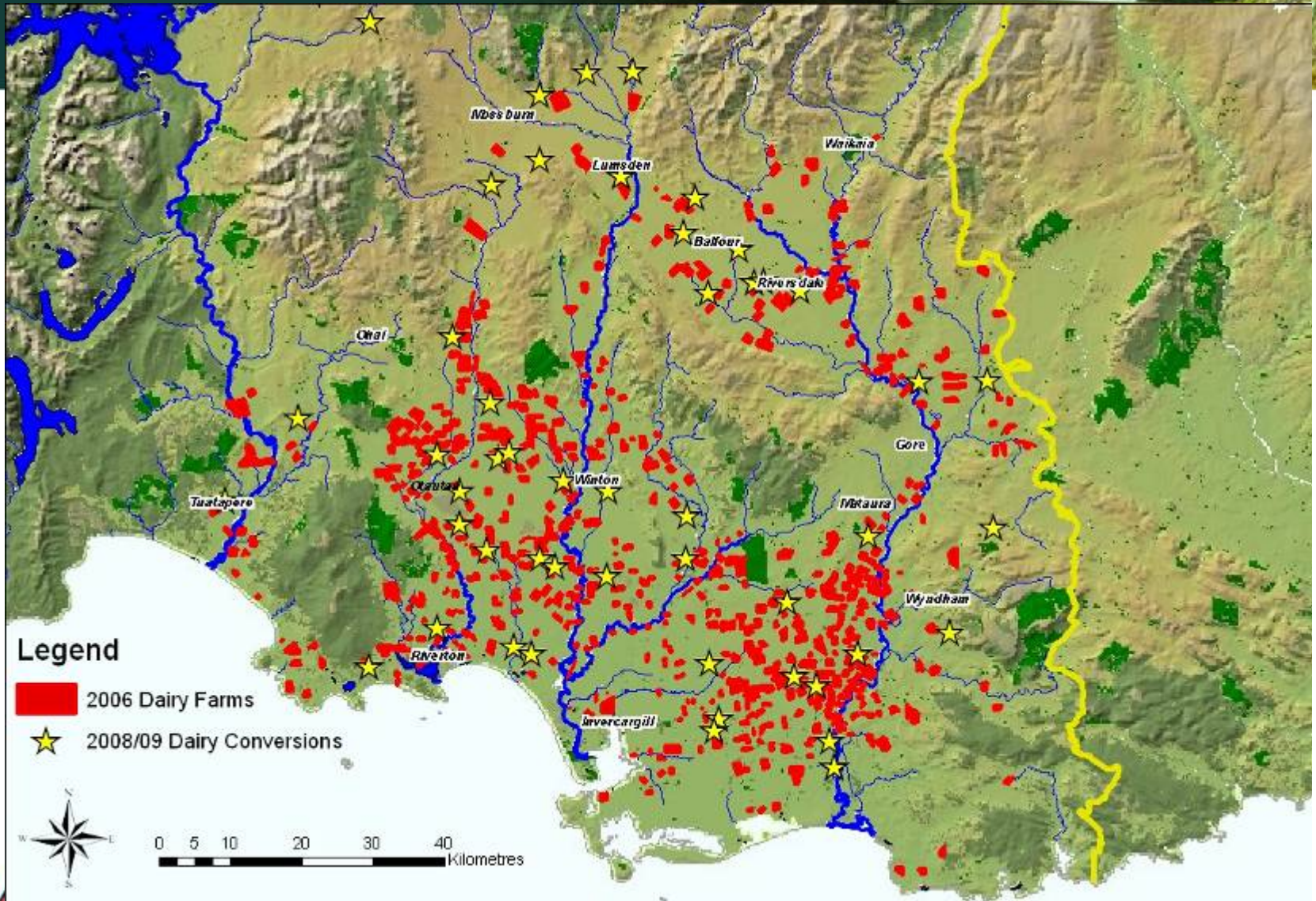


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# Pressure: Southland context

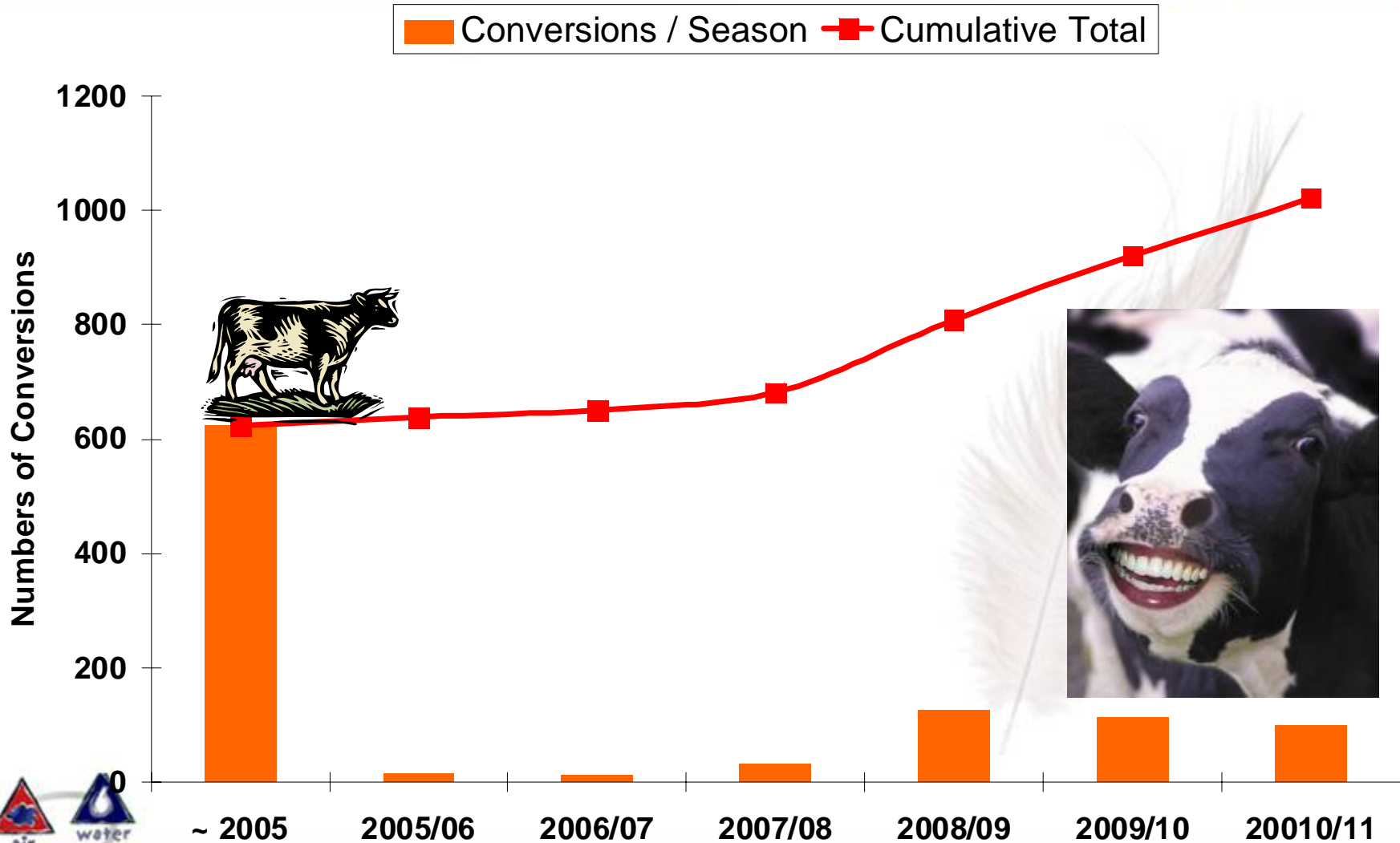


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# Pressure: Southland context



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# State: Southland context

- Water quality in most agricultural catchments in Southland is degraded, and there is evidence that waterways are deteriorating further.
- The quality of our groundwater is deteriorating and “hot spots” are becoming increasingly evident.
- There is clear evidence from Southland, and elsewhere, to show that intensive land use can have major impacts on water quality and aquatic ecosystems.
- The potential impacts of land use intensification need to be seen in the context of the history of water quality issues in Southland.



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# State: Southland context

- Degraded water quality is neither a new issue, nor solely a dairy industry issue.
- Even if we were to halt all intensive land use tomorrow, our water quality would continue to decline in some areas, just because the effects of the land use of the past 30+ years will be felt in groundwater systems for some time.
- There is no such thing as “them and us”. To some extent we must all accept some responsibility for the degradation of our water resources and freshwater ecosystems. Therefore, we have a collective responsibility for fixing the problem.



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# Response

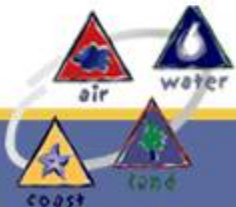
- The effects of land use intensification are being responded at a number of levels and by many agencies:
  - Central government
  - Local government
  - NGOs e.g. industry, science providers
  - Tangata whenua
  - Community groups



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# Response – central government

- Key responses SWPOA and NZETS.
- Hon Trevor Mallard, Feb 08 on the proposed NPS:  
*...will insert national consistency into local decision making...not the topic for a soft policy...need to place a line in the sand...rivers clean enough to swim in within a generation...*
- Simon Upton, July 08 on the NPS:  
*...ranks as one of the most insipid and evasive attempts to grapple with a major environmental policy issue...avoids the hard issues...hopes to palm them off to local government...*



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# Response – local government

- Local government has taken a predominantly a non-regulatory approach to date.
- Notable exceptions to this approach have occurred in Lake Taupo and the Rotorua Lakes catchments and the Manawatu/Wanganui region.
- Other regional councils such as ECAN and ES currently undertaking policy development processes.



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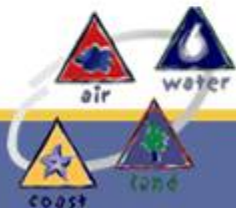
# Response – local government

## Taupo and Rotorua Lakes

- “Grandparenting” approaches with nutrient leaching capped at pre-rule levels.
- Computer models used to benchmark the total amount of nutrients leached from the property.
- Equity issue – “good” farmers punished, “bad” farmers rewarded.

## One Plan

- Requires intensive farms in target catchments to obtain resource consent to operate (and new conversions throughout the region).



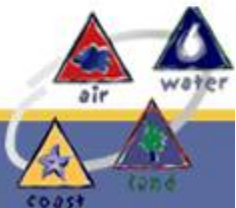
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# Response – local government

## One Plan continued...

- The resource consent requires a nutrient management plan to be put in place to manage nitrogen loss below a sinking cap.
- Nitrogen cap set for the catchment then at a farm level based on its underlying natural capital (LUC) and assumption that a 30% reduction in leaching is achievable.

	LUC I	LUC II	LUC III	LUC IV	LUC V	LUC VI	LUC VII	LUC VIII
Year 1 (when rule comes into force) (kg of N/ ha/year)	32	29	22	16	13	10	6	2
Year 5 (kg of N/ ha/year)	27	25	21	16	13	10	6	2
Year 10 (kg of N/ ha/year)	26	22	19	14	13	10	6	2
Year 20 (kg of N/ ha/year)	25	21	18	13	12	10	6	2



# Response – local government

## Issues with current approaches

- Resourcing/costs – huge implementation and ongoing monitoring and compliance costs.
- Concerns regarding farming productivity, productivity and viability.
- Opposition to “consented” farming e.g. press release from FFNZ, Nov 07:

***Federated Farmers to fight environmental regulations...***



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# Response – local government

## Other approaches

- ICM type projects in voluntary settings.  
*Issue - high level of resourcing and expert advice required.*
- Potential economic instruments e.g. differential rates, cap and trade schemes.  
*Issue - high information requirements and monitoring/administrative costs.*
- Joint initiatives with industry e.g. Dairying and Clean Streams Accord.  
*Issue – effectiveness?*



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# Response - Southland

## Current approach:

- Regulation of specific high contaminant loss activities e.g. farm dairy effluent application, winter grazing.
- Living Streams Programme.

## Potential approach:

- Expansion of Living Streams Programme.
- Discharge Plan process considering:
  - Regulation of high contaminant loss land uses (“One Stop Shop” consent linked to farm environmental management plan).
  - Sensitive environments.

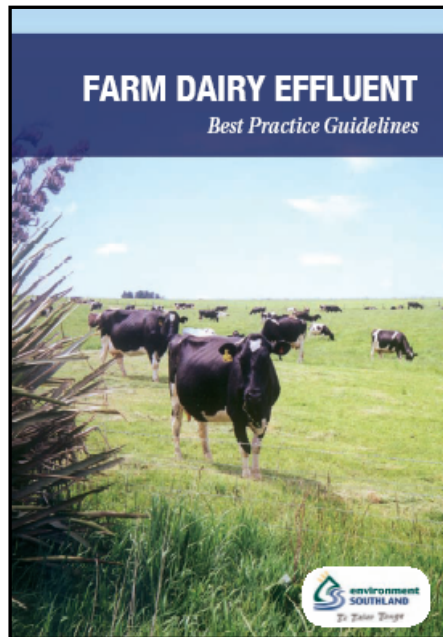


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# Response - Southland

FDE Booklet promoting:

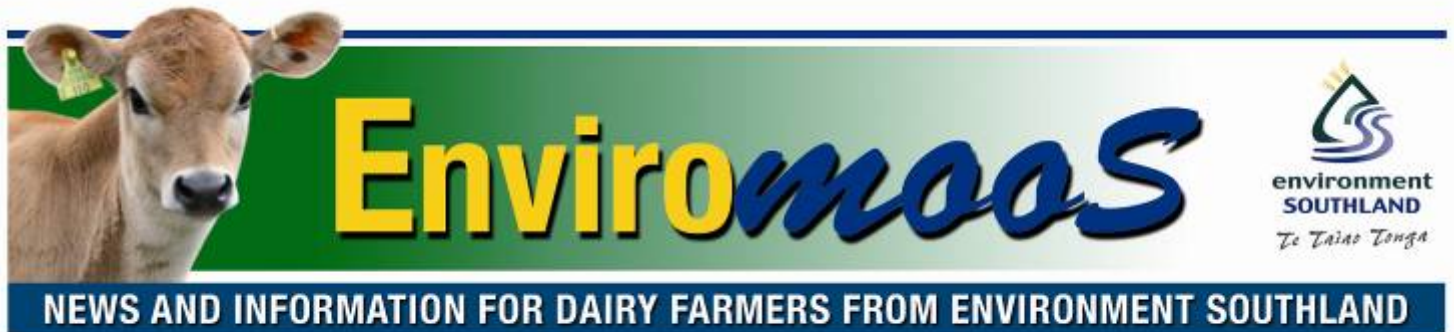
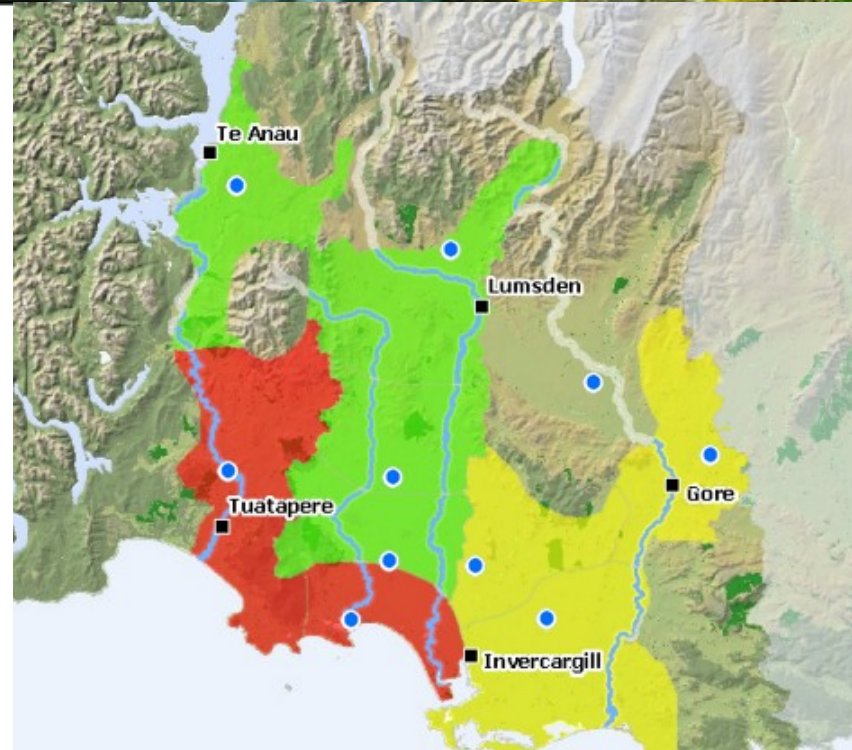
- Deferred irrigation
- Low rate application systems



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# Response - Southland

- Soil moisture network
- Risk assessment work
- Dairy Liaison Officer
- Dairy newsletter



# Response - Southland

## Discharge Plan

- Land use/water quality forum – 13 May 2008
- Subsequent workshops with Farmer Reference Group, Iwi, science providers and Council.
- Linking in with work done in other regions.
- About to embark on community consultation process.



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# What have we learnt?

- Environmental considerations do not drive adoption of BMPs – logistics and economics key drivers.
- Where environmental and economic considerations do not align, BMP adoption is slow without policy intervention.
- High demand for science to develop BMP and underpin policy responses.
- Policy responses costly, slow and often adversarial.



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# Conclusions

We need:

- *to accept that policy intervention is necessary to manage land use intensification.*
- *a more nationalised and integrated response.*
- *to move away from adversarial processes to collaborative processes.*
- *resourcing to deliver what is required.*
- *to accept that in some situations, water quality goals will not be able to be achieved through BMP adoption alone.*



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