

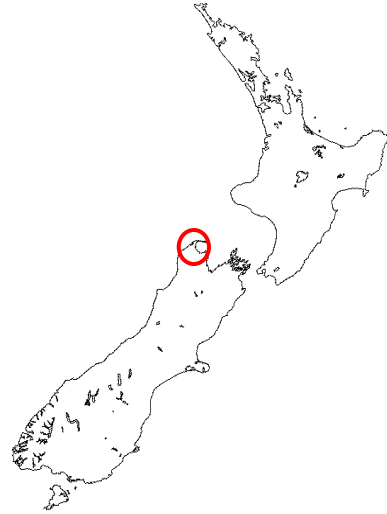
THE AORERE RIVER

STORY



The Aorere River

Tasman District, Upper South Island,
New Zealand



THE
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RIVER**
STORY

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The Aorere River Catchment

- Covers an area of 573 km²
- Short steep river with a length of 72km
- 80% of catchment is native forest
- 16% agriculture, 3% scrub, 1% exotic forest
- Dairy farming most common agriculture
- 11,000 - 13,500 cows on 34 farm



The Challenge

- Dairy Farming (\$18M/per annum) vs. Shellfish Farming (\$15M/per annum)
- E. coli contamination leading to shellfish harvesting restrictions
- Shellfish harvesting as low as 29% of the year
- Perception that high E. coli due to pasture runoff



The People and Partners

- The Aorere Catchment Group – a dairy-farmer led community group
- The shellfish farmers and the MSQP (Marlborough Shellfish Monitoring Programme)
- The NZ Landcare Trust
- Fonterra, Dairy NZ, AgResearch, Tasman District Council



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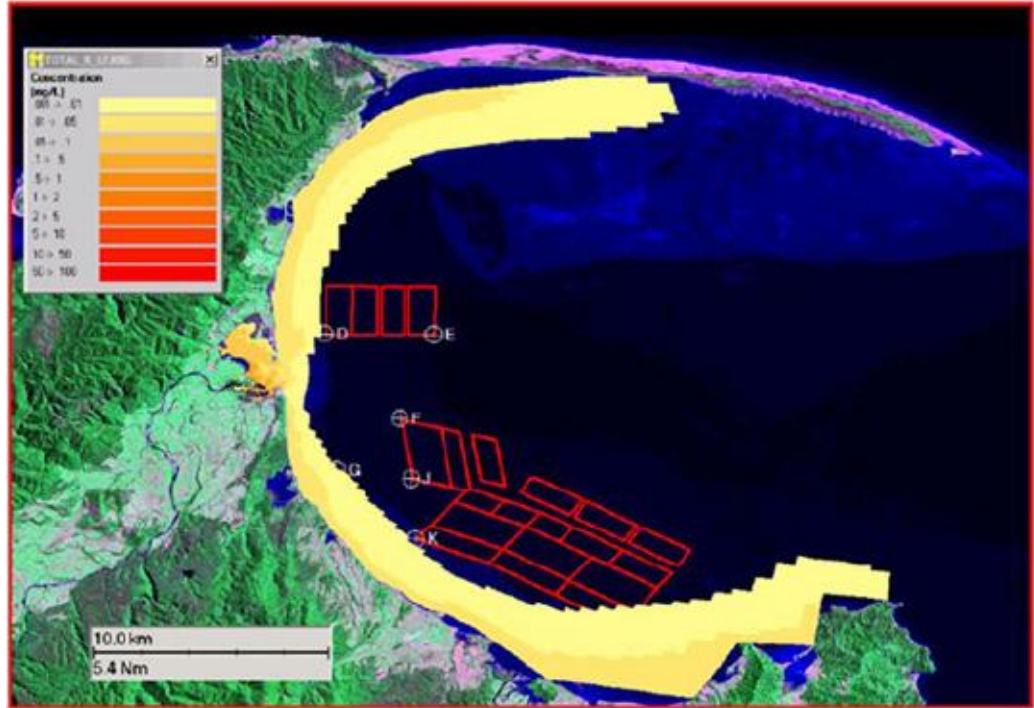
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The Process

- Intensive modeling of nutrient and pathogen impacts from land use
- Contaminant budgets and predicted causes of contamination
- Presentation of modeling results to marine farmers, dairy farmers and Tasman District Council
- Identification of E. coli as the key contaminant
- On-farm solutions to reduce E. coli loads

Aorere plume model

A tool to predict nitrogen, sediment and faecal coliforms within the estuary and bay under baseflow and stormflow conditions.



The Solutions

- Community based, problem solving field-day held on local farms
- Scientists and farmers identify BMPs for E. coli management
- Individual farm planning systems tailored to specific farms
- Independent contractor developed farm plans with each farmer



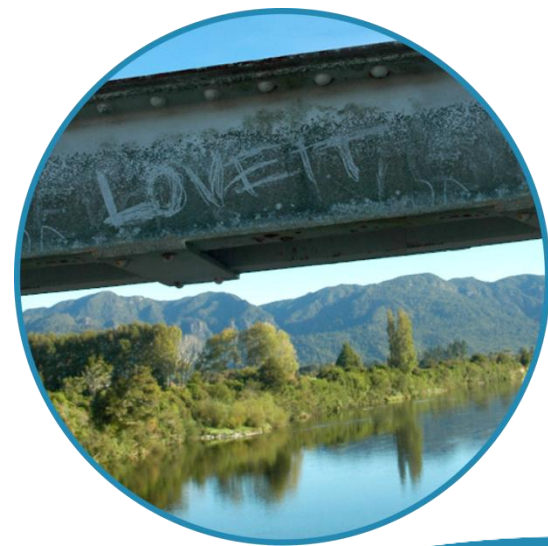
Social Science for Adaptive Management

- Farmer surveys in 2007, 2010 and 2012 to assess environmental awareness and attitudes
- Explored motivations to adopt BMPs
- Determined confidence in effectiveness of BMPs
- Targeting farmer support to achieve behaviour change



Motivations for implementing BMPs

- Desire to have healthier local waterways
- Pride in the beauty and qualities of local waterways
- Regulatory requirements
- Desire to see local shellfish farmers able to maintain viable businesses
- Negative media attention







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Our journey includes
everyone.

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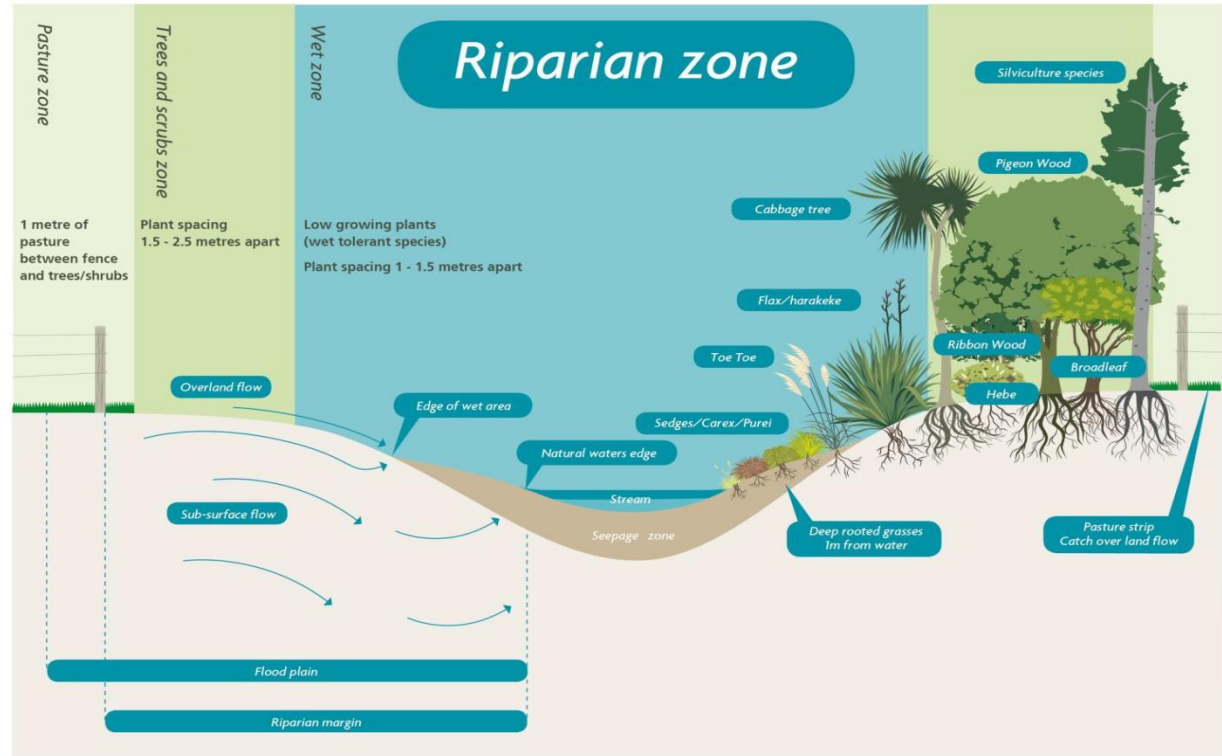








The Role of Social Science in understanding our communities









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Science on Tap.....

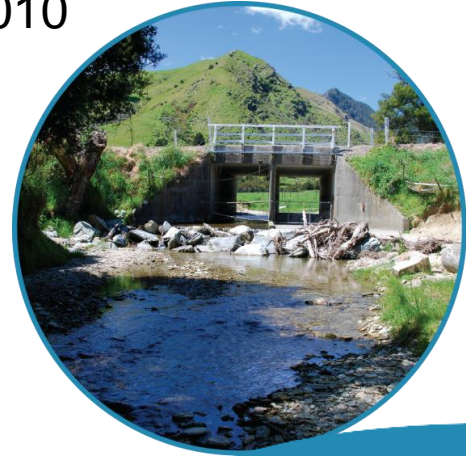
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Confidence in Effectiveness of BMPs

- Comparison between the 2007 and 2010 surveys showed that farmers confidence in promoted BMPs has grown significantly.
- The percentage of farmers that reported being 'very confident' in BMP effectiveness increased for:
 - Effluent irrigation/management – 54% in 2007; 76% in 2010
 - Fencing – 31% in 2007; 70% in 2010
 - Bridging and culverting – 16% in 2007; 100% in 2010



Action on the Ground

- 24 out of 34 farms developed voluntary farm environment plans
- Each farm plan includes a 5 year action plan for BMP implementation
- Audit of farm plans - average 78% of actions identified had been completed
- Over \$1.6M invested in on-farm best management practices (\$67,000 per farm)



Community Education

- Over 8 years Golden Bay Stream Care Group planted 23,000 plants.
- Native plant nursery attached to Collingwood Area School
- Streamcare linked to EnviroSchools Programme
- EnviroSchools Programme linked national education curriculum and broader learning outcomes
- Focus on farmer learning about aquatic biodiversity
- Workshops to protect and create native fish spawning habitat



Outcomes

- Since 2006 there has been a reduction in E coli spikes during low and medium river flows
- Since 2006 a step change reduction in marine pathogen concentrations
- Shellfish harvesting up from 29% in 2002 to 79% in 2012
- Viable dairy farming and shellfish farming businesses
- Improved community cohesion



Innovations

- Farmer-led community- owned catchment management initiative
- Independent project management, facilitation and provision of scientific expertise by NZ Landcare Trust
- Farmer leaders are supported to develop their leadership skills and abilities
- Successes celebrated throughout the course of the river story
- Food (seafood chowder), film (Water Whisperers) and awards



Innovations

- Sister river approach (“Twinning”). Aorere River community connected with the Rai/Pelorus River catchment in neighbouring Marlborough District
- These successes used by NZ Landcare Trust to develop a national resource and masterclasses on catchment management.



Conclusions

The project improved the ecological health of the river and coastal environment. It also benefited community cohesion, assisting dairy and marine farmers to coexist and maintain their livelihoods sustainably. The initiative also provided important lessons for future community-led catchment projects.



Acknowledgements

- Aorere dairy farmers and shellfish farmers
- Aorere Catchment Group
- Streamcare Group
- MPI Sustainable Farming Fund

