

Predicting the Success  
of **COMMUNITY-LED  
CATCHMENT  
MANAGEMENT**

# *Presentation Overview*

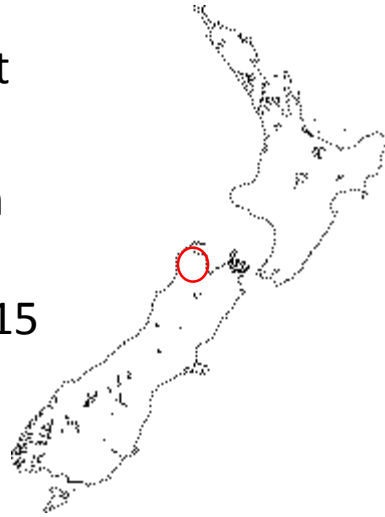
- Exemplifying Success – Aorere River Catchment
- Research to Identify Predictors of Success
- Valuable Innovations



# The Aorere River

Tasman District, Upper South Island, New Zealand

- Catchment Initiative Supported by NZ Landcare Trust since 2006
- Winner – Morgan Foundation NZ River Prize 2015



# *The Aorere River Catchment*

- Covers an area of 573 km<sup>2</sup>
- 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 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





## *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





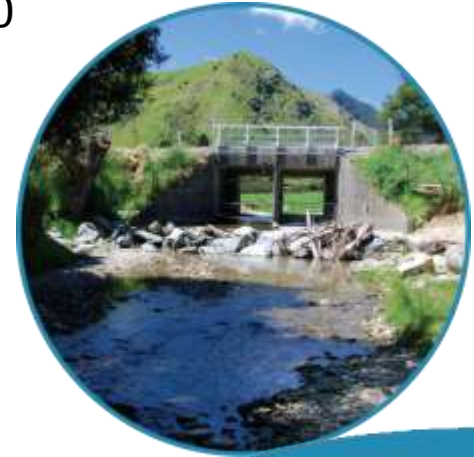
# *Social Science for Adaptive Management*

- 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



# 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)



# 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





## *Lessons Learnt from Aorere River*

- Farmers as Leaders – Community Ownership
- Clear Problem Identification – Good Science
- Independent Facilitation – Project Coordination
- Technical Support and Training
- Building and Maintaining Relationships
- Quality Communications – Telling Stories and Celebrating Success

# *Identifying Predictors of Success*

- Literature Review
- National Catchment Management Workshop
  - collaborative identification of “enablers and challenges”
- Surveys of Farmers in 3 NZ Catchments
  - Kakanui, North Canterbury and Buller Rivers



# *Key Determinants / Predictors*

1. Access to Science, Training and Information
2. Confidence in Regulatory Policies
3. Leadership
4. Farm Planning and Monitoring
5. Trust in the Public
6. Concern for Water Quality



# Resourcing For Success

- Focus Resources on “weak” Predictors
- Build and Improve on “solid” Predictors
- Re-survey and Revise Prioritisation

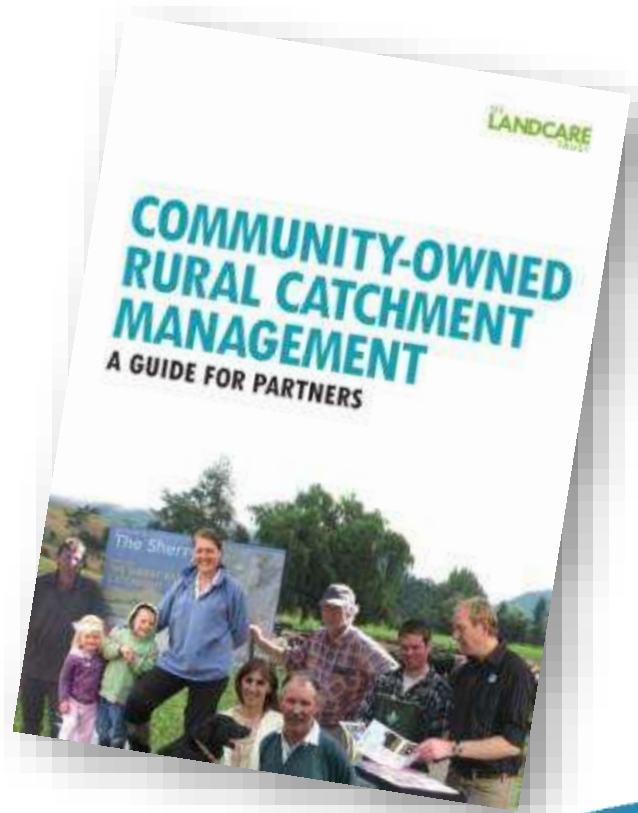




# Valuable Innovations

- “Community-Owned Rural Catchment Management: A Guide for Partners”
- Catchment Management Masterclasses
- Sister River Approach (“Twinning”)

[www.landcare.org.nz](http://www.landcare.org.nz)



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- Staff and Trustees of NZ Landcare Trust



Ministry for Primary Industries  
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