



**For now &  
our future**

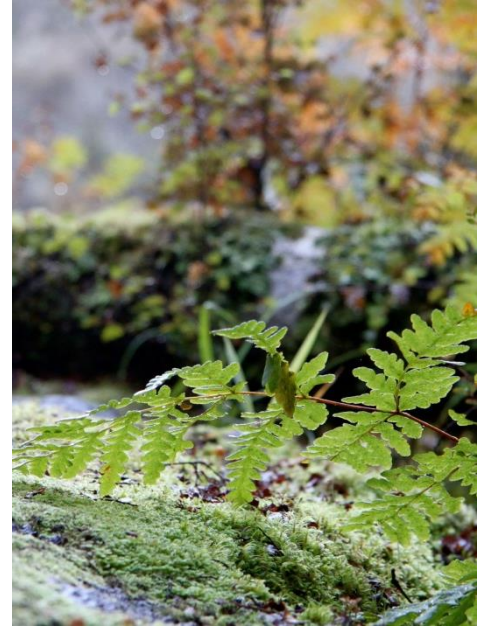
# ES Science Symposium

**Graham Sevicke-Jones** *Director of Science and Information*

**Rachael Millar** *Strategy and Partnerships Advisor*



To celebrate the completion of our  
four-year science programme  
by showcasing our work and how it  
provides a resource that will be used by  
generations to come



# te taurikura o Murihiku thriving Southland

---

[www.es.govt.nz](http://www.es.govt.nz)



A THRIVING SOUTHLAND... Te taurikura o Murihiku

DATA

ALERTS



Managed access to quality natural resources

Population ↑  
Employment ↑  
Environment ↑

Communities expressing their diversity

Communities empowered and resilient

Diverse opportunities to make a living

PEST FREE

Environment Southland:  
Our 10-year vision  
Engagement • Knowledge • Connectivity • Investment

# Interconnected outcomes

- Managed access to quality natural resources
- Diverse opportunities to make a living
- Communities empowered and resilient
- Communities expressing their diversity

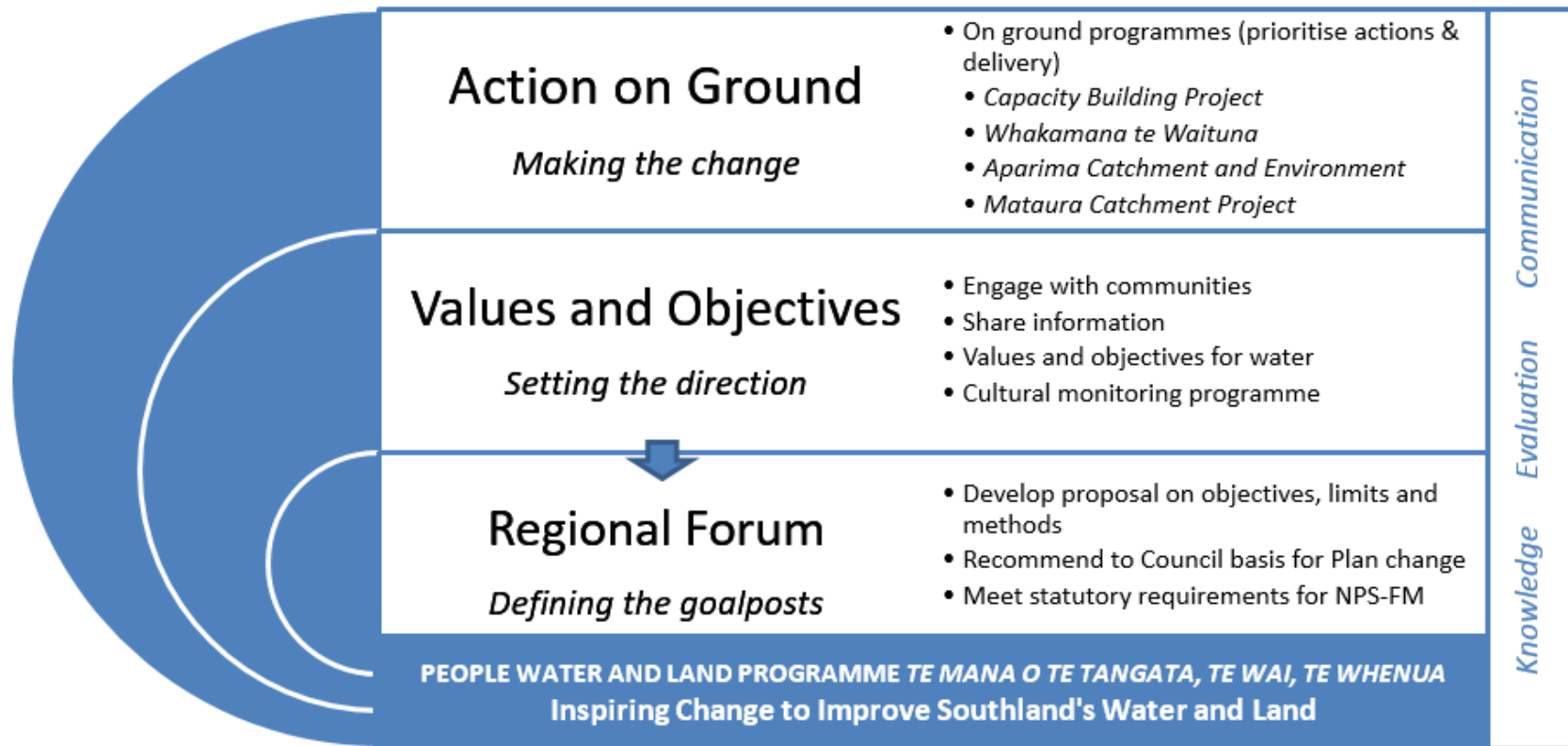
# Where are we going



- People, Water and Land Programme
- Southland Science Inc



# People, Water and Land





# Southland Science Inc



# A THRIVING SOUTHLAND... Te taurikura o Murihiku

DATA



ALERTS



Managed access to quality natural resources

Communities empowered and resilient

Population ↑  
Employment ↑  
Environment ↑

Communities expressing their diversity

Diverse opportunities to make a living

PEST FREE

Environment Southland:  
Our 10-year vision  
Engagement • Knowledge • Connectivity • Investment



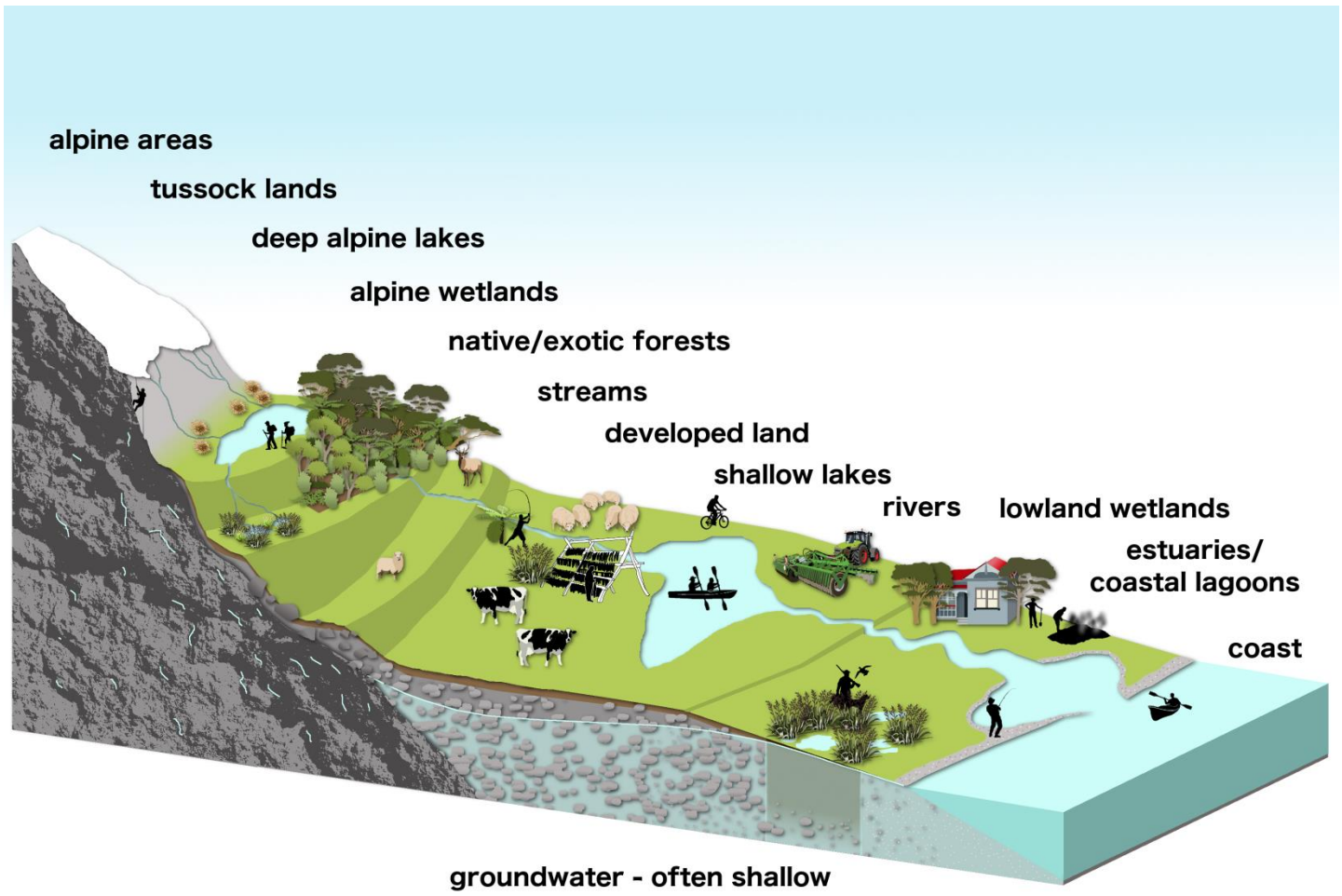


# Evolution of Knowledge

- Everything is connected – land, water, air, people
- Evolution in each of many disciplines
- Integrating multiple disciplines
- Value, change and people









# Evolution in disciplines

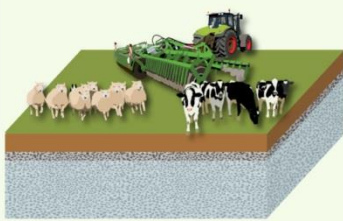
## Southland Economic Project



Developing ways to explore the economic impacts of catchment limits for water quality

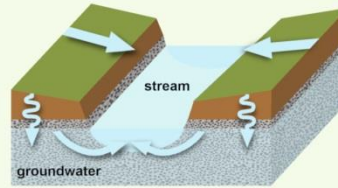
## Characterisation Programme

### Land Use Inputs



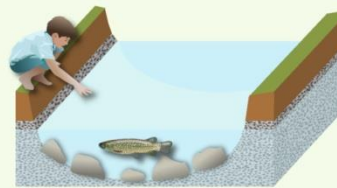
How does what happens on the land affect contaminant loss?

### Fluxes and Flows



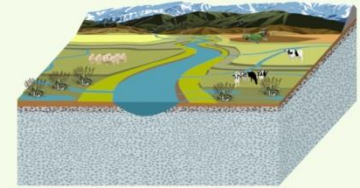
How do water and contaminants move through the landscape?

### Ecosystem Responses



How do aquatic systems respond to stressors?

### Physiographics of Southland



Why does freshwater quality vary across the region?

# Evolution in disciplines

## Environment Southland Science Reports

A Story Map [f](#) [t](#) [e](#)



Southland Science

Water Story

Social

Economic

Cultural

Environment

Bibliography

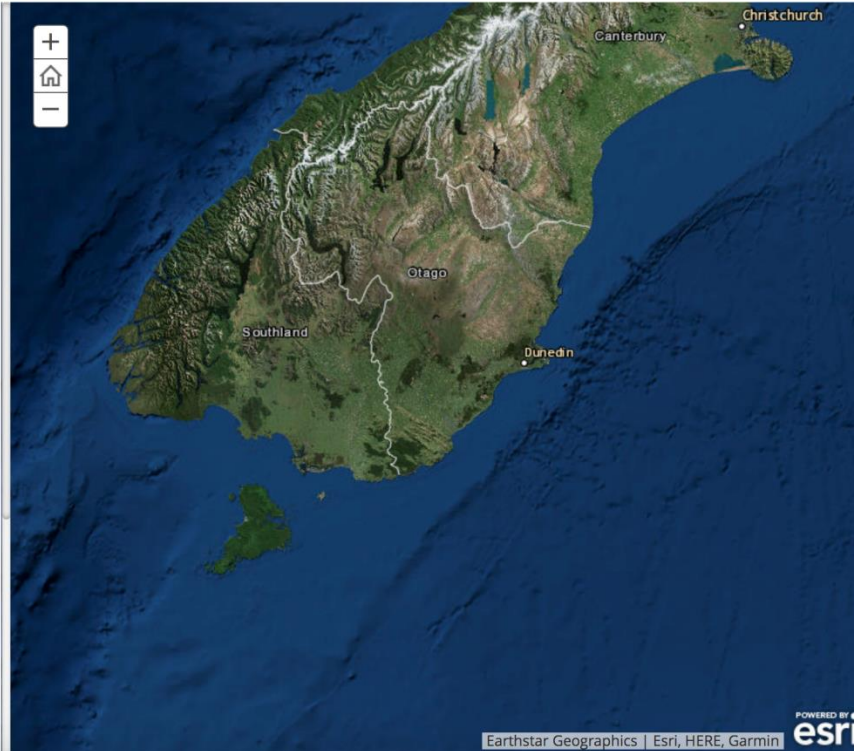
### Environment Southland Science Programme 2014-18

In 2014 Environment Southland partnered with several research organisations and stakeholders to embark on a comprehensive new four-year science programme. This body of work was undertaken in addition to our existing monitoring work.

The purpose of the new programme was to provide a strong conceptual understanding of natural and socio-economic systems functions in Southland, to provide the when and where context for community engagement and better resource management – specifically to prepare for setting limits under the national policy statement. This was a significant new level of investment by the Council in science, and in working together with other organisations to build a coordinated, integrated knowledge base.

The programme comprised two main research areas known as the Characterisation Programme and the Southland Economic Project. The Characterisation Programme sought to understand Southland's physical geography, how natural systems interact, and the causes of variable water quality. The Southland Economic Project sought to understand and test the economic and social impacts of potential policy decisions on industry, businesses and the wider economy.

This story map provides access to all the reports produced over the four-year programme, separated into the themes Social,





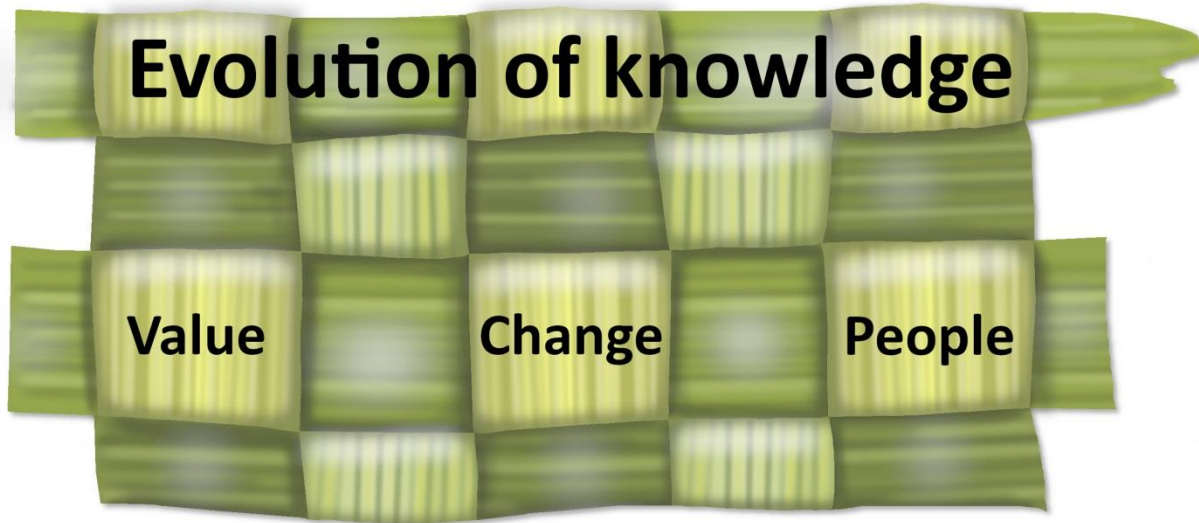
# Integrating disciplines

*Naku te rourou nau te rourou, ka ora ai te iwi*

*With your basket and my basket, the people will live*



# Symposium Themes



# Value – data worth and integration



# Change – environmental gradients and resilience





# People – building connections & behavioural change



# Evolution of knowledge

**Value**

**Change**

**People**

**Integration**

Weaving strands  
of science  
together to increase  
knowledge

**Resilience**

Understanding  
temporal and  
spatial patterns  
and their drivers

**Building  
connections**

Connecting people and  
place. Sharing the  
burden of past decisions  
and future uncertainty

**Data worth**

How methods  
have changed with  
increased knowledge

**Environmental  
gradients**

Buffering, hysteresis,  
agility and recovery  
of environmental  
systems

**Behavioural  
change**

Developing ways to  
influence behaviours  
for better outcomes