INTEGRATED CATCHMENT MANAGEMENT for the Motueka River

Introducing the Motueka HELP Basin and ICM Research Programme

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Manaaki Whenua Landcare Research

CAWTHRON

TDC Tasman District Council

NIWA Taihoro Nukurangi

NZ Landcare Trust

Common Ground Associates Ltd

Motueka Iwi Resource Management Komiti (MIRMAK)

Fish & Game NEW ZEALAND

forest research

Institute of Geological & Nuclear Sciences Limited

Making a difference for a truly clean green New Zealand

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Outline

- Attributes of ICM and HELP
- NZ Institutional & Legislative Setting
- The Motueka catchment
- Motueka research issues

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Attributes of ICM and HELP

- An *ecosystem management* approach
- A research approach *linking cause and effect* in a catchment-scale context
- A *collaborative* venture: scientists, resource managers, stakeholders, communities, individuals, government
- *Interdisciplinary*
- *Issue-driven*
- A tool to achieve *sustainable management* of the environment, especially the management of *cumulative effects* of resource uses

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Integrated Catchment Management in simple terms

1. **Everything is connected to everything else**
2. **Everything must go somewhere**
3. **Nature knows best**
4. **There's no such thing as a free lunch**

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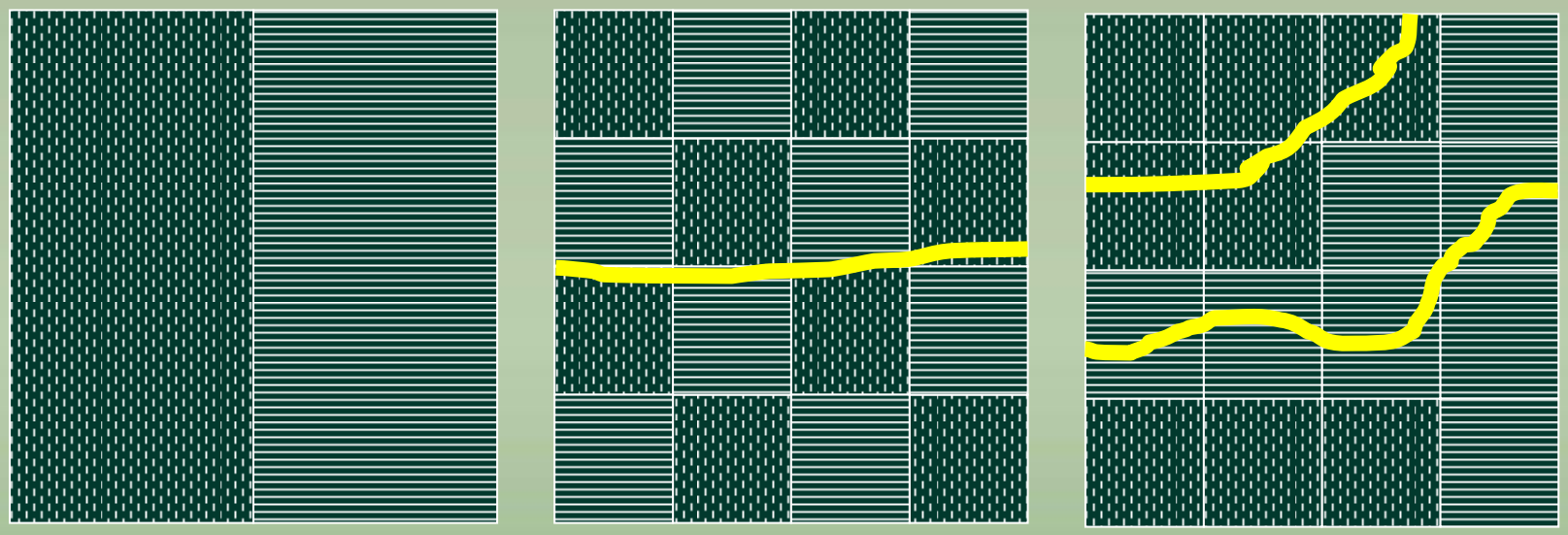
Spatial organisation of resource uses



…spatial juxtaposition matters

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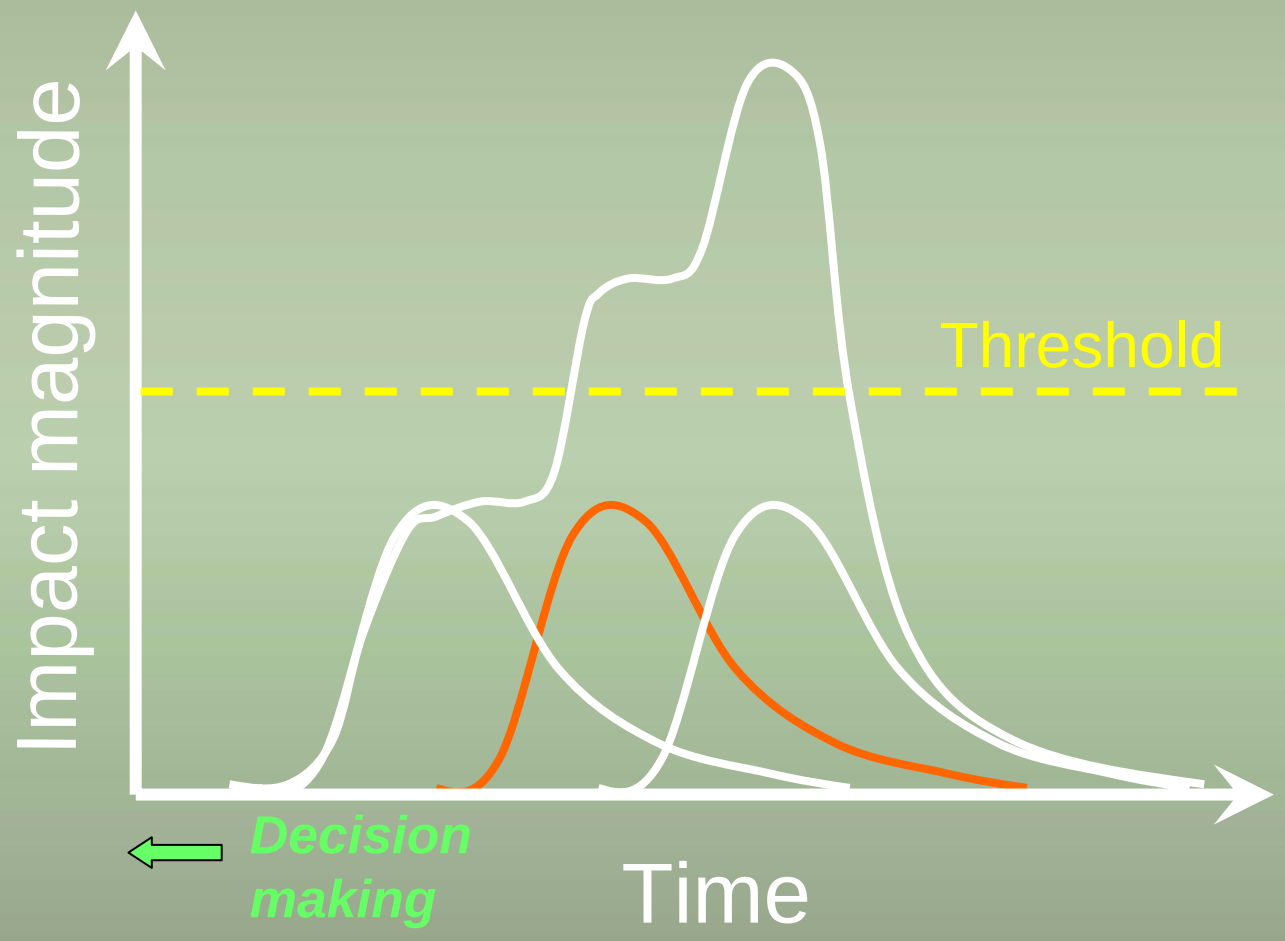
Temporal organisation of resource uses

Cumulative impacts



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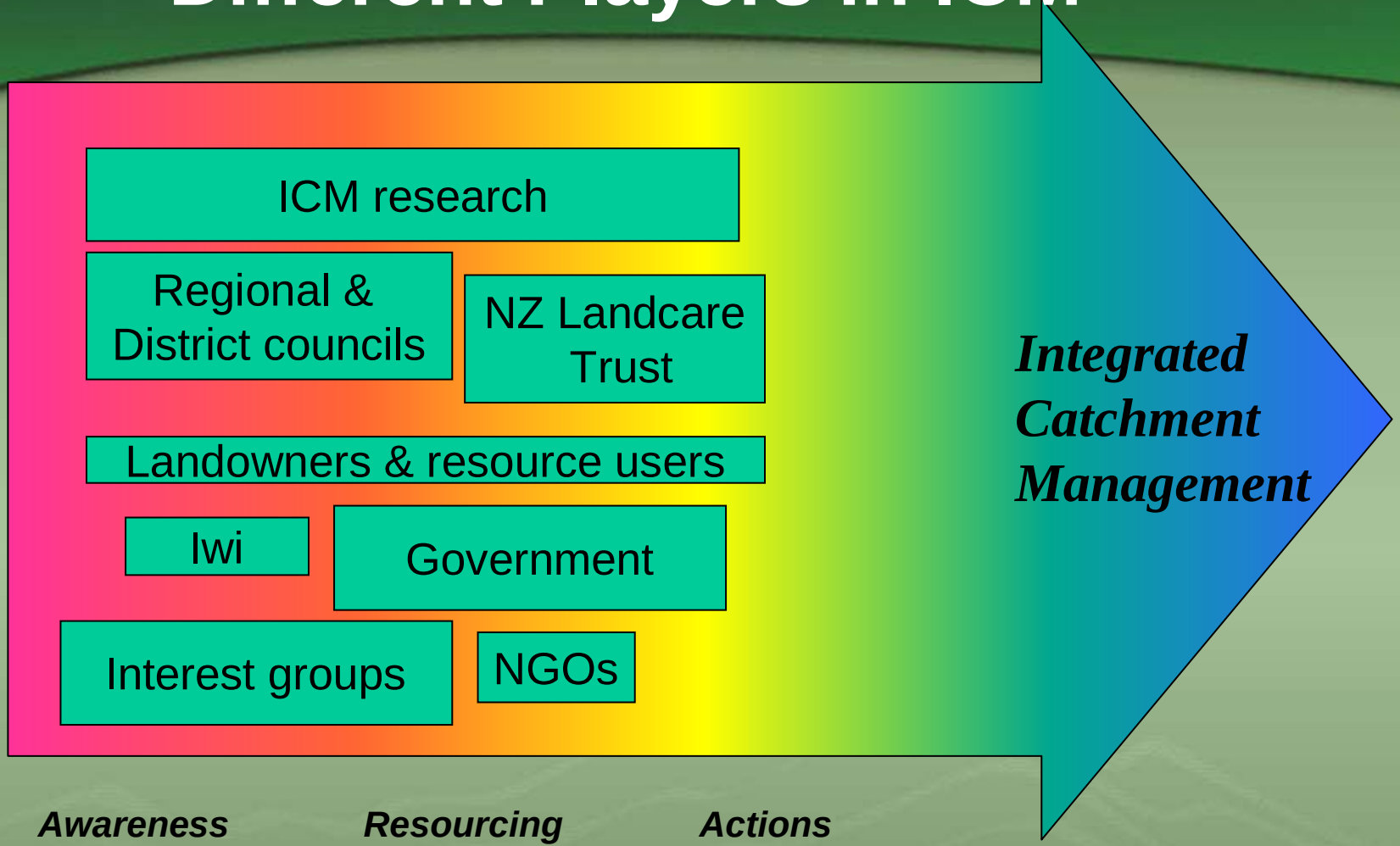
Different Players in ICM



Awareness ***Resourcing*** ***Actions***

Knowledge ***Commitment*** ***Cumulative Benefits***

Institutional Setting

New Zealand Water Management

- Government sets broad environmental policy only
- 16 regional & unitary councils = environmental management of land, water, rivers, air, coasts
- 70 district & city councils = water supply, sewerage, roading, land subdivision and land use planning
- Research = Crown research organisations , private research institutes & universities, with much environmental research funded by Government

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Legislative Setting

New Zealand Water Management

- Resource Management Act 1991 governs all environmental management:

  "To promote the sustainable management of natural and physical resources"

- Councils manage the environment through:

  - ✓ statutory regional and district plans
  - ✓ granting resource consents for some uses of land, water, rivers, coast, and for discharges
  - ✓ environmental education

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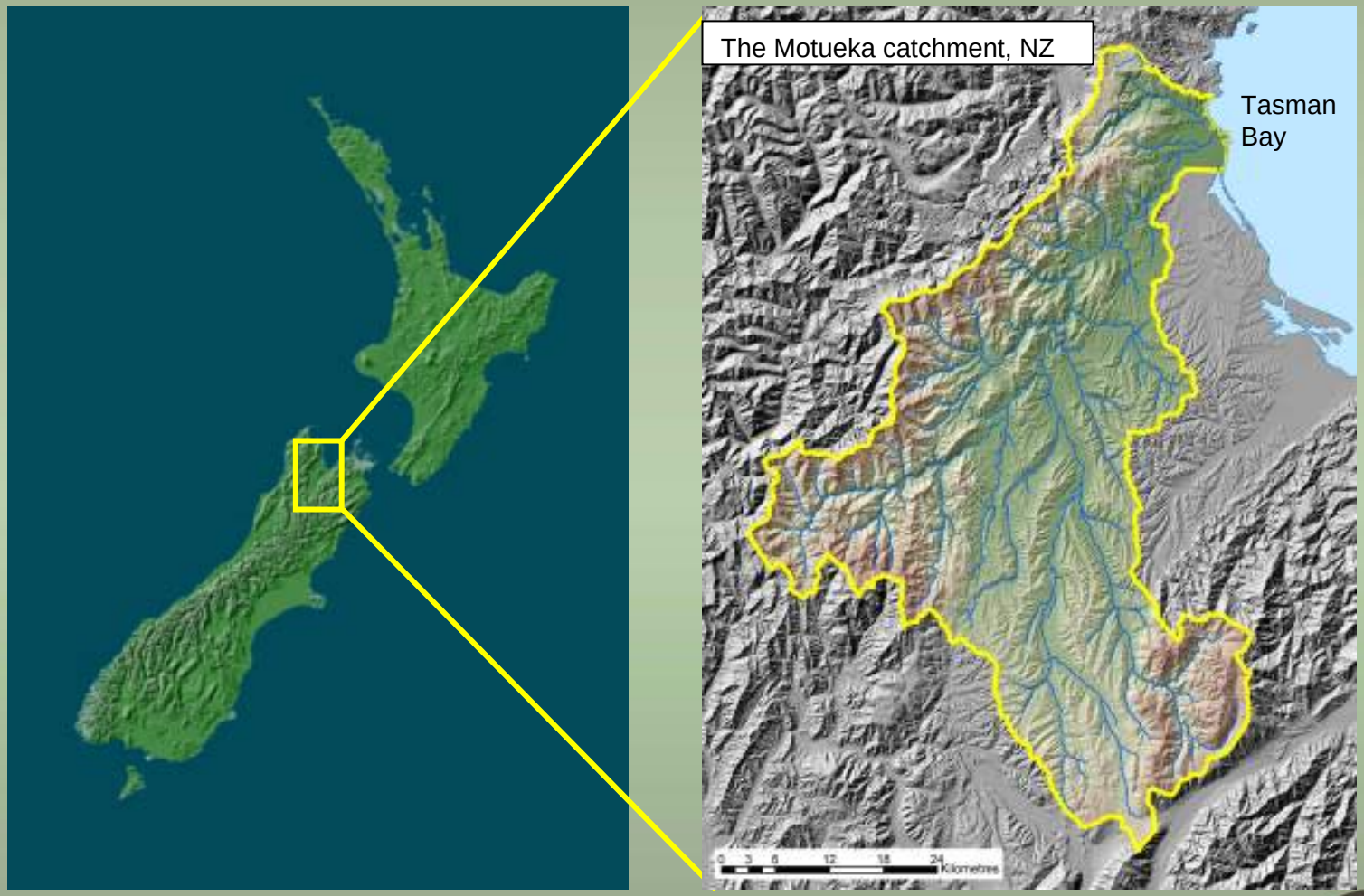
Motueka Catchment HELP Basin



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Key Themes

1. **Allocation of scarce water resources among competing land uses**
2. **Managing land uses in harmony with freshwater resources**
3. **Managing land and freshwater resources to protect marine values**
4. **Building human capital and opportunities for community participation**

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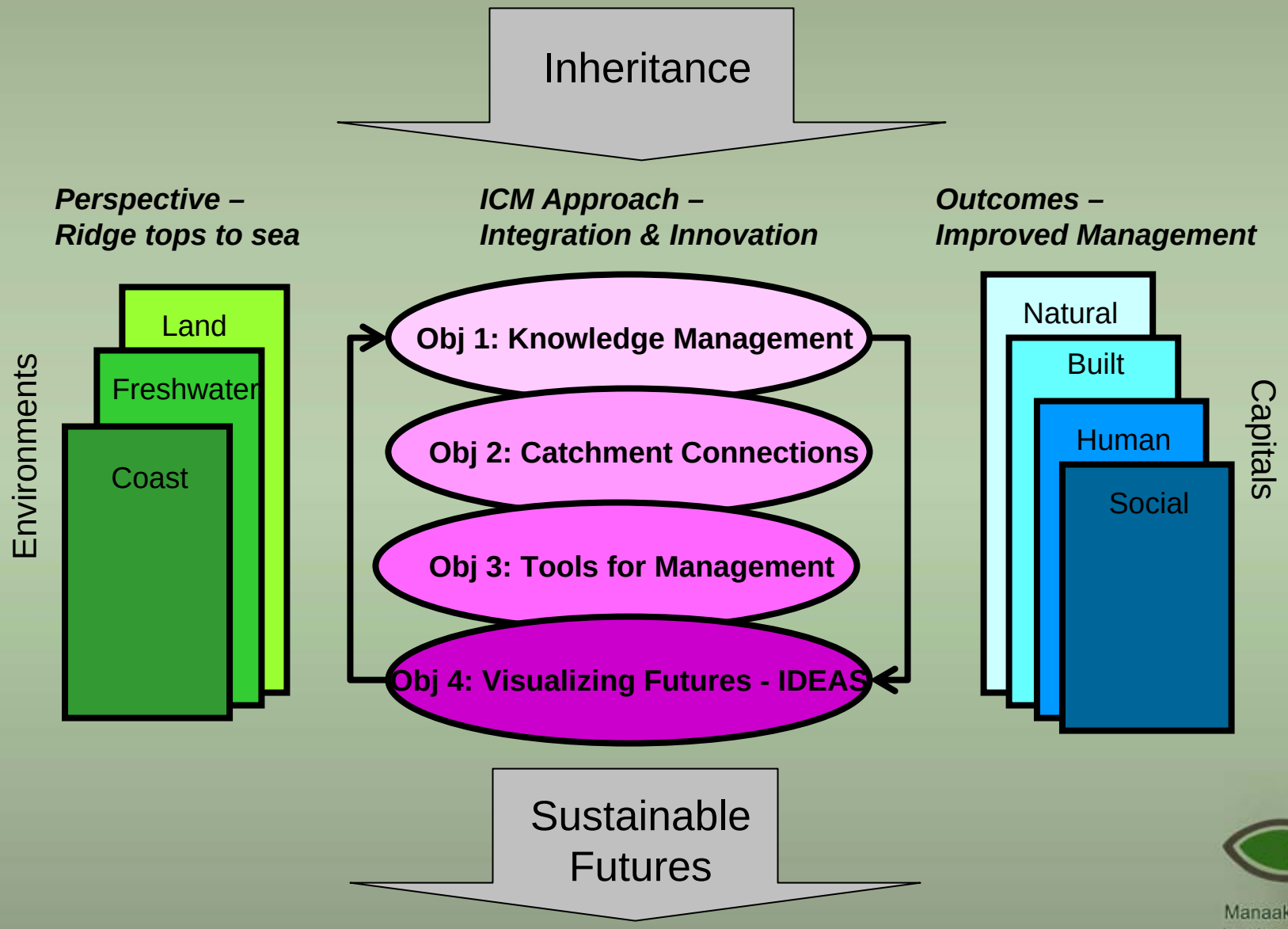
ICM Research Overview



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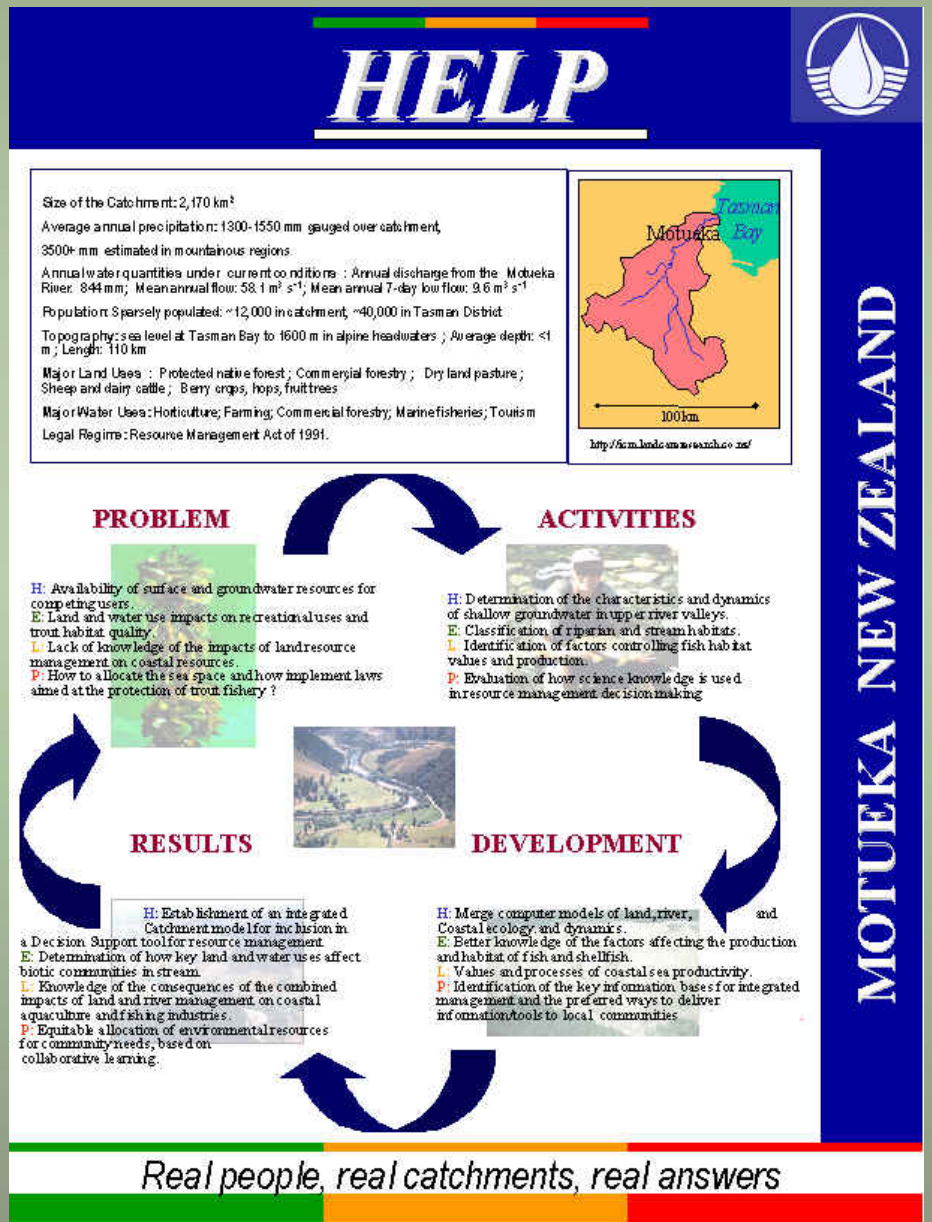
The Motueka is a UNESCO ‘HELP’ Catchment

HELP = ***H**ydrology for the **E**nvironment, **L**ife and **P**olicy*



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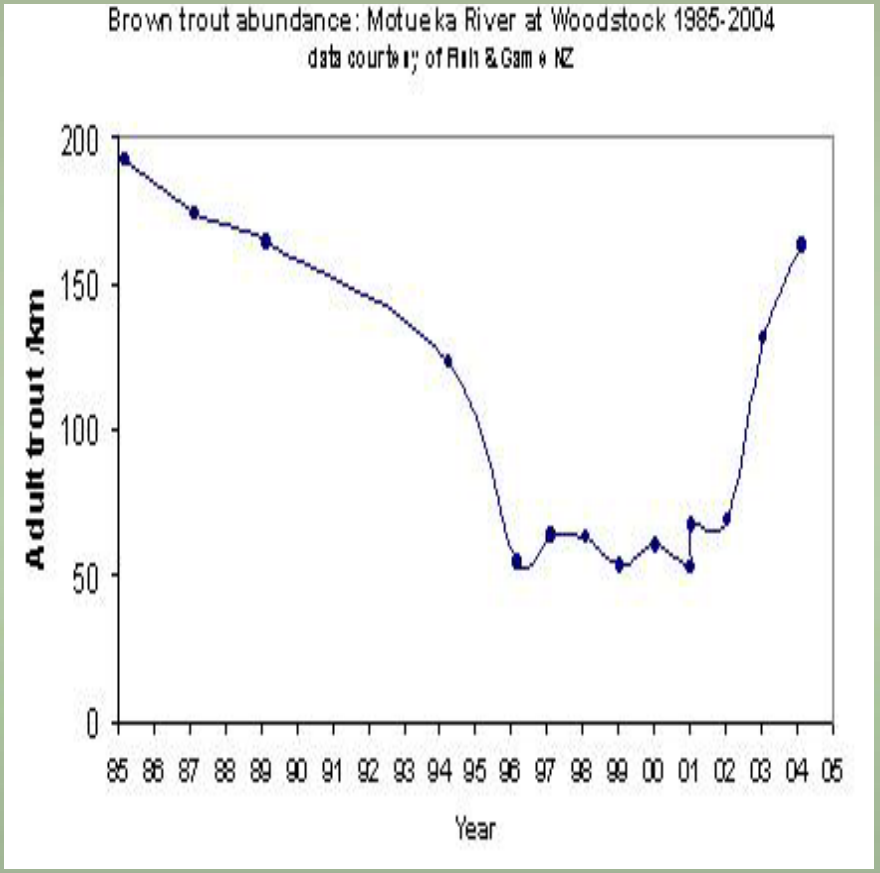
Motueka Catchment Issues (1)



Increasing irrigation water demand from an internationally recognised trout fishery: Motueka Water Conservation Order

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Motueka Catchment Issues (2)

Sediment reduces river and marine water quality.
Pine forest reduces annual streamflows from pasture by ~50%

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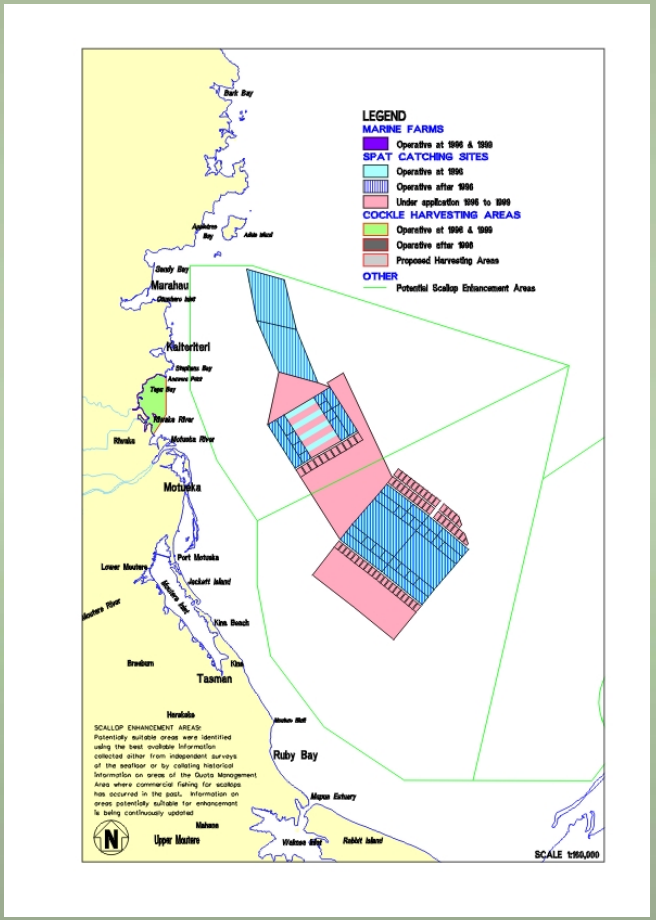
Motueka Catchment Issues (3)



Allocation of sea space for shellfish farming and harvesting

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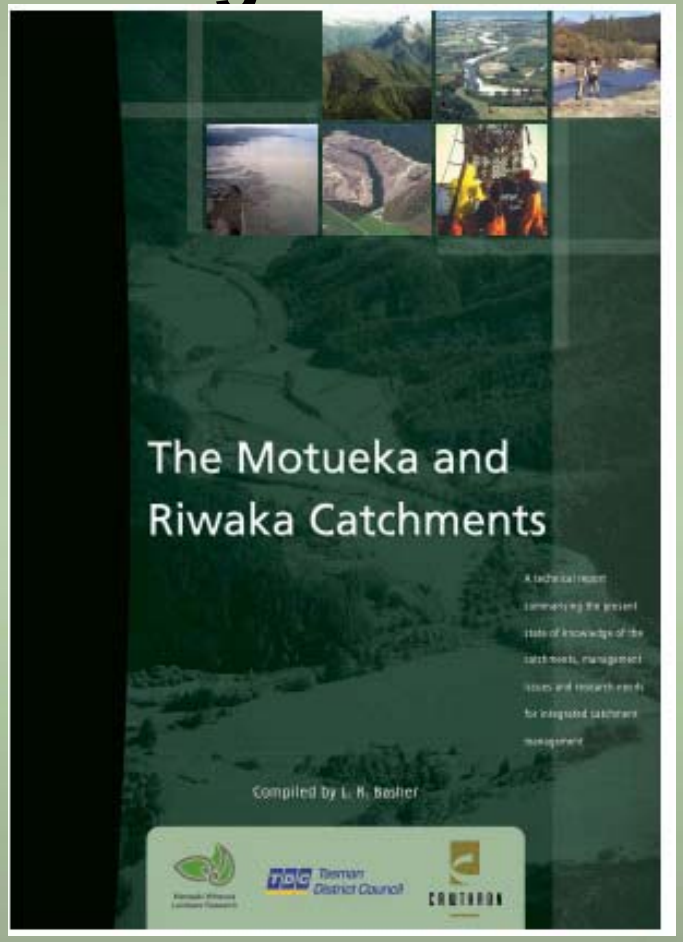
Examples of Successes – Information exchange



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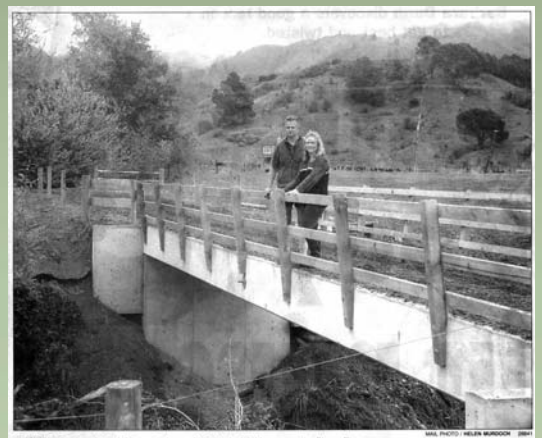
Examples of Successes – Water



MAL PHOTO / HELEN MURDOCH 28847

SPANNED: Frank and Lisa White on their new $50,000 stock bridge across the Sherry River.

Bridge over troubled waters

By Helen Murdoch

Tomorrow's opening of a $50,000 stock bridge across the Sherry River marks the start of a combined project between farmers and the Tasman District Council to improve the river's health.

Dairy farmers Frank and Lisa White commissioned the concrete span bridge from Thelin Construction to provide permanent access to 30ha of their 271ha farm.

Mr White said their 260-cow herd would no longer have to tackle the slippery steep-banked ford twice a day and the river would not cut off access to valuable grazing when it was in flood.

"Building the bridge has always been part of the farm plan," Mr White said.

The couple have owned the farm for about a year.

Mr White said the cows used to slip, fall and bump each other when they went across the ford.

Rising river levels had also led to stock being marooned in the paddocks away from the milking shed.

Mrs White said the Tasman District Council had helped with the project and waived resource consent and building consent fees.

The river was the subject of the first known national scientific study on the effect of cows crossing a waterway to and from milking.

The study, which included the use of video cameras, graphically illustrated the natural tendency of stock to defecate in water (7 times more likely than elsewhere), and the r suiting high bacteria levels.

Council policy planner Martin Workm said the Whites' bridge was an example farmers taking positive action to protect environment.

Water quality monitoring of the river 2000 had identified high bacterial cou certain times.

Fish and Game had previously raised cerns about the health of the river before the monitoring, which was part of the Motueka integrated catchment project.

This involved the council, Landcare Research and other s the impact of coastal mar

news extra

News

Water order praised

Fourteen years of negotiation over

by Bernadette Cooney

A decision to place a water conservation order on parts of the Motueka River has been applauded by Nelson Marlborough Fish and Game.

Ward, said from Auckland today he was pleased to hear the order had finally been gazetted after 14 years of negotiation.

"There's quite a level of personal satisfaction in seeing this come to pass," he said.

"I congratulate Fish and Game and Nelson anglers for their dedication and ability to work through the issues, which certainly created a lot of misunderstanding early on. People thought we wanted to lock the river up and throw away the key."

er Lewis Metcalfe said primary producers now had some assurance over access to a reasonable level of water flow for irrigation.

"Water is vital for the primary sector and the socio-economic well-being of the community. However, a balance had to be found between primary sector demands and the environment, and this is what has occurred," Mr Metcalfe said.

Ms Hobbs said the order would allow parts of the river to be kept in its natural state.

"The Motueka River has many outstanding characteristics, including the scientifically important karst geological formations, blue duck habitats and brown trout fisheries," she said.

"It is important that these characteristics and the river's other natural features are protected by the conservation order."

Farmers and scientists join up to sweeten the Sherry River

While farmers are frequently criticised for the effects of dairying on the environment, positive developments are often ignored. **Simon Towle** reports on work along the Sherry River in Tasman District, where farmers have joined forces with scientists and the district council.

Dairy farmers have traditionally locked horns both with local councils and Fish and Game New Zealand for contaminating the country's natural waterways. However, compelling science has now persuaded farmers in Tasman District to invest considerable effort and money to clean up the Sherry River in a case that could prove a model example for the rest of the country.

Even long-time dirty-dairying campaigner Bryce Johnson, director of Fish and Game, enthusiastically describes the project as "a good news story ... proof the envi-

new information in December 2001, "the Sherry farmers undertook to take action. In a short period of time, the crossing on Frank and Lisa White's property where the experiment was carried out has now been bri In addition, another farmer, Rod O' is using a bridge instead of takin through the river."

He says two other bridges a ning stages and substantial f ing to keep stock ou

Tasman Distric cial assistance

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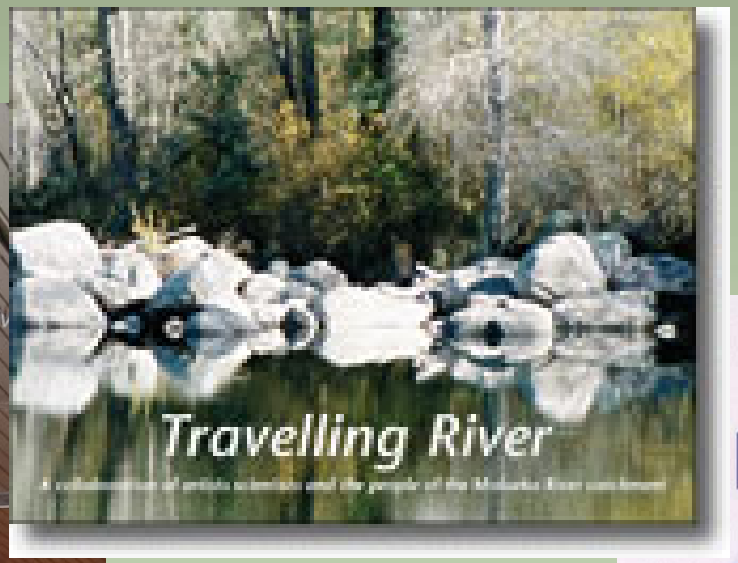
Travelling River Art-Science Collaboration



TDC Tasman District Council

Environmental AWARDS 2004

Cultural Heritage Award

Winner

Travelling River Exhibition

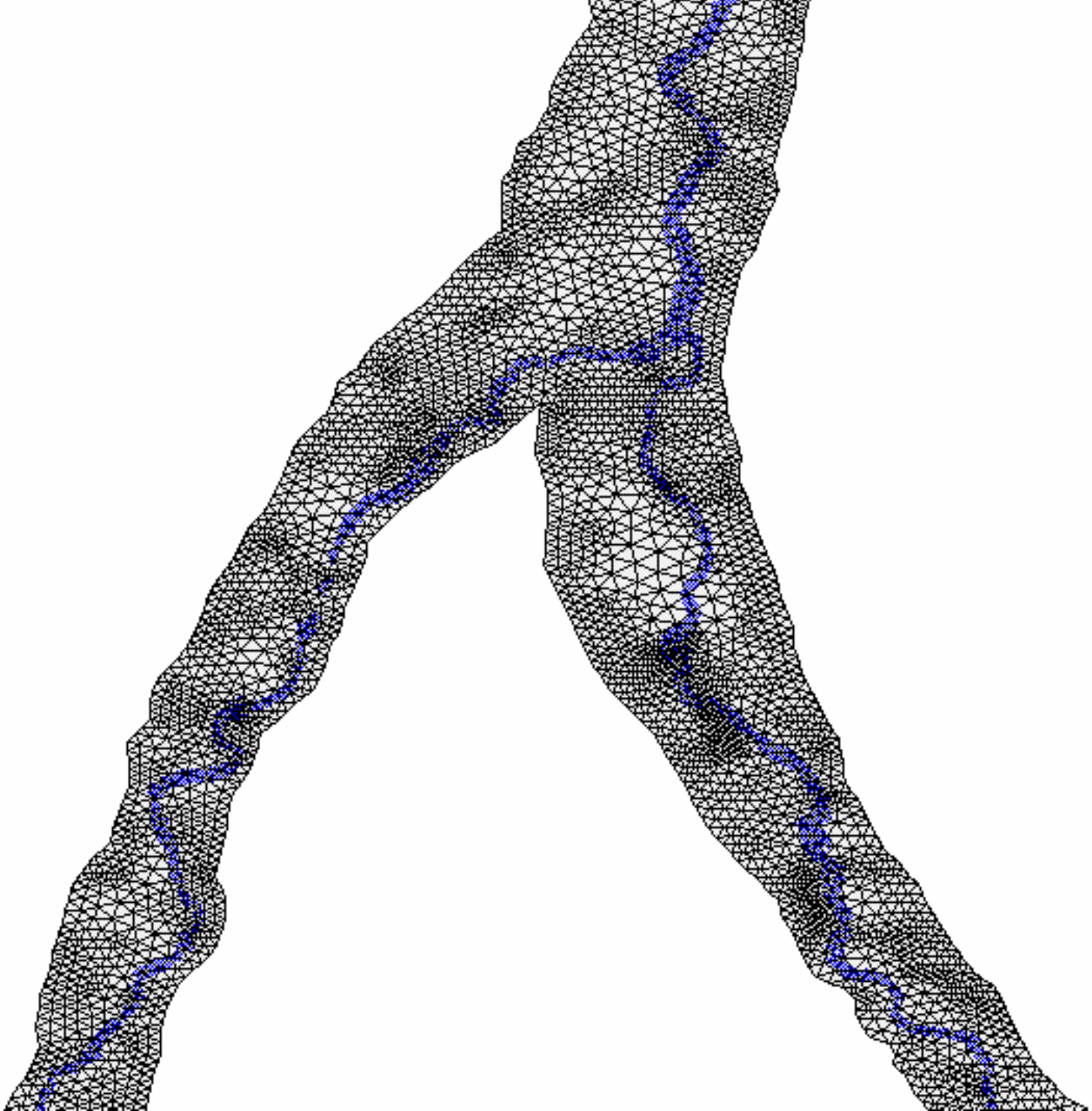
The Travelling River Exhibition has been named the winner of the Tasman District Council's Cultural Heritage Environmental Award, in recognition of the enormous contribution the exhibition has made to promote the cultural heritage and environmental significance of the Motueka River Catchment.

The collection incorporated the work, vision and stories of artists, scientists and the people of the Motueka River Catchment in an innovative and accessible way. Bringing the exhibition together drew all areas of the community into a discussion of what the river meant to them.

The beauty of the Travelling River art-science exhibition is that it crosses cultural and social boundaries; giving equal consideration to the thoughts and views of the many sectors of the Motueka community.

We applaud the vision of Landcare Research and the exhibition curators Andrew Fenemor, Maggie Atkinson and Suzie Peacock in bringing alive life and science in the Motueka River catchment.

Therefore the Tasman District Council and judges of this category would like to congratulate all of the exhibition coordinators, the many contributors to the project, including artists, scientists, iwi and the greater community for sharing what the Motueka River Catchment has meant to them and how this compares with modern use and management.



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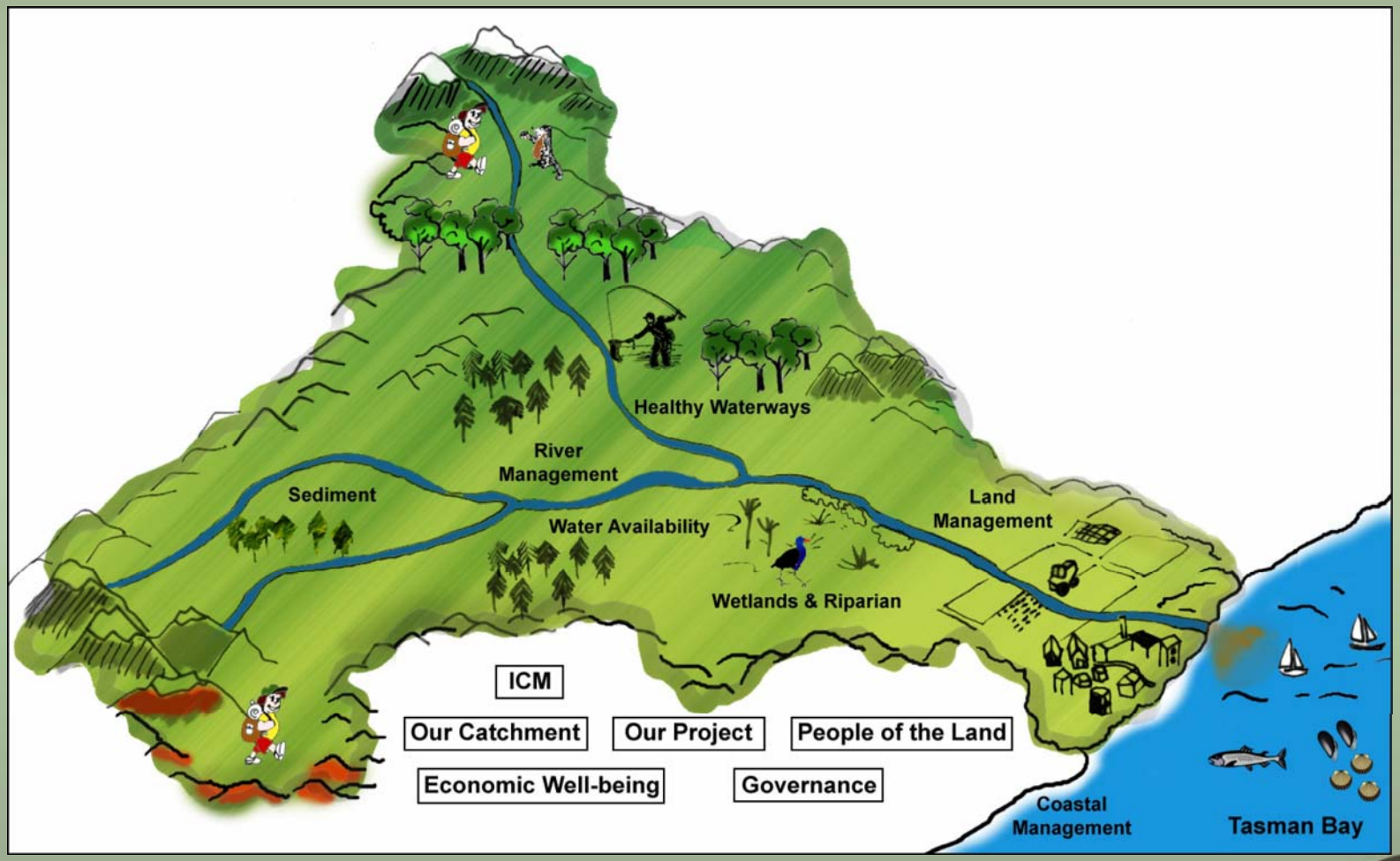
Motueka catchment CD-ROM



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Motueka ICM Research 2005-

Obj 1: KNOWLEDGE MANAGEMENT

1.1 The Motueka knowledge base (Chris Phillips)

1.2 Collaborative Learning (Will Allen)

1.3 Iwi Values & Collaboration (Garth Harmsworth)

1.4 Science Responsiveness to the Community (Margaret Kilvington)

1.5 Institutional Learning (Glen Lauder)

Obj 2: CATCHMENT CONNECTIONS

2.1 Sediment Sources, Transport and Impacts (Les Basher)

2.2 Freshwater ecosystem productivity (Roger Young)

2.3 Groundwater flowpaths (Tim Davie)

2.4 Riverine Effects on Tasman Bay Productivity (Paul Gillespie)

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ICM Research Projects

Obj 3: TOOLS FOR MANAGEMENT & POLICY

3.1 Residual Flow Needs Assessment (Roger Young)

3.2 Riparian Classification and Restoration (Chris Phillips)

3.3 Sediment Impact Mitigation (Les Basher)

3.4 Management of coastal-sea shellfish resources (Paul Gillespie)

3.5 Resource allocation and economics (Andrew Fenemor)

Obj 4: VISUALISING FUTURES - the IDEAS FRAMEWORK

4.1 IDEAS Conceptual Development (John Dymond)

4.2 Hydrological and Contaminant Modelling (Tim Davie)

4.3 Sediment Generation and Transport Modelling (Les Basher)

4.4 Stream Habitat Modelling (Roger Young)

4.5 Coastal Circulation & Ecosystem Modelling (Mark Gibbs)

4.6 Motueka Catchment Futures (Anthony Cole)

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Sub-Catchments

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