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# Integrated Catchment Management


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# What is “integrated catchment management”?

*Integrated Catchment Management is a process that recognises the catchment as the appropriate organising unit for understanding and managing ecosystem processes in a context that includes social, economic and political considerations, and guides communities towards an agreed vision of sustainable natural resource management in their catchment*

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# Integrated catchment management

*Aim:* Integrating biophysical, ecological and social research for catchment-scale management of water resources.

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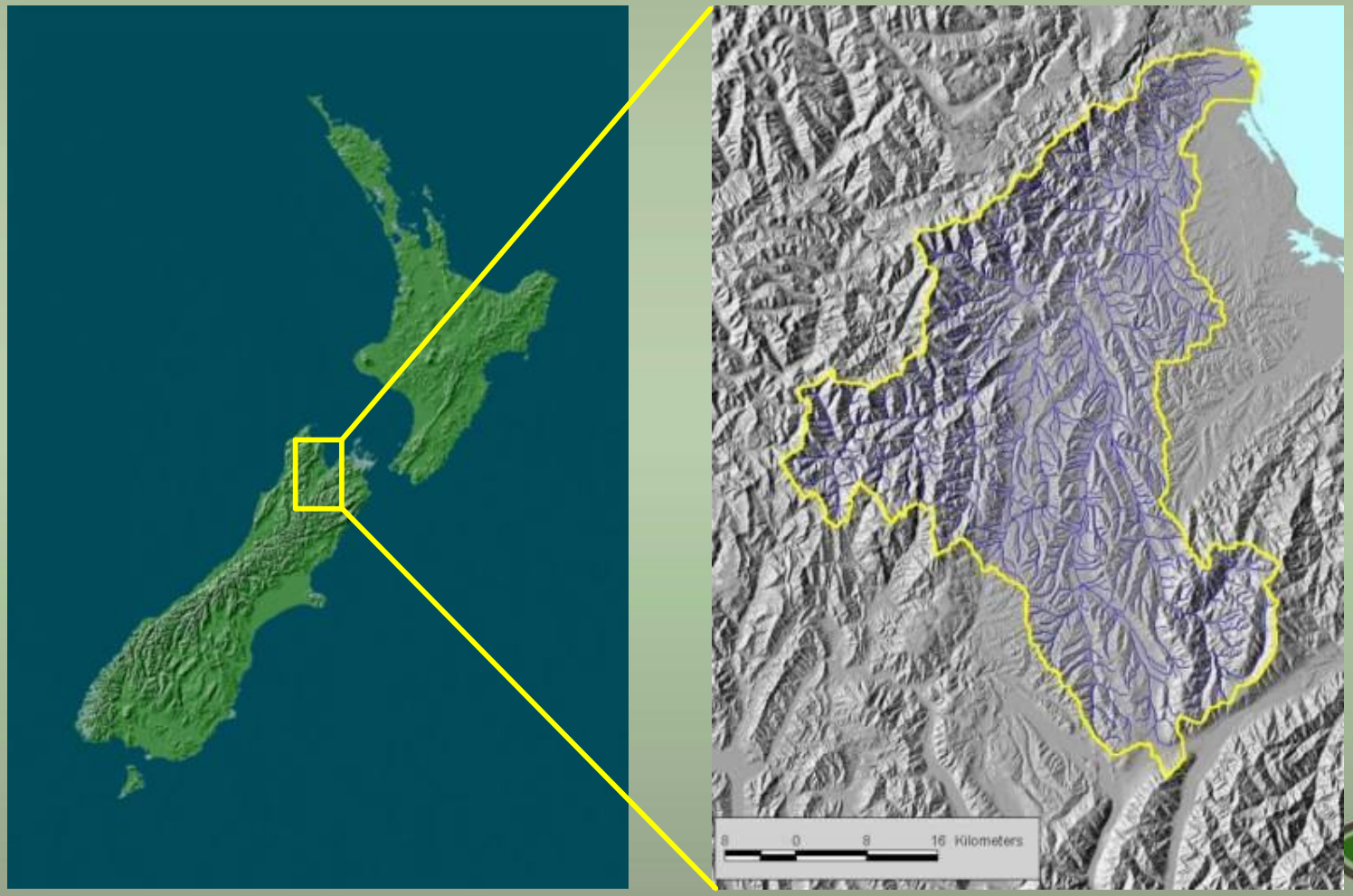
# Integrated catchment management

*Outcome:* Improved management of, and social learning about, land, freshwater, and near-coastal environments in catchments with multiple, interacting, and potentially conflicting land uses.

# Context

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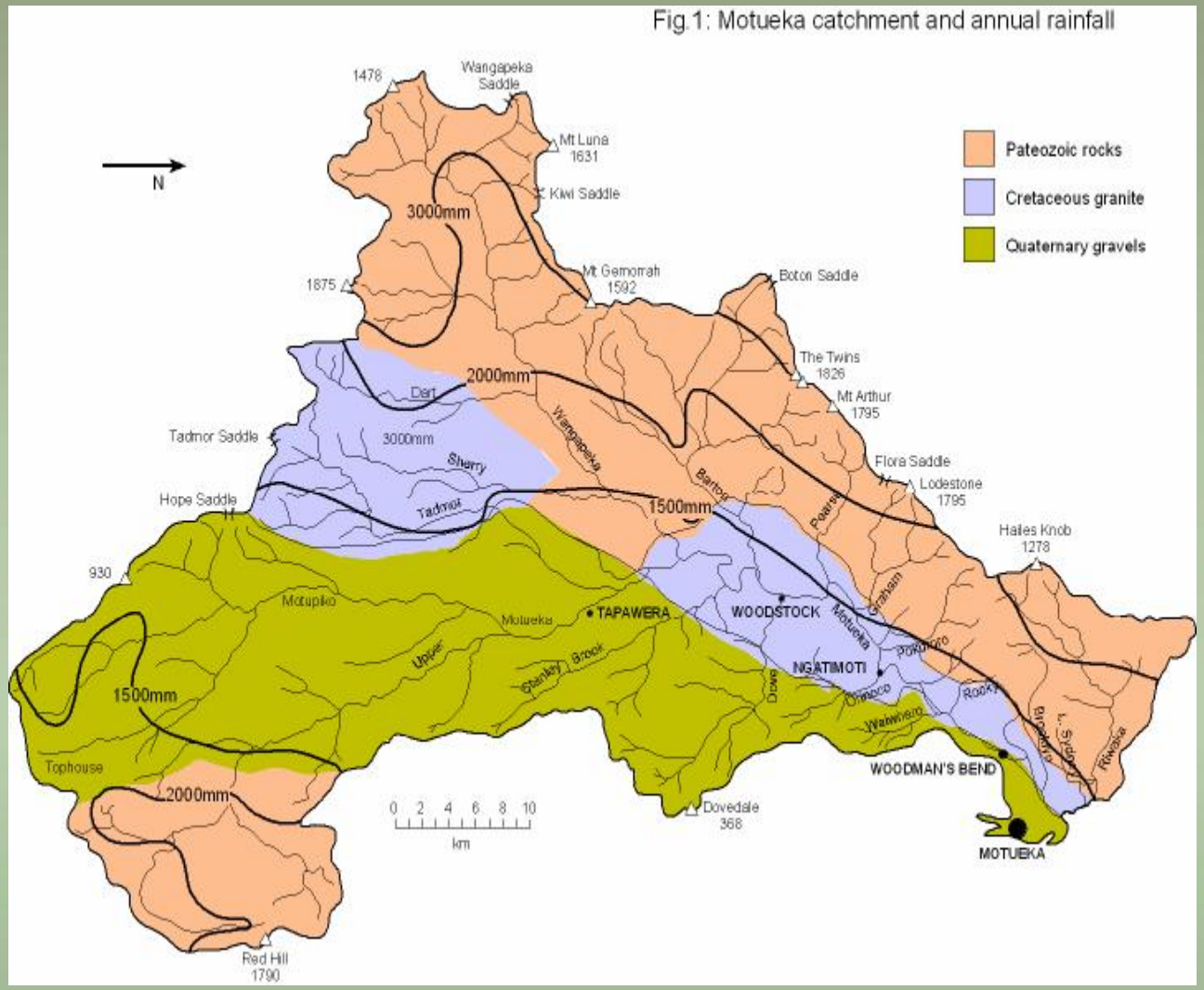


2200 km$^2$; complex geology; and strong rainfall gradient.

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Indigenous forest in high-rainfall upper catchment. Used for biodiversity conservation, tourism, recreation.

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Plantation forests on Moutere gravel hill country, mid-upper catchment

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Sheep and beef farming on extensive areas in mid-catchment

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Intensive horticulture at lower end of catchment

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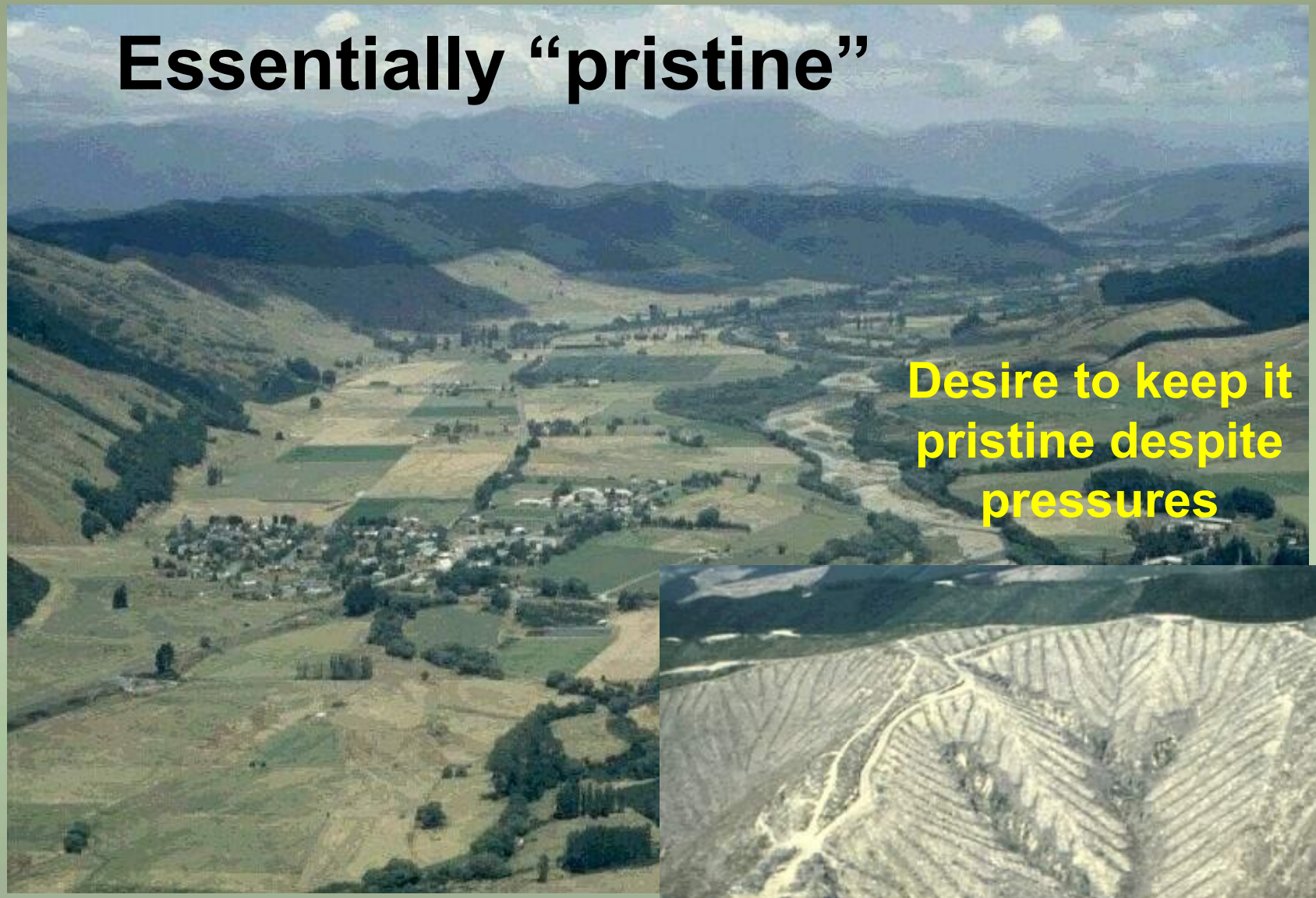
# Essentially “pristine”



Desire to keep it pristine despite pressures

# Social learning and community participation

**Community reference group and community engagement**

**Iwi partnership**

**Social learning**

Learning that occurs only when people engage one another, sharing diverse perspectives and experiences to develop a common framework of understanding and basis for joint action

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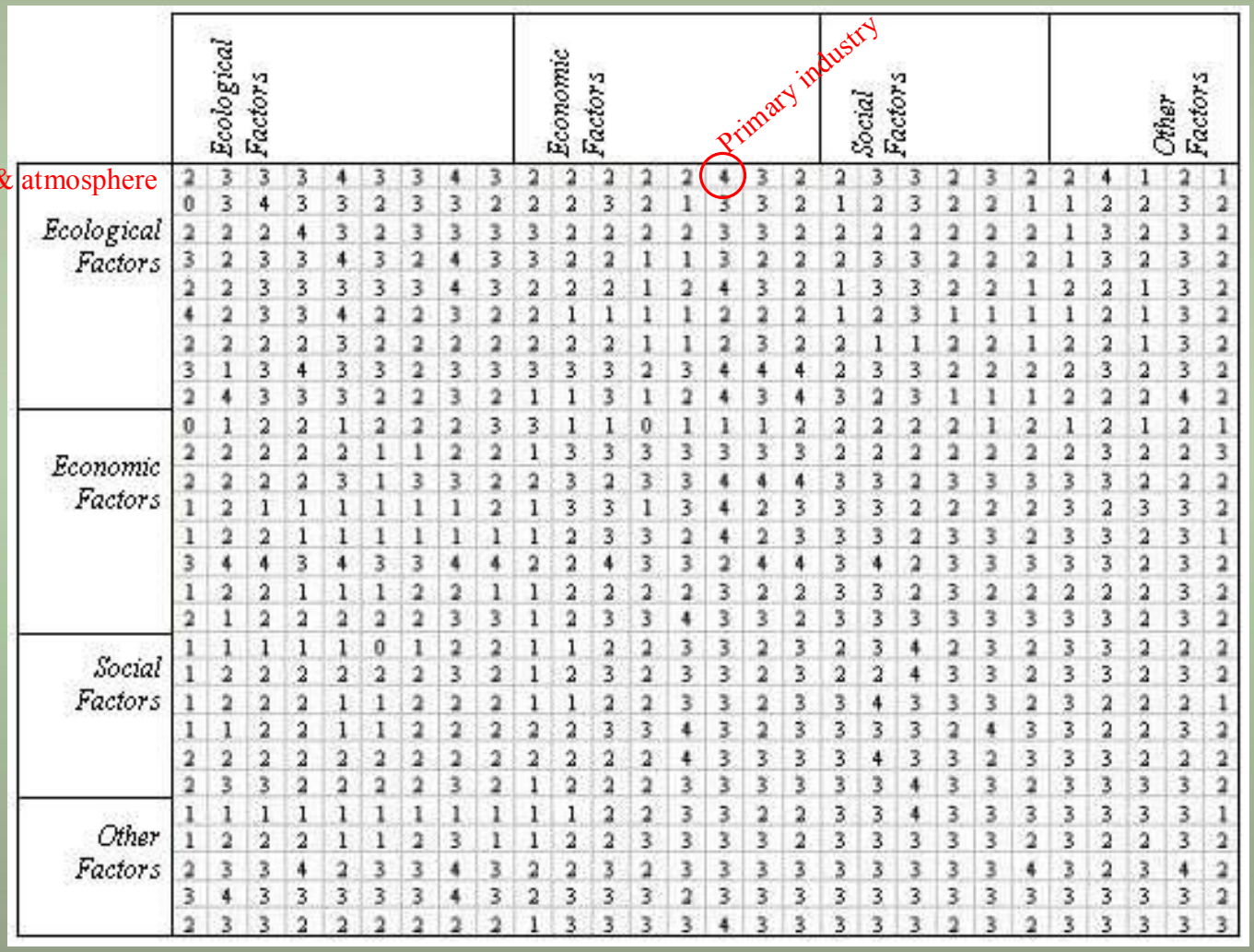
# Influence matrix to help define research agenda and understand catchment interactions

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# Influence Matrix

| The effect of these factors on… | Groups | Factors | … on these factors. Forestry | Farming | Sediment | Nitrate | Profit | Cashflow | Qual of life | Com health | Col sums | How these factors affect other factors. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Ecological | Forestry | -- | 0 | 1 | 1 | 5 | 4 | 2 | 1 | **14** | |
| | | Farming | 2 | -- | 4 | 5 | 6 | 5 | 3 | 3 | **28** | |
| | | Sediment | 0 | 4 | -- | 2 | 3 | 3 | 4 | 3 | **19** | |
| | | Nitrate | 0 | 2 | 0 | -- | 1 | 1 | 2 | 5 | **11** | |
| | Economic | Profit | 6 | 6 | 0 | 0 | -- | 5 | 5 | 1 | **23** | |
| | | Cashflow | 5 | 5 | 0 | 0 | 5 | -- | 5 | 1 | **21** | |
| | Social | Qual of life | 2 | 4 | 2 | 2 | 4 | 4 | -- | 4 | **22** | |
| | | Com health | 0 | 0 | 2 | 2 | 2 | 2 | 5 | -- | **13** | |
| | | **Row sums** | **15** | **21** | **9** | **12** | **26** | **24** | **26** | **18** | | |

**How these factors are *affected by* other factors.**

Scoring: 0 = none 1 = trace 2 = weak 3 = modest 4 = strong 5 = substantial 6 = dominant

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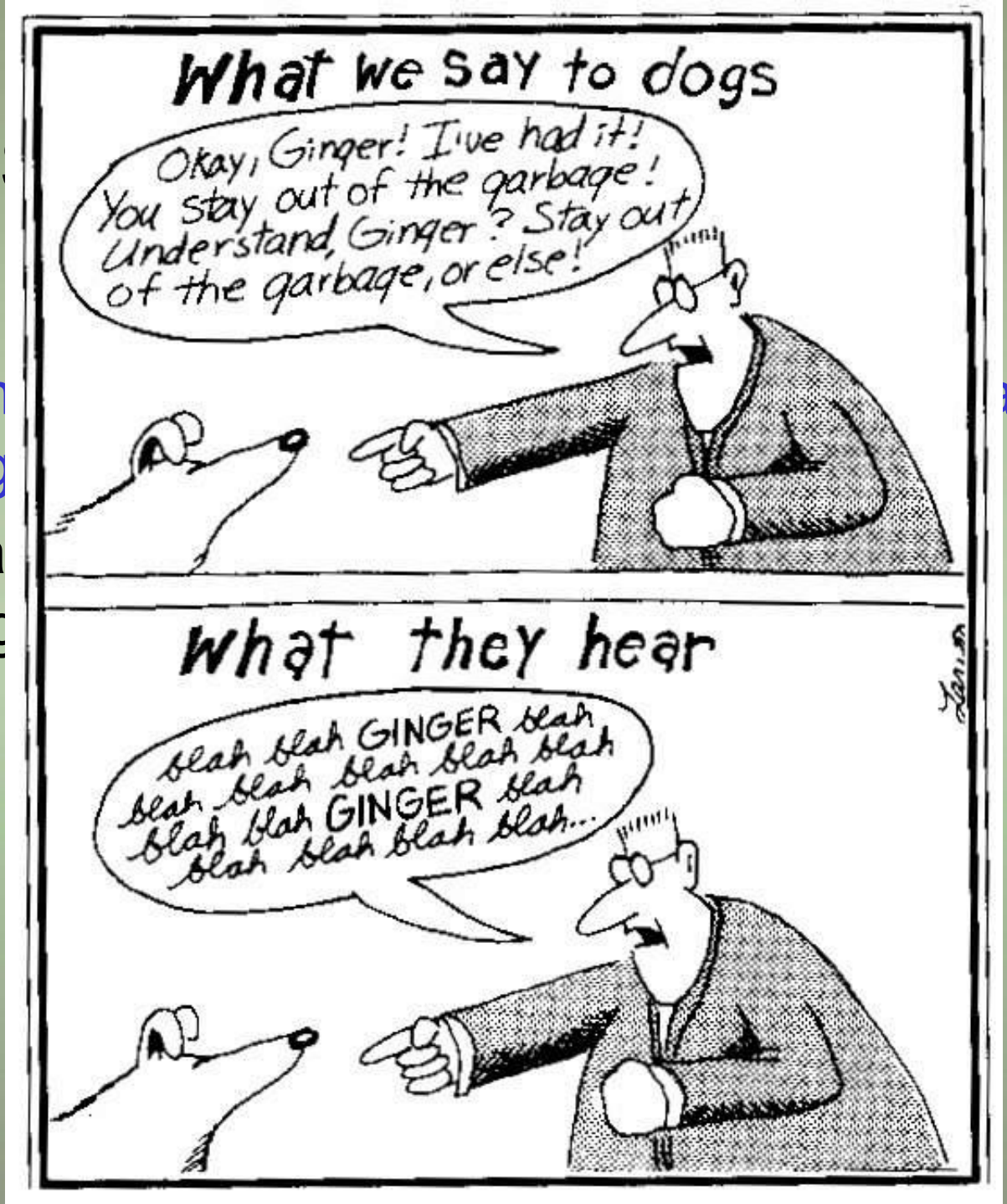
- Comm
setting
- How a
manag

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# Social learning in ICM

- Community participation in research agenda setting
- How are science results used by resource managers?
  - Designing appropriate disseminations toold (translations)
  - CD-ROM tool

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# Social learning in ICM

- Community participation in research agenda setting
- How are science results used by resource managers?
- Developing tools for stakeholder involvement
  - Models for working with iwi
  - Team evaluation guide
  - Stakeholder analysis

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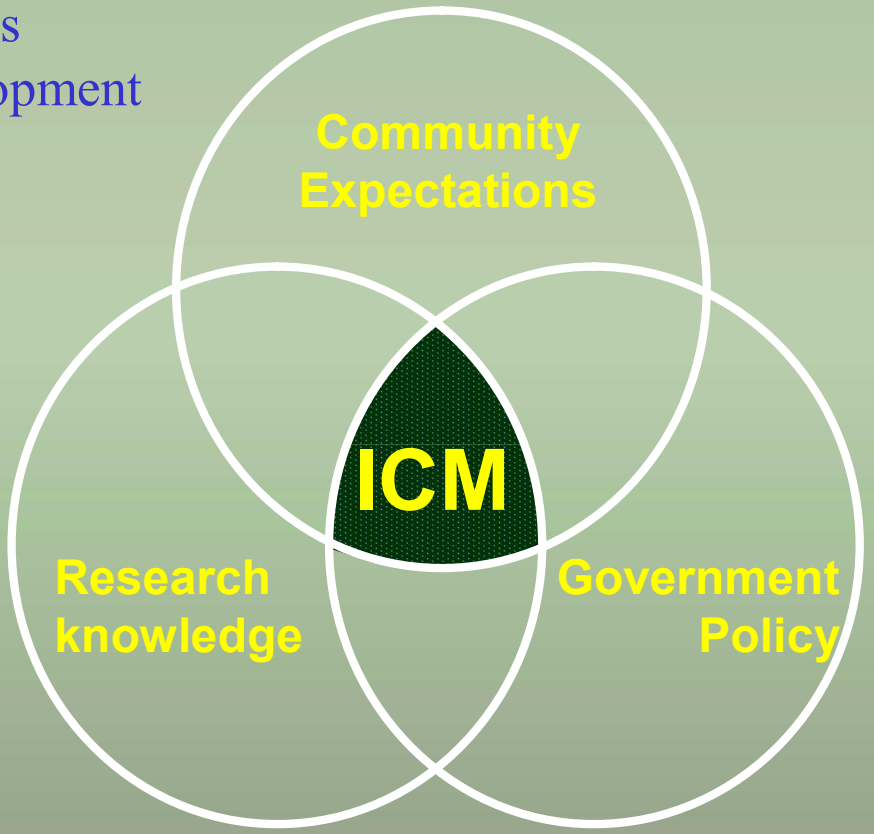
# Motueka Conservation Order

- Successful negotiation between parties

Protecting values
Irrigation development




Workable management regime

Flows
Trout habitat
Irrigation demand

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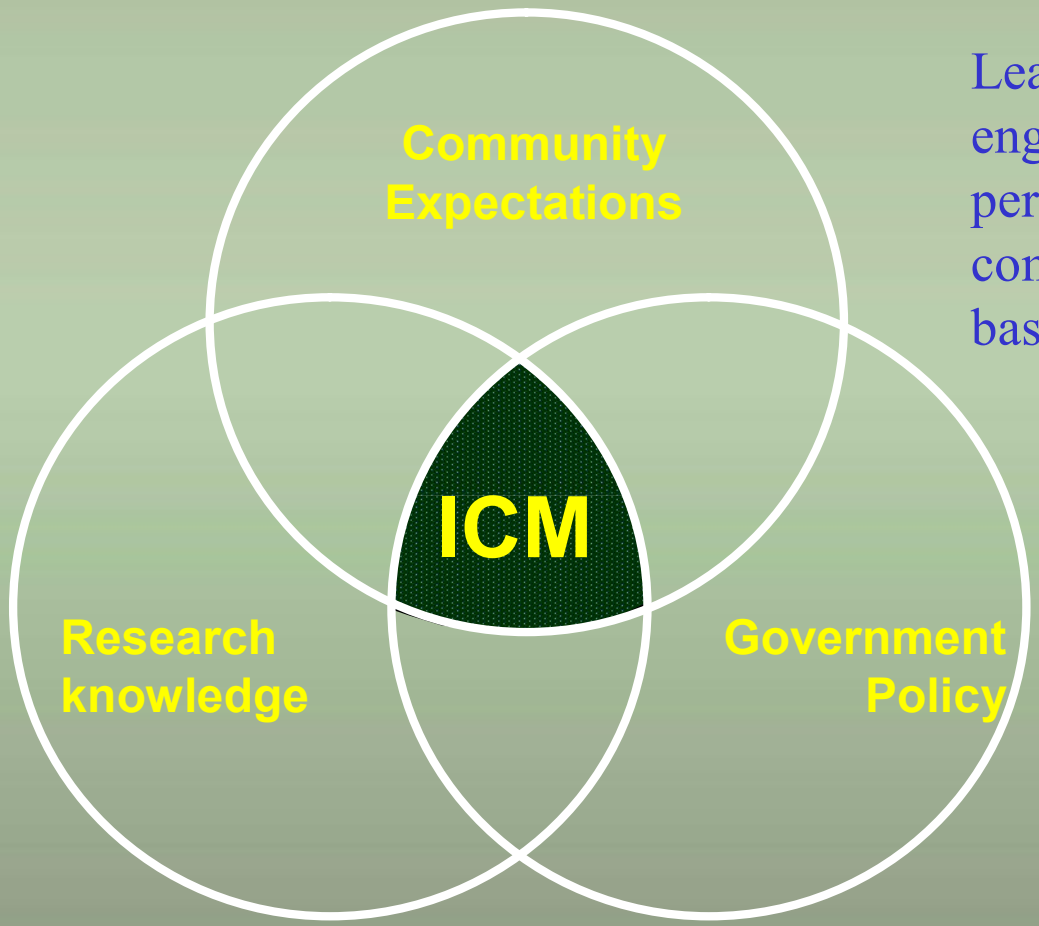
# ICM – social learning

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