Apologies

- Brendan Duffy
- John Hutchings
- Ian Cairns
- Murray Guy
- Jenny Mauger (Oriana Paewai after 1pm)
- Alistair Beveridge (until 11am)
- Elaine Reilly (until 11am)
- Jill White (after 3.30pm)

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Thursday 27 January – Agenda

- Agenda and matters arising from previous workshop
- Update on the model
- Action Plan document. Issues, indicators and measurement
- 10.30 Coffee break
- What is the condition of the catchments?
- Small group sessions:iwi, environment, land-use, councils/industry
- 12.30 Lunch
- Small groups continue
- Report back from small groups
- Iwi: questions and comments for the group
- 15.00 Coffee break
- Actions for next workshop/media comment?
- 17.00 (or earlier) Close

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Summary of Results from Midpoint Questionnaire

Prepared for Workshop on 27th January 2010

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Key Messages – Based on 14 (out of 18) Returned Questionnaires

- The confidence level that participants will arrive at a good action plan is neutral
- The usefulness of the Mediated Modelling process for the ongoing cycle of action planning is on average 3.7
- Relationship & trust building, development of a common understanding and small groups are working well
- Some things could be done better:
  - Provision of more clarity around expectations and how to get there
  - Discussion to be kept more on track, find better ways to get to group consensus rather than following the lead of the more vocal participants
  - More user friendly presentation of the model
  - More science to help better informed decision making
  - Better management of newcomers to the table
- Major 'Aha' moments were around the amount of work that Horizons appears to have done, while at the same time lacking good relationships with stakeholders, in particular iwi. Participants were divided in their perception on whether or not the voice of iwi is being sufficiently heard at this point in time
- More focus is required for action planning, science & knowledge sharing
- The focus for dialoguing, mediated modelling and trust building is about right

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Action Points and matters arising

- Action plan (agenda item)
- Report on mid-point survey
- Model and role in Action Plan process
- Need for science and work underway
- Small group work-streams
- Follow-up actions from previous workshop
  - Summary of current actions from other stakeholder groups
  - Action underway (by main dischargers) provided to IFS team

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Action Plan document

Action plan is presently:

- Goals (from the Accord)
- Indicators of success
- Key issues
- Solutions
  - Water quality issues
  - Water quantity issues
  - Natural capital

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Action Plan document

A suggested alternative is:

- Introduction and Goals (from the Accord)
- Indicators of success – here or at the end with monitoring??
- Key issues - brief description of the main issues (and possibly actions on them e.g. SLUI)
- For each sub-catchment
  - Present condition
  - Issues
  - Desired state
  - Actions
- Monitoring

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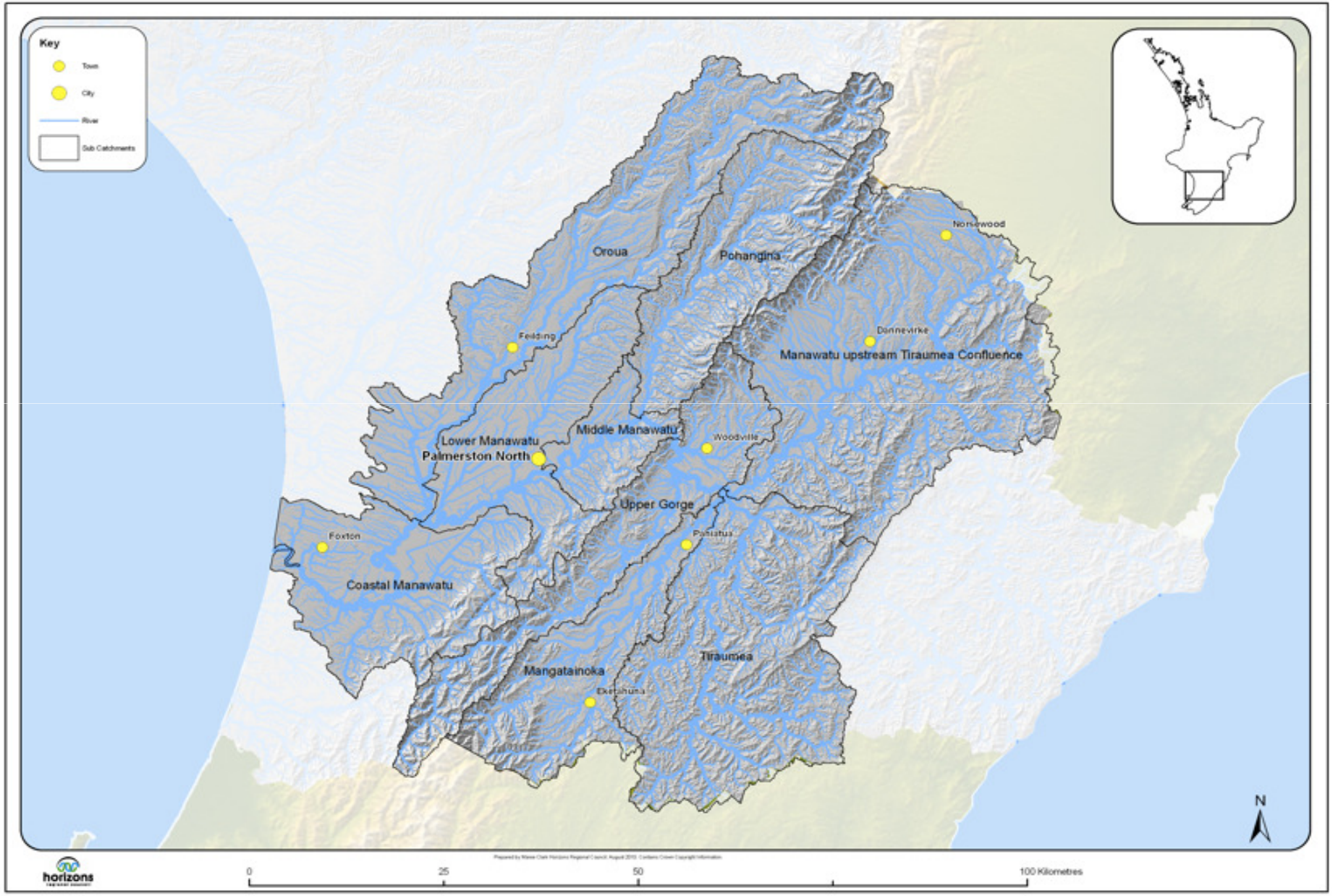
Catchments of the Manawatu River



What is the condition of the sub- catchments?

For each of the 9 sub-catchments let's identify:

- Their present condition (benchmark),
- What are the issues, and
- What would be an acceptable state (target)

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Small groups

Land-use

Alistair Beveridge (facilitator)

Gordon McKellar

Jon Roygard (and councils/industry)

JH alternate? (*John Hutchings)*

Ian Cairns

Environment and community

Jason Roxburgh (facilitator)

Elaine Reilly

Christina Paton

Corina Jordan

Joan Leckie

Iwi

Paul Horton

Oriana Paewai (*Jenny Mauger)*

Michael Cribb

Robert Warrington or Marokopa

Councils and industry

Wally Potts (facilitator)

Jono Naylor

Michael McCartney

Jill White (*Murray Guy)*

Murray van der Maas

Brendan Duffy

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Questions for Iwi

1. Collaboration in governance has been identified as an aspiration of iwi. What could it look like in the Manawatu catchment under the current RMA and Local Government legislation? (We need to recognise that this process is not part of the wider treaty negotiations process).

2. What actions could increase mana and pride that have not, or may not be, captured by other proposals? Are there opportunities for additional actions specifically targeted towards mana and pride?

3. Is the action planning process meeting iwi needs? If not, what would improve it?

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Questions for Environment and community

1. What actions can the environment sector contribute (or is already contributing e.g advocacy, monitoring)?

2. How should the Action Plan be formatted so it flows logically and is accessible and understandable to a wide audience?

3. Communication and community buy-in: How can we communicate what we are doing and ensure that the public understands and supports the eventual plan? This will mean considering how to get buy-in from farmers.

4. Is there anything else that this group thinks we should be addressing i.e have we got the focus on the right things?

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Questions for Land-use

1. Does the material gathered so far include all the actions and proposed actions in this sector? If not, please identify the gaps and preferably initiate or at least suggest ways to collect this.

2. Considering what we know about the agreed issues and condition of the catchments, and actions (existing or proposed), are there opportunities to do more? If so, please identify, cost and prioritise them?

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Questions for councils/industry

1. Does the material gathered so far include all the actions and proposed actions in this sector? If not, please identify the gaps and preferably initiate or at least suggest ways to collect this.

2. Considering what we know about the agreed issues and condition of the catchments, and actions (existing or proposed), are there opportunities to do more? If so, and if possible, please identify, cost and prioritise them?

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Actions for the next workshop

- Field-trip?
- Small group actions
- Participant actions
- IFS team actions
- Richard actions
- Other actions?

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Principles for Collaborative Decision Making

- Call before going to the media to avoid surprises as a curtsey.
- Maintain good faith and a sense of urgency.
- To actively listen and share concerns and information until the group gains a common understanding
- All ideas and solutions belong to the group, rather than individuals.
- Differences in perspectives are embraced and seen as an opportunity for creativity and synergy = a challenge to the whole group to push boundaries
- At times the participants might agree to disagree and record this decision together with a pathway to gain further insights in order to arrive at a joint view later
- Ensure that the key messages are clear from each workshop for public consumption

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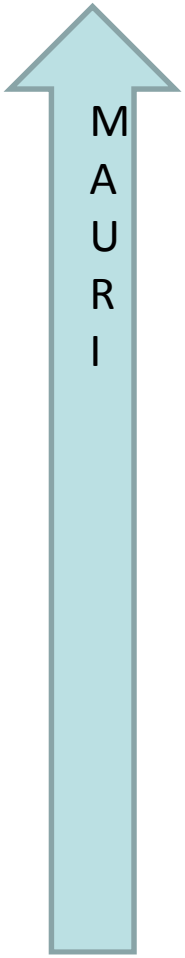
The River as a "Provider" and Life Form in Itself

1. Cultural and spiritual essence of the river
2. Customary food sources in the river
3. Introduced food species in the river
4. Drinking water for people and stock
5. Swimming other recreation/tourism
6. Food outside the river – traditional plants, agriculture
7. Flood Protection
8. Gravel/sand extraction
9. Electricity generation
10. Transport/shipping

Can we make the assumption that the Mauri of a river is more likely to be intact in a river that can provide service 1 (-6?) than a river that can only provide services 5 - 10?



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The Goals

The Accord Goals state:

- The Manawatu becomes a source of regional pride and mana
- Waterways in the Manawatu catchment are safe, accessible, swimmable, and provide good recreation and food resources
- The Manawatu Catchment and waterways are returned to a healthy condition
- Sustainable use of the land and water resources of the Manawatu Catchment continues to underpin the economic prosperity of the Region

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Key Issues Impacting on River Health – A Brief Summary

As a 'Rule of Thumb":

- Most of the time, 90% of the concern for the river is about water quality – 10% about water quantity
- In times of drought or flood 90% of the concern is about quantity – 10% about water quality

Water Quality I = Habitat = Physical

- Sedimentation from hill country: 50%
- Sedimentation from low country (caused by river engineering?): 50%
- Man made modification to riverbeds (e.g. gravel removal, erosion control, dams, etc.)

Water Quality II = Water 'Chemistry'

- Land use= urbanisation, industrialisation, farming, forestry and conservation land
  - Non point discharges ca. SIN 97%; DRP 80 – 85%
  - Point discharges ca. SIN 3%; DRP 15 – 20%
  - Note: at low flows (< 20% of the time) in the Upper Manawatu the point sources DRP contributes up to 66% of total DRP – (this is caused by one point discharger?)
  - Others such as E-coli, toxins, turbidity, temperature.....

Water Quantity

- Water allocation and usage (urban, industrial ,agriculture, minimum flows) required to sustain biodiversity

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Potential Outcomes, Indicators, Physicochemical and Action Progress related Measurements for Discussion

Desired Outcomes have been expressed in the Accord Goals – the following measurements could be used to assess how well the goals are being met:

Outcome Measurements

- Swimmable days November – April = % of days complying with swimming guidelines at selected measure points: 62 – 98% between 2006 and 2008
- Number of trout per km

The following river health related indicators are in the public domain and likely to contribute to the desired outcomes:

Indicators

- CHI (Cultural Health Indicator) – TBD (e.g. Landcare Research Initiative)
- MCI (Macroinvertebrate Community Index) – Manawatu near PN = < 80 = poor
- Biodiversity – ca. 60% of native fish, shellfish and crayfish in catchment are endangered

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Potential Outcomes, Indicators, Physico-chemical and Action Progress Related Measurements for Discussion

Physicochemical Measurements

The combination of physicochemical measurements and their values provides the underlying factors that impact on indicators and ultimately the desired outcomes.

- DO (Dissolved Oxygen) = amongst the highest measured worldwide (in particular at Hopeland and Opiki) = very poor
- Nutrient Water Quality league table (Nitrate and Phosphorus) = 3 Manawatu sites out of 77 sites in NZ put Manawatu in positions 57 (@ Teacher's College), 63 (@ Weber Road) and 72 (@ Opiki)
- Deposited sediment – TBA

Action Progress Measurements (also called Action Pressure Indicators)

These measures will help to monitor progress against agreed actions in absence of immediate changes to the physicochemical measurements. Examples could be:

- Number of kms of streams fenced against agreed target
- # ha converted to e.g. forestry or wetlands against an agreed target
- Reduction of point discharge values (quantity or loading) against agreed target

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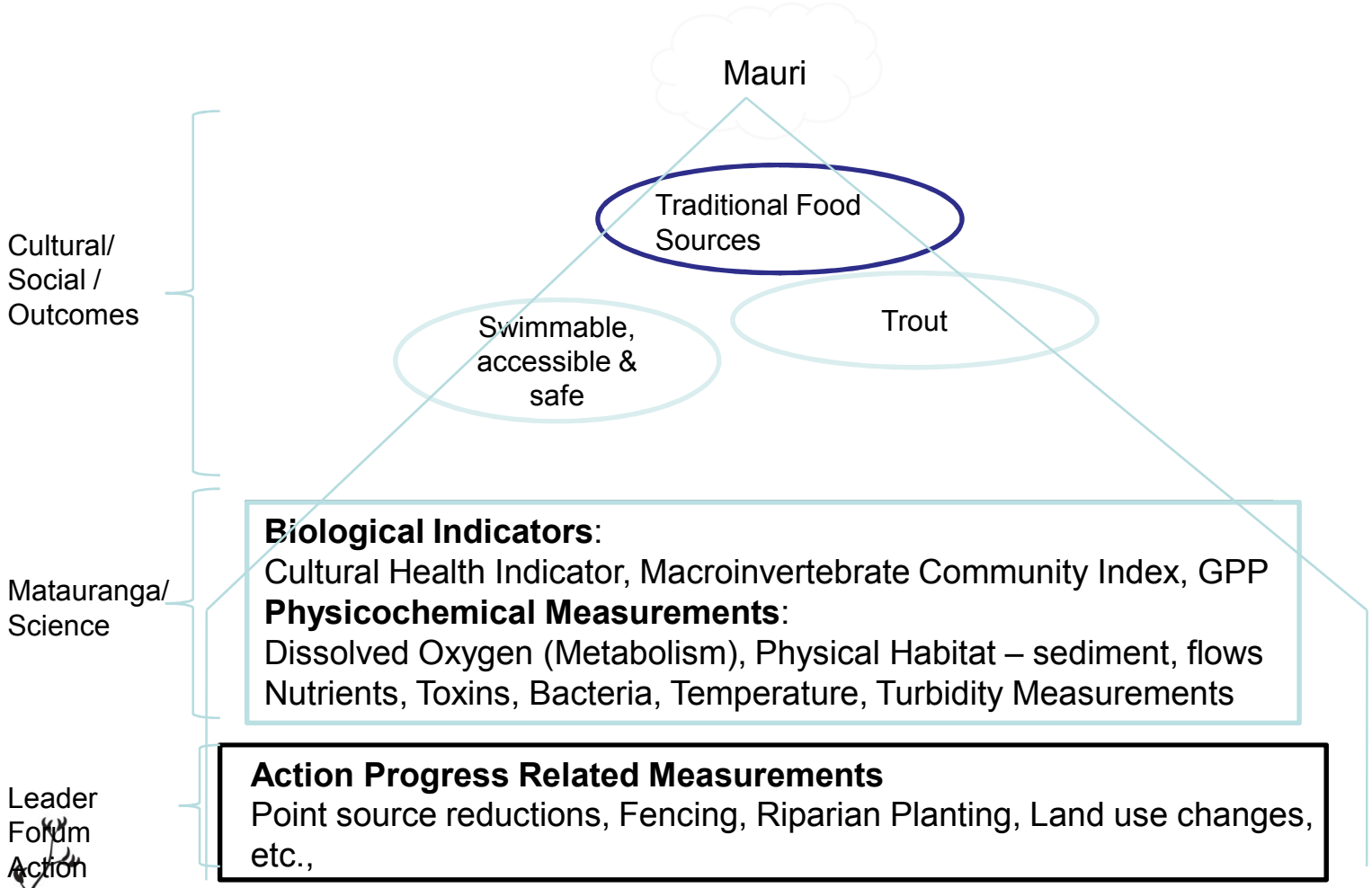
Outcomes – Indicators – Physicochemical and Action Progress Measurements for River Health Assessment



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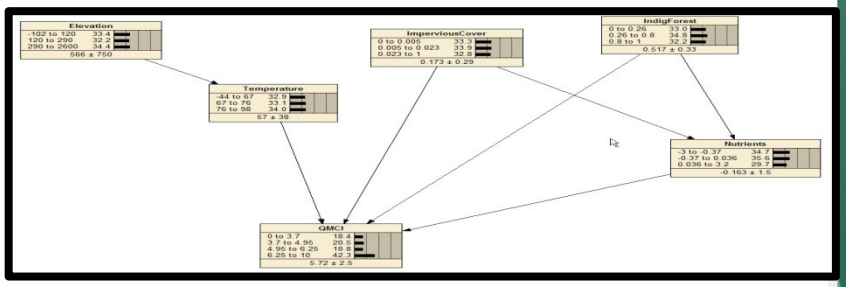
Spatial modelling of the Manawatu River ecological integrity

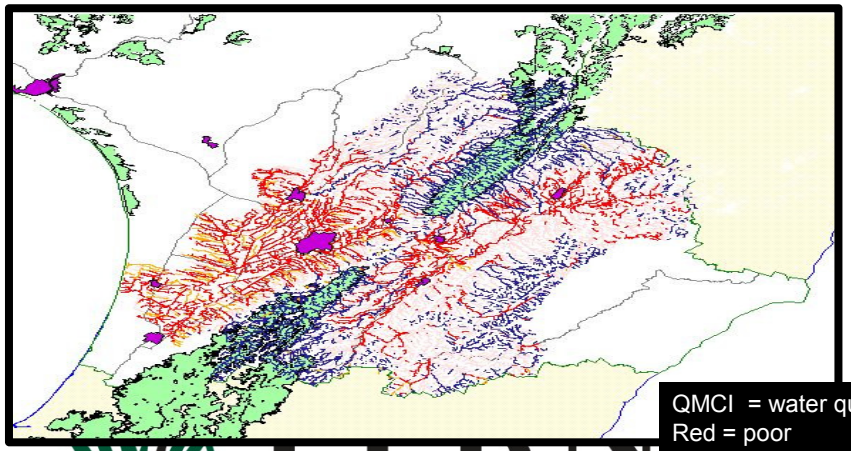
Bayesian Belief Modelling (BBN)

- Advantages
  - Hierarchical structure.
  - Forward and backward prediction.
  - Can have causal links via intermediary variable.
  - Can add direct knowledge if available.
  - Results in real time.
- Disadvantages
  - Discretization of data into groups.
  - Data expensive.

Initial BBN developed to model QMCI from FENZ (National scale) data

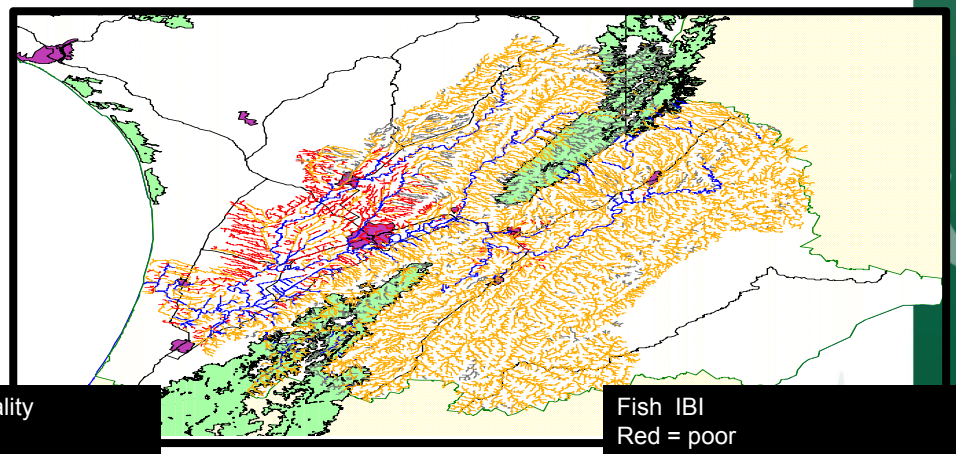


QMCI of Manawatu Catchment from BBN.



QMCI = water quality
Red = poor
Orange = mild to moderate
Blue = clean
Clear = unknown

Fish IBI indicating current state of fish communities in Manawatu Catchment



Fish IBI
Red = poor
Orange = mild to moderate
Blue = good
Purple = excellent
Grey = no fish (natural)

Next Steps

1. Include more catchment specific data from Horizons in BBN model. Hopefully including dep
2. Include measures of land use intensity in BBN model (currently only at pasture / no pasture
3. Include measures of point source discharges in model.
4. Develop combined model of fish (IBI), invertebrate (QMCI) and swimability (? E coli, turbidity, periphyton)

Russell Death, Fiona Death, Mike Joy and Ro

Institute of Natural Resources – Ecology, Massey University