The "Water Wheel"
A collaborative approach to Limit Setting & Operating Within Limits

GROUNDWATER   IRRIGATION   RESOURCE CONSENTS   LAND USE IMPACTS   WASTE TREATMENT   WATER MANAGEMENT

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Waterwheel Research Programme

- Aims to improve decision making processes that set standards and limits for water flows and water quality.

- In practical terms these decisions establish, *inter alia*:
    - Minimum Flows *("Hands Off Flows")*
    - Allocation Limits
    - Nutrient Load Limits
    - Conditions (constraints) in consents.

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Why are improvements necessary?

- Demands on water are increasing – affect quality & quantity.
- Expectations increasing – higher quality, more flow.
- Increasing belief that catchments are over-committed.

- Decision making increasingly litigious.

- Fractured communities.
- High cost to all participants – time and $'s.
- Doubts about the decisions actually delivering results that people are prepared to live with.
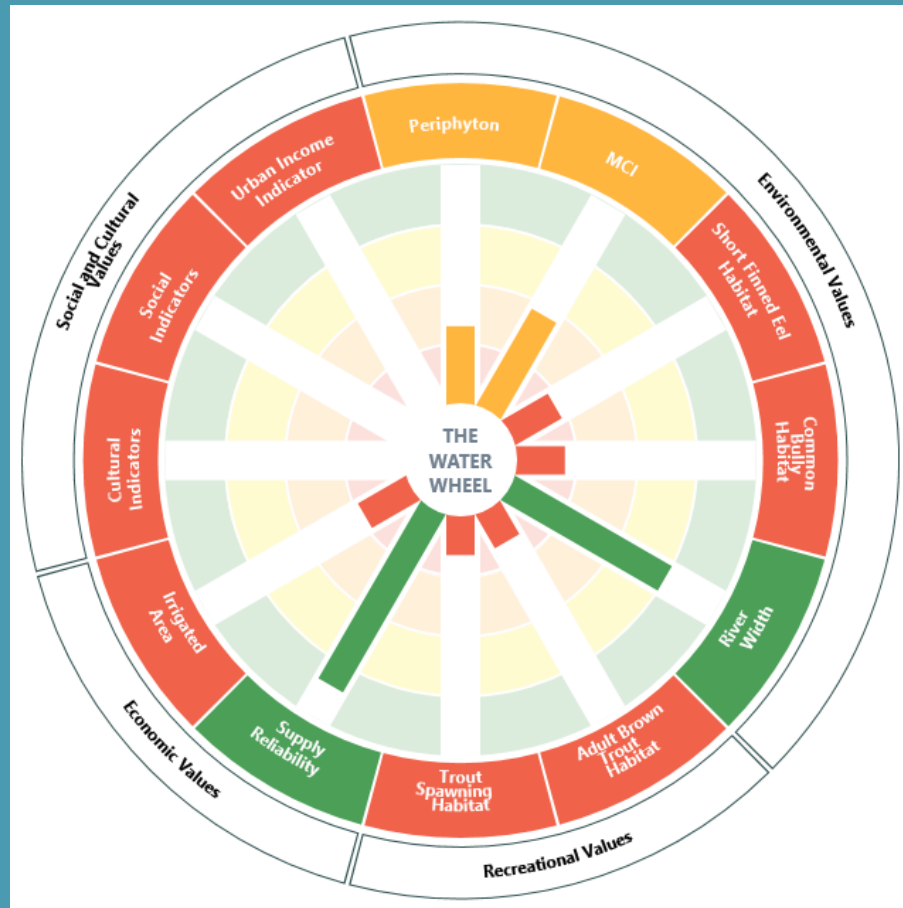
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The Water Wheel approach

- Setting limits on resource use almost always involves making trade-offs.

- The Water Wheel is an approach to setting limits that is designed to be:
  - Integrative (environment, economy, cultural, social)
  - Transparent
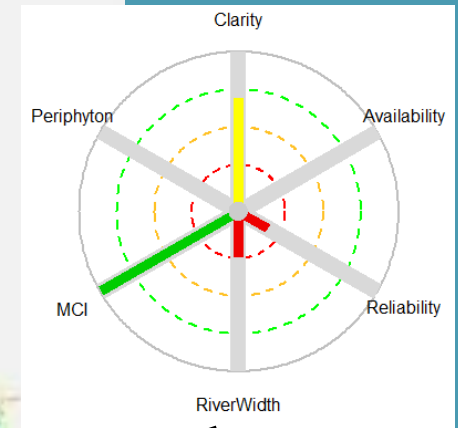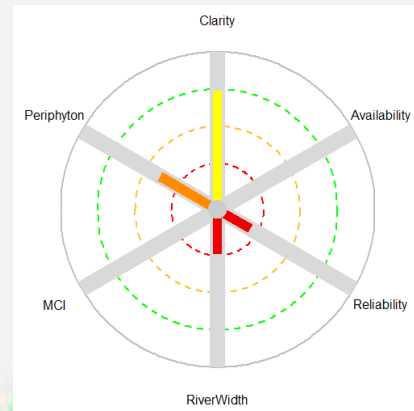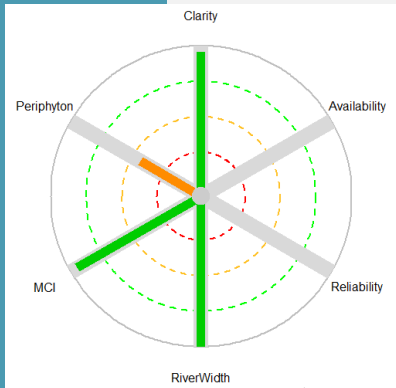 - Proactive
  - Collaborative

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WaterWheel Framework – 3 Components

Example of a Water Wheel diagram

Water Wheel diagrams can be used at multiple locations in a catchment
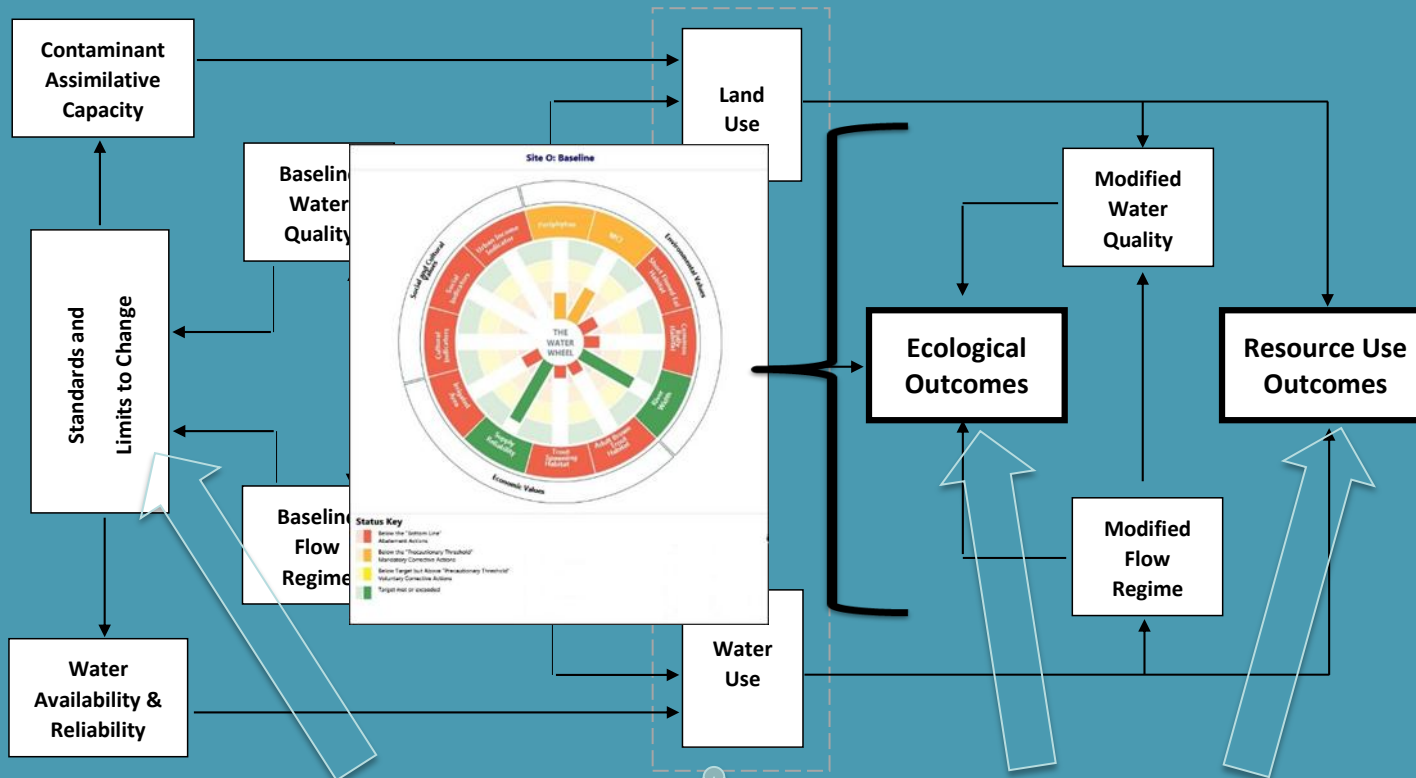
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A Key Question..

How much should the status of some attributes be allowed to reduce in order to allow the status of other attributes to increase?

Values and their attributes are Connected.

Need to understand these connections to be able to answer this question.
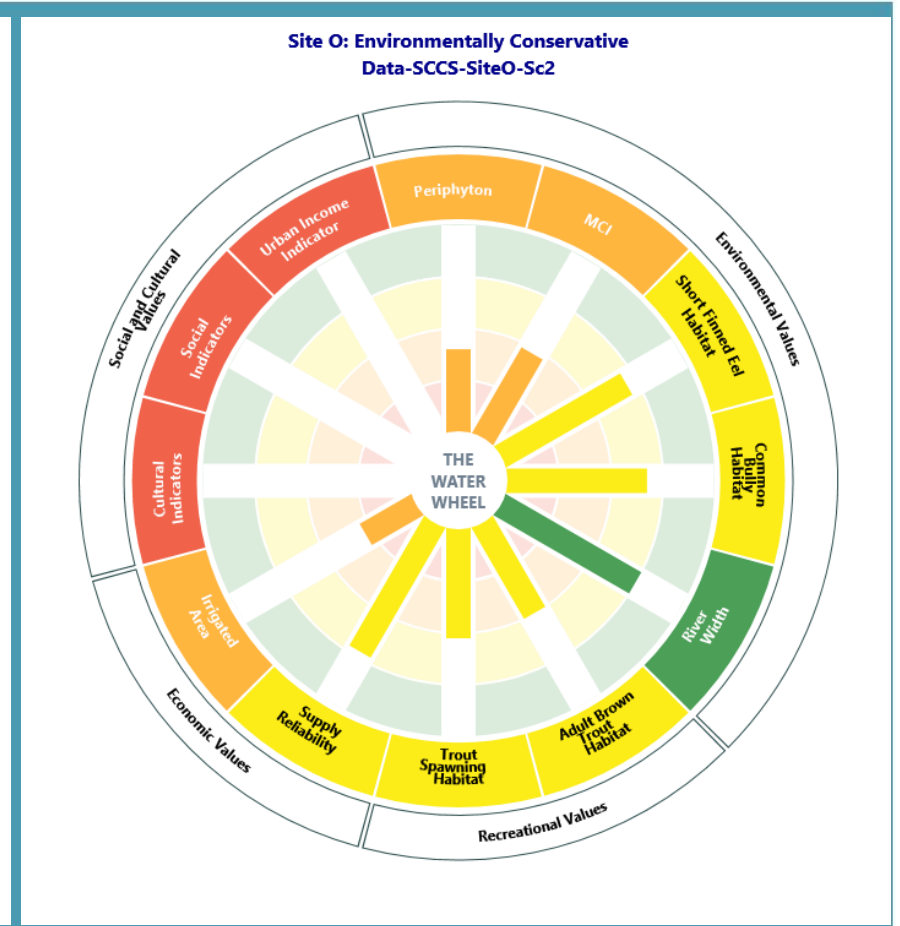
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An illustration of how things are connected
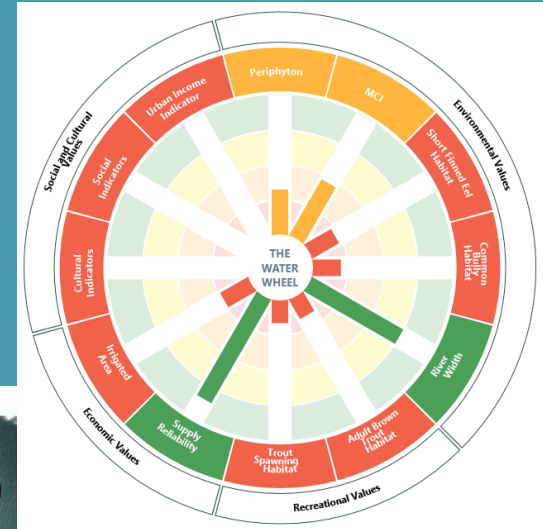
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Examples of Water Wheel diagrams

Where can we contribute

Catchment modelling

Process review & refinement

Indicator development & scenario evaluation

Project funding

Research project is funded by MBIE

Our contribution to the Takaka process would be covered by MBIE provided it fits within the terms of our contract with MBIE.

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Thank you for listening.

Questions?

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