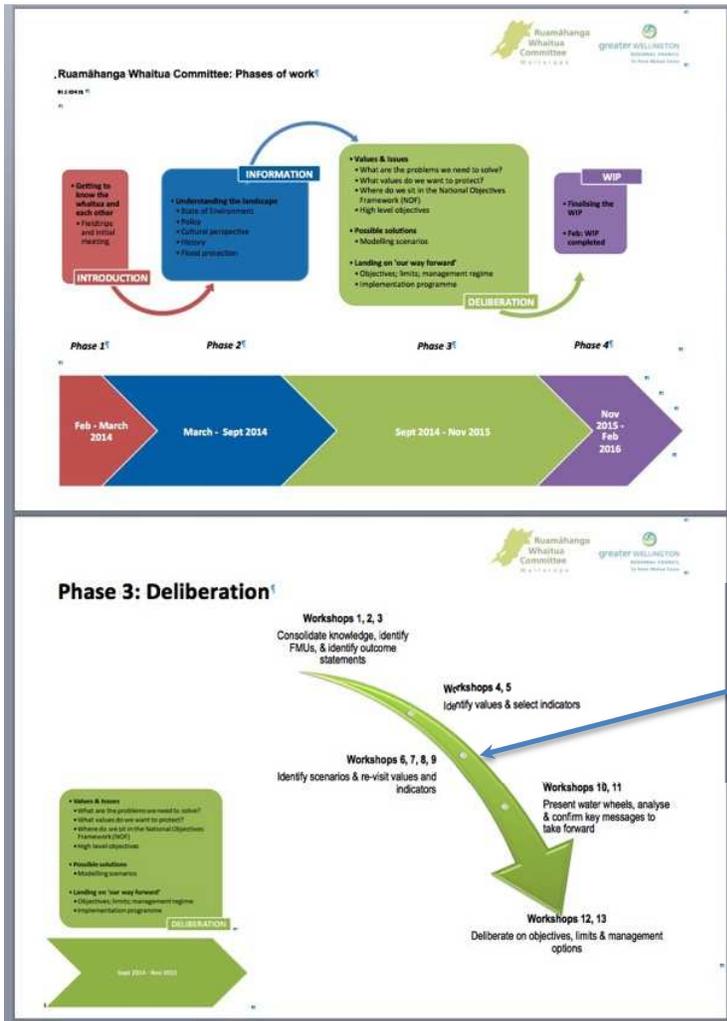


Meeting Notes: Ruamāhanga Whaitua Committee

Deliberations Phase 3 - Workshop 18

March 23 2016 4:00pm – 8:00pm

WBS Room, Greytown Library



Summary

This report summarises notes from a workshop of the Ruamāhanga Whaitua Committee held March 23 2016 at the Greytown Library.

Contents

These notes contain the following:

- A Workshop Attendees
 - B Workshop Purpose
 - C Follow up to previous workshop actions
 - D Scenarios: what they are, how they help us, and how they are built
 - E Farm Level Mitigation Options
 - F Bayesian Networks.
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A Workshop Attendees

Workshop Attendees

Aidan Bichan, Peter Gawith, Mike Ashby, Russell Kawana, Ra Smith, Philip Palmer, Andy Duncan, Colin Olds, Esther Dijkstra Vanessa Tipoki, Chris Laidlaw, Rebecca Fox

Alastair Smaill, Kat Banyard, Michelle Rush, Natasha Tomic, Hayley Vujcich, Horipo Rimene, Mike Grace

John Bright, Richard Storey, Richard Muirhead, Jess Grinter

Apologies: Mike Birch, David Holmes

B Workshop Purpose

Workshop Purpose

The workshop purpose was to:

To build an understanding of policy options and how they fit into scenarios and scenario modelling, and specifically:

- why bother with scenarios (their use to policy decisions)
- the components of a scenario
- how to develop a scenario
- how, and to what extent, modelling one or more scenarios can support RWC in its eventual decision making

To build an understanding of what, and where, modelling of farm level management options informs the Collaborative Modelling Project:

- to discuss a series of options, and to decide which of these, the Committee would like to see modelled

To understand what a Bayesian Belief Network (BBN) is, how it works, and how such a network is informing the ecological modelling component of the

Collaborative Modelling Framework.

- To understand where the ecological modelling component fits with the wider Collaborative Modelling Framework.

The workshop purposes were achieved.

Workshop Agenda

The workshop agenda was:

Welcome (Peter Gawith) **and Karakia** (Ra Smith) (4:00-4:10PM)

1. **Policy options and scenarios** (Al Smaill) (4:10-5:00PM)
2. **Farm level management options – selecting a preferred set** (Richard Muirhead, AgResearch) (5:00-6:00PM)

Dinner (6:00-6:30PM)

3. **Ecological Modelling –the Bayesian Belief Network** (Richard Storey, NIWA) (6:30-7:30PM)
 4. **General business** (Peter Gawith) (7:30-8:00PM)
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C Follow up to previous workshop actions

Follow up to previous workshop actions

FMU Review by Ton Snelder

Alastair advised RWC members on the approach that Ton will take to this work: He will start by exploring alternative management classifications for the Ruamahanga which will be used to determine management zones which will form the basis of FMUs. He will then look at identifying ‘administration points’.

Water Allocation and Andy Duncan’s concerns / suggestions

At the RWC December meeting, water allocation policy issues were identified and discussed in respect of four dimensions: limits; reliability; allocation efficiency and use efficiency. The next step is to look at policy options to deal with these. Project team staff have work under way to identify a range of policy options and their pros and cons, with the expectation to bring these to the committee for discussion in 4-6 weeks’ time.

Technical work into understanding why ‘low flow’ is decreasing is also under way. A question that this raises for any policy response is what might happen if this continues? A scenario could be developed and then modelled that would enable RWC to see what might happen in this situation, i.e. testing what might happen if we change nothing about the existing policy framework. The modelling done could then help RWC understand what and where the impacts might be on the various values of importance.

D Scenarios: what they are, how they help us, and how they are built

Policy Options and Scenarios

Alastair Smaill gave a presentation on policy options and scenarios, and explained what scenarios are and how they can provide information that the committee can use to help guide its decisions about objectives, policies, methods, targets and limits for freshwater.



Presentation by Al
Smaill on policy and sc

Discussion points:

- Need to keep up to date with the progress of the regional plan and understand the focus of pre-hearing meetings to see the big things that might affect the whitua.
- Discussed how do you build investment and how could the whitua committee facilitate this?
- There are limitations in the RMA about charging for water. There are schemes where you are charged for moving water around but the water itself is free. The committee have a lot of flexibility around the issue of water allocation. Some discussion about the use of water allocation schemes as an administrative method.
- Objectives – test policy options through scenarios to see if they meet the objectives. Or you can pick policy options and see what that gives you. Ideally you would approach it from both ends – operational and conceptual.
- The outputs of multiple scenarios will help the committee decide what level towards the objective they can agree on.
- Modelling is a tool to aid decision making. Some things won't be able to be modelled but will form part of the decision making.
- Where does innovation fit? Innovation could be promoted through the policy framework. For example, what's Wairarapa best practice? Can it be done cheaper and be more effective – build policy that allows for this to happen.

E Farm Level Mitigation Options

Overview

Richard Muirhead, AgResearch, gave a presentation explaining how modelling of farm level management options informs the wider economics modelling as a part of the Collaborative Modelling Project. Richard outlined 5 options that could potentially be modelled, each of them representing a 'bundle' of policies, and asked RWC members to choose which 3 options they wished to see modelled.

Committee members debated and discussed preferences in small groups. Following the report back, a consensus was reached to have the following ‘bundles’ modelled:

1. The current policy
2. A combination of easy and medium mitigations
3. The hard mitigations

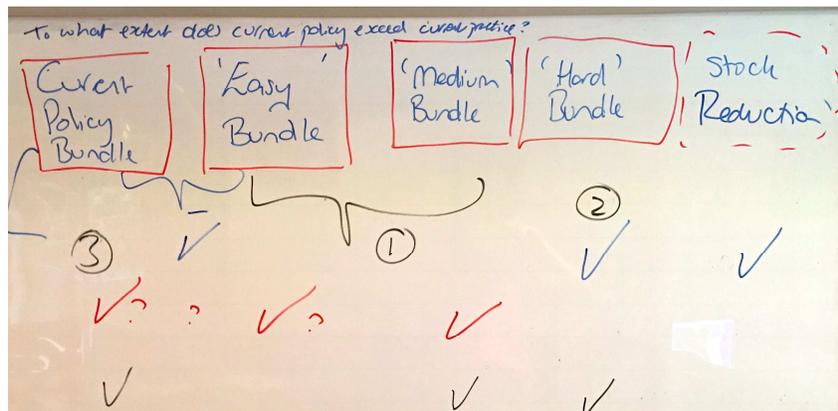
(Reduction in stock units will be included in all of the 3 agreed bundles)



Farm-scale modelling of mitigation options t

Discussion points:

- Concern about national level initiatives being used to model the Wairarapa situation when there might be better Wairarapa mitigations e.g. ponds for cow shed effluent vs wetlands in the Wairarapa. It would have the potential to remove X amount of contaminants, how that is done is then decided later on. The rest of the modelling is based on the Wairarapa context e.g. using the specific hydrology.
- Do any of the representative farms have buffer strips or sediment traps, and if not can it be modelled? It is highly likely that government regulation around stock exclusion will overtake regional regulation. The committee can choose to have regulation more stringent than this.
- Where does this fit with the economic modelling? The economic modelling will bolt onto all the scenarios at a catchment scale. The mitigation modelling is just one part and could be improved in years to come as innovations occur.



F Bayesian Networks

Ecological Modelling –the Bayesian Belief Network

Richard Storey explained what a Bayesian Belief Network is and how it will be developed and used in bringing together the ecological modelling component of the Collaborative Modelling Framework.



Introduction to Bayesian networks by

Q: How is a BBN optimised?
A: Through a sensitivity analysis.

Q: How does inclusion of social science change what we're looking at? E.g. less tangible elements such as wellbeing, cultural satisfaction etc.

A: It can be included, as long as there is some manner in which to quantify it. For the collaborative modelling project the BBN is being used for the ecological modelling only.

Following his presentation, RWC members split into two groups and workshopped through a freshwater related issue, creating a Bayesian belief network to explore relationships between the issue and chosen variables.

The pictures below show each group's work.

John Bright's Group: Issue: Build a dam or not

Issue: Dam or Not.

Values: Economics, Recreation, Ecosystems.

Attributes: Employment, Water skiing, Periphyton (% Indcon), GDP, # of accessible swimming sites, MCI, e.Coli.

Decisions:

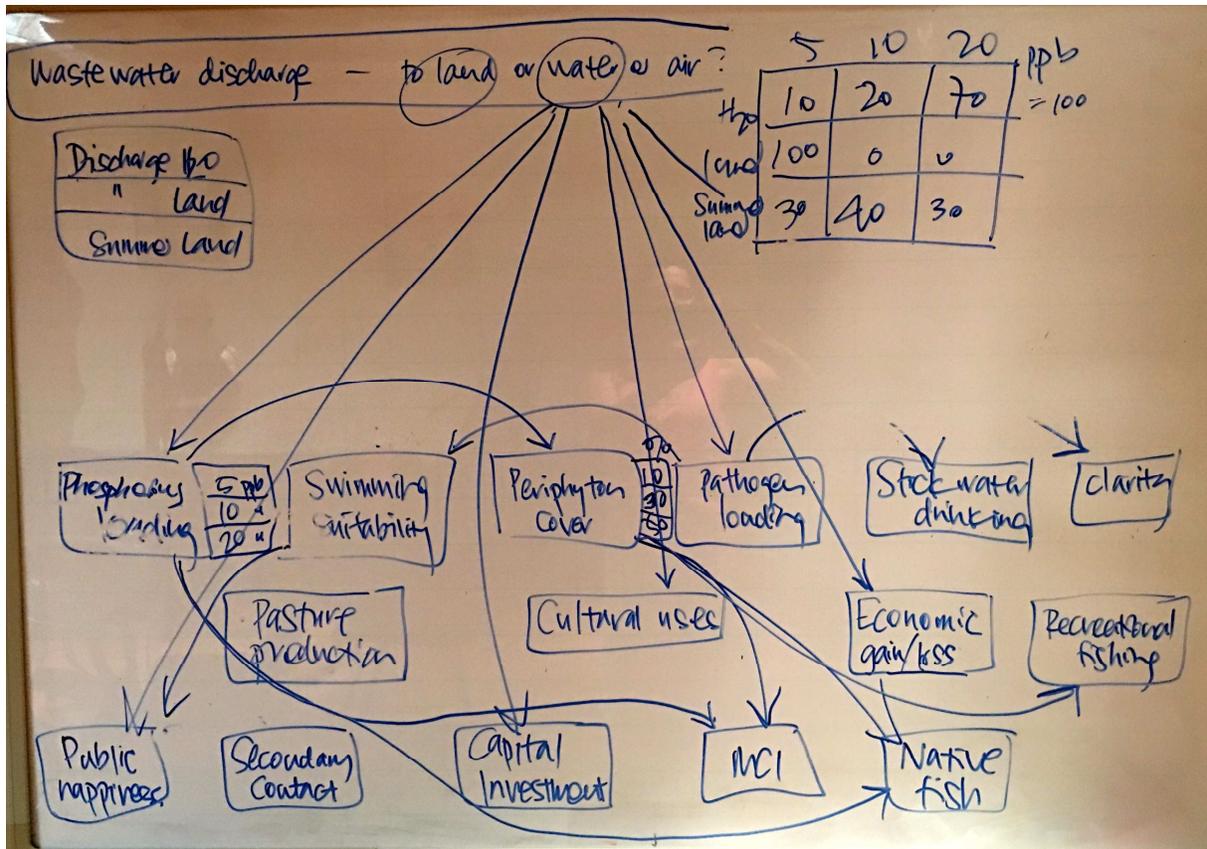
- Build the dam / do not.
- Where?
- How big
- How its operated

Dam	Water skiing	e.Coli
Yes	1x	90
Yes	2x	60
Yes	3x	20
No	1x	10
No	2x	40
No	3x	80

Decisions:

The diagram shows a decision node 'Build or Not' leading to 'Irrigated Area'. 'Build or Not' also influences 'Size' and 'Operating Rules'. 'Size' influences 'Minimum Flow' and 'Flushing Flow'. 'Operating Rules' influences 'Minimum Flow' and 'Flushing Flow'. 'Irrigated Area' leads to 'Aridity', 'Hort', 'Dairy', and 'S+B', which all lead to 'Increased Production'. 'Increased Production' leads to 'Water skiing' and 'e.Coli'. 'e.Coli' leads to 'Swimming'. 'Minimum Flow' and 'Flushing Flow' both lead to 'Periphyton' and 'MCI'.

Richard Storey's Group: Issue: Wastewater Discharge to Land or Water



G General Business

RWC member only meeting
12-13:00 on 4 April was agreed.

Next RWC Workshop

Can't be the marae anymore as Gail Tipa unwell. Likely topics for the agenda are:

- Review of outcomes (high level objectives) against confirmed values
- River management

Action: Kat to advise venue in due course.

ENDS