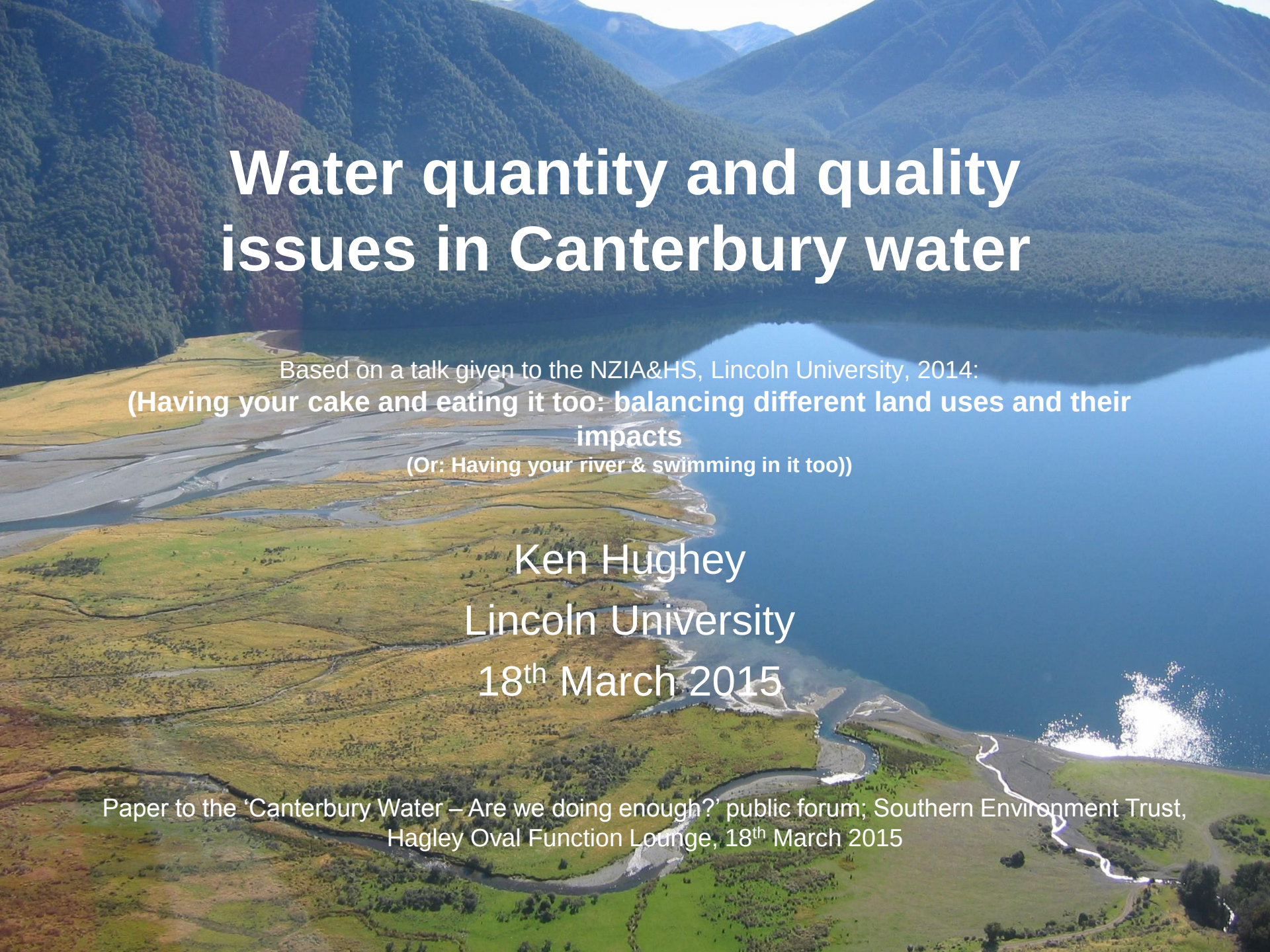


Water quantity and quality issues in Canterbury water

Based on a talk given to the NZIA&HS, Lincoln University, 2014:
(Having your cake and eating it too: balancing different land uses and their impacts
(Or: Having your river & swimming in it too))

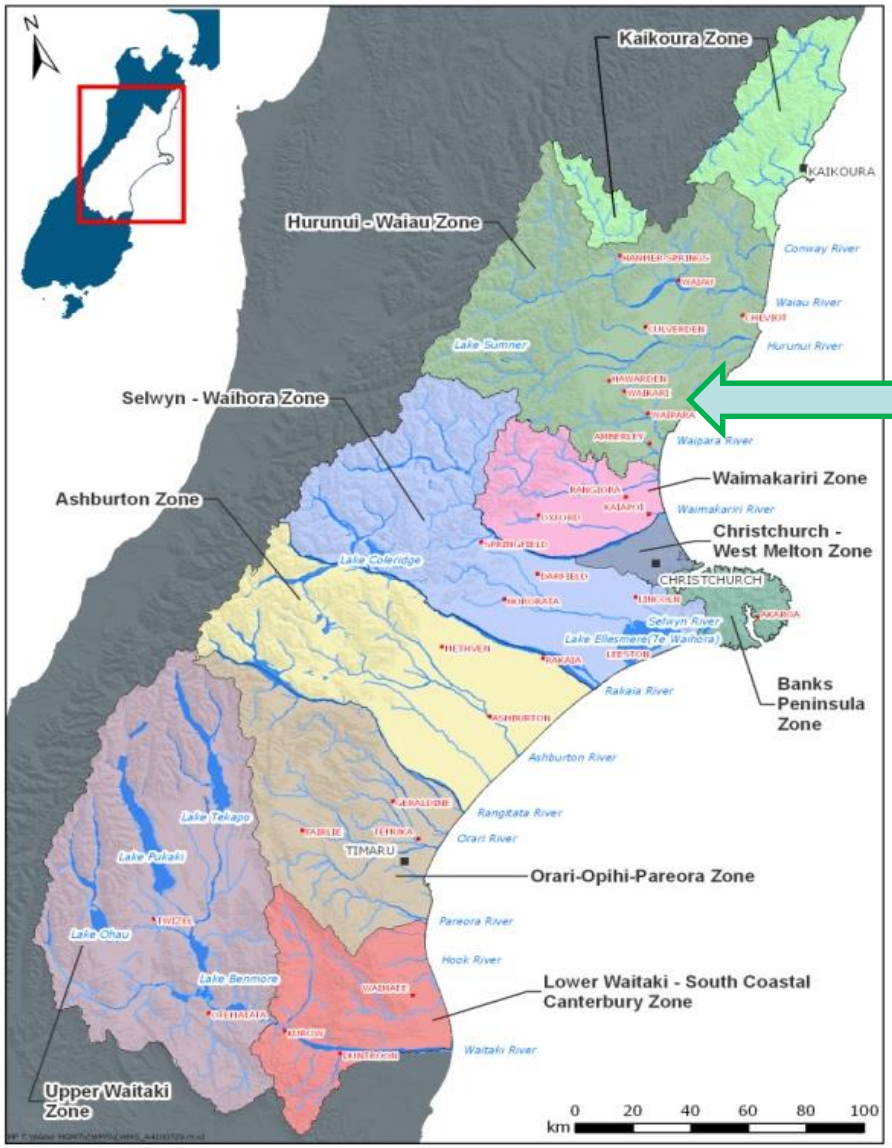
Ken Hughey
Lincoln University
18th March 2015

Paper to the 'Canterbury Water – Are we doing enough?' public forum; Southern Environment Trust, Hagley Oval Function Lounge, 18th March 2015

My outline, I mean recipe for tonight

- Your favourite cake might not be mine – some lessons over time from over 4 years on the Hurunui-Waiau Zone Committee, and many more in water generally
- What the cake looks like at the moment
- Who decides what the balance is and are we all using the same scales and same measures?
- What process is used to decide balance?
- How do we judge achievement? Recipe book and ingredients vs the taste test – the importance of monitoring and reporting
- Where to from here to improve the recipe book

Canterbury's water management zones



Environment Canterbury Regional Council

Canterbury Water Management Zones

The zone that I am a committee member of

Ken's 'roughly informed' assessment of water quantity/quality by zone in Canterbury

	Kaikoura	Hurunui-Waiau	Waimakariri	Christchurch-West Melton	Selwyn-Waihora	Banks Peninsula	Ashburton	Orari-Opihi-Pareora	Upper Waitaki	Lower Waitaki-Sourthern Coastal Canterbury		OVERALL
Rivers - Mt fed	Clarence	Hurunui, Waiau	Waimakariri	NA	Rakaia	NA	Rangitata	NA	Ahuhiri	Waitaki ??		Good
Rivers - Foothills	Lyall Ck	Waipara	Ashley	Heathcote	Selwyn	Little River	Ashburton	Pareora	Forks			Poor
Streams - Lowlands		Jed	Taranaki	Avon	Halswell		NA		Maryburn			Poor
Lakes - Mts	Tennyson	Sumner	NA	NA	Pearson	NA	Heron	NA	Tekapo	NA		Good
Lakes -Lowlands		NA	Pegasus	NA	Ellesmere	Forsyth	NA	Washdyke	NA	Wainono		Very poor
Groundwater						NA						Good
OVERALL	Mixed	Mixed	Poor	Bad	Bad	Poor	Poor	Bad	Good	Poor		Mixed

My idea of a nice cake is often different from yours: experience from the Zone Ctte

- Social Construction Theory: we each have our own views of the world informed by different values, contexts etc, & these views inform our policy ideas
- Views on the perfect (cake) river differs within and between groups of white water kayakers, farmers, etc
- And a grade 2 kayaker (me) has a different view than a grade 5 river kayaker etc, & a farmer cf a fly fisher
- So, what is the bottom or top line (icing on the cake) that we should be aiming for and how should we define it?

Lesson: be clear on what the cake should look and taste like and thus what its key ingredients are

- Rivers not born equal & users have different, sometimes overlapping, needs
- Need to define desired outcomes (what the cake should like & taste like) – for the CWMS this means 1st order priorities - environmental:
- In Hurunui-Waiua we have clearly defined these outcomes - they identify:
  - key values & desired outcomes, e.g., for native birds, swimming & fishing
  - required flows, e.g., depth, width and velocity requirements, typically reported as cumecs (m^3s^{-1}), for each value
  - water quality needs, e.g, levels of N and P and also *E. colli* that do not compromise these values
- We then work via rules (recipes) in our plans, and through working together, to sustain these requirements while trying to meet the other aims of the CWMS – cultural, economic, social

Lesson: a diverse group working together is more likely to get the outcome mix right than a single sector group alone

- Zone Cttes by defined criteria are diverse: community interests including farming and environmental, in partnership with tangata whenua and councils
- ZCs identify the values, discuss their needs and define what is required to protect them so that where they are important the environmental needs are provided for
- Farmers alone could not do this because they do not represent the diverse value set
- Risk: too many cooks can spoil the broth!?

Now that we know what we want the river to look and taste like, how do we mix the land use ingredients to produce the desired outcome?

- The $B question – the easy bit, really, is defining the desired outcome(s), or what we want the cake to look and taste like
- So how do we get the recipe (the N and P ingredients) right so that the desired outcomes are met (and the cake is nice)?
  - We could just throw all the land users into a room and let them sort it out (with some support) – arguably this is what the South Canterbury Coastal farmers have done
  - But, as we have seen with Hurunui Waiau there are some enormous challenges in this space …

Challenge 1 – using your grand parents' recipe as a starting position

- Basically let the highly developed (irrigated land users) retain the right to discharge large amounts of N and P while over time allowing others to intensify slowly as your 'grand parents', through best practice, improve their performance
  - +ves: protects the status quo and existing investment
  - -ves: limits others' chances to develop and seen as inequitable; worse – as the 'grand parents' improve they seek to make their cake even bigger on their existing property thus using up gains made elsewhere
- Hmmm … is this the Hurunui Waiau situation?

Challenge 2 – how to the cake's ingredients equitably, so everyone gets a slice of the cake, and your 'grand parents' don't go bankrupt!

- While it seemed hard for those involved, in South Canterbury Coastal streams, I think it was easy: they still had 'head room' or nutrient space & clean (new, Waitaki River) water they could use to dilute the flavour – we do not have those advantages in Hurunui Waiau
- Hmmm – what can be done?
  - the 'grand parents' have to give up some of their ingredients;
  - dryland farmers have to understand there's a limit to the size of the cake;
  - We all have to understand that we have to farm within limits if want the cake we all agreed we wanted!

So, can we have the perfect cake, with the perfect mix of ingredients, and eat it too: a balanced diet?

- My short answer is – NO!
- My longer answer is – YES:
  - But, no one will be perfectly satisfied: not the river (or its instream inhabitants or users (unless they are totally in the upper catchments)), not the irrigated farmers, not the dryland farmers
  - There will have been a net gain overall to the four well beings: cultural, economic and social (although one, environmental, almost certainly will have lost)
  - But, overall and as a community, we will be in a far better position than we would have been under the much more litigious pre CWMS approach.

My take home message(s) therefore are:

- Cooking a good cake takes practice, commitment and the right ingredients – I'm still learning
- Getting cakes the way 'we' want them takes practice, commitment and the right ingredients in the right mix
- In Canterbury we are really lucky – most of our biggest cakes, relatively speaking, are in great condition: we need to look after these!
- But some cakes will be thrown out along the way, or at best will be of marginal quality – unfortunately that is life – it is simply not possible to have every cake and eat them as well!