

# Living Lake Symposium 6: concluding comments

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## What we have learned today



## What we have learned today

### *Te Kete Ika a Rākaihautu*

#### Governance & history - Liz

- *connecting with a rich history*
- *Weaving as a metaphor*
- *Historical extent of the lake – abundance of resources*
- *Collaboration as a new way of working – co-governance & partnership*
- *Joint lake opening consent*
- *Whakaora te Waihora*
- *Addressing legacy issues*



## What we have learned today

### *Upstream*

#### Central Plains Water and Te Waihora – Fiona

- **Opportunity and risk**
- *“Switching off” groundwater – 75%*
- *Targeted stream augmentation*
- *Integrated perspective*
- **Targeting non-compliance – GMP is not enough!**
- **Outcome focused – good things take time**
- **Importance of improving farmer knowledge**

#### Targeted stream augmentation – Brett

- **The spirit of CWMS – improving environmental outcomes**
- *2 projects*
- **No silver bullet – are we firing blanks?**
- *Future resilience*
- *“Lifting” groundwater*
- **Increasing gw recharge – multiple benefits**

#### Importance of mudfish (Kōwaro) re-establishing - Angus

- **Looking after taonga beyond the lake**
- **A rare “weed”!**
- **Willows – the 2-edged sword**
- **Live fast and die young...**
- *Flow vs predators – delicate balance (habitat criteria)*
- *Waianiwanawa basin – predator free*

## What we have learned today

### On Farm

Cultural Values Landscape Management Area – [Mananui](#)

- **A step change in the protection of Tangata Whenua values**
- *Kemp's purchase & the importance of mahinga kai (200M acres for £2K)*
- *Ngāi Tahu helping our landowners understand*
- *Cultural advisor - a link*
- **Working with Rangatiratanga**

Key messages for lowland stream restoration in Canterbury – [Angus](#)

- **Addressing the cause, not the symptoms**
- **CAREX – “learning by doing”**
- *Why projects fail*
- **Worry about the small streams first (& are they captured by reg's?)**
- **Sediment cover a show stopper**
- *Deal with legacies*
- *Mechanical clearance damages habitat*
- *Shade “sweet spot”*
- **Nutrient management means think catchment-scale**
- *Matching tools to the local situation*

## What we have learned today

### On Farm



Tracking markers of contamination from cow pat runoff - [Meg](#)

- **Science to help target management interventions**
- **Different sources = different risks**
- *Things change inside cow pooh*
- *Transport of FSTs from floods & rainfall*
- *Don't underestimate the crust*
- **Genetic marker persistence < E coli**
- *Unique bacterial signatures in different environments*
- **Sediment traps remove bugs**

Applying the science research on the farm – [Alastair & Arron](#)

- *Action “on the ground”*
- **200 advisors on-farm**
- *Policy/tools/compliance services*
- **Nutrient budgets – impt. of having good data**
- *3 types of budget – predictive vs. scenario testing*
- **Multiple modes of comms**
- *Science informs the debate*
- **The lag effect – many don't respond till after the regulation bites**

## What we have learned today

### In the lake

N & P transformations within Te Waihora and nutrient availability - **Marc**

- **New science challenges established views – transient periods of anoxia**
- *Lake conc's don't reflect input loads*
- **Self-purification processes not enough**
- *Refine the TW dynamic model*
- **Results support proposed interventions**
- *Midges are big!*

Latest lakeshore vegetation survey & an update on willow control - **Jodi**

- **Lakeshore wetland vegetation is improving...but vehicle damage continues!** (*"Really?" says the other Ken – "how can this be the case when we all know how bad the problem is and what the solution is?"*.)
- *Weed threats continue (clearance, pesticides)*
- *Spp. loss through drying of wetland*
- **Areas with willow doubled but inroads in closed canopy areas**

## What we have learned today

### In the lake

Macrophyte re-establishment - **Tim**

- **How hard is it to tip backwards? (ask Mary?)**
- *Once a major part of lake ecology*
- **Action research**
- *Results disappointing thus far*
- **Impact of swan grazing**

Fisheries management – Kōhanga area – **Shannan**

- **The Horomako Kōhanga - it works!**
- *High spp diversity*
- *Common bully is a big bully (biomassively speaking)*
- *Tuna catch reflects fisheries management regime*
- **Optimising opening times for recruitment**
- **Openings for outwards migration don't need to be long**

Australasian Bittern (Matuku) research update – **Donna**

- **A crisis unfolds...and God save the Grebe**
- *Genuine native*
- *Critically threatened – habitat loss, predation*
- *Impressive call!*
- **Impt. of wetland networks (Barry's dilemma...)**
- *Spot the Bittern!*



## What we have learned today

### Out there

#### Next generation solutions - **Robyn**

- *Providing choices that capture value*
- **Social licence to farm**
- **Beyond business as usual**
- **Learning from farmers**
- *Transformational change*
- *Is there an avalanche on the way?*



#### Land use suitability – **Scott**

- *A new way of thinking about land use choices*
- *Managing within limits is imperative*
- **Environment vs economy?**
- *Importance of scale & feedback*
- **Productive potential/relative contribution/pressure**

#### Reducing nitrogen losses from farms - **David**

- *Transforming our farming systems*
- *Reducing N losses from farms*
- **Calculating benefits – exploiting headroom vs environmental gain?**
- *Impt. of soil C*
- *Understanding processes at the micro scale*
- *Manipulating crop type and C impacts on N loss*

## What we have learned today

### Out there

#### Tensions between the lake and catchment land use – **Murray**

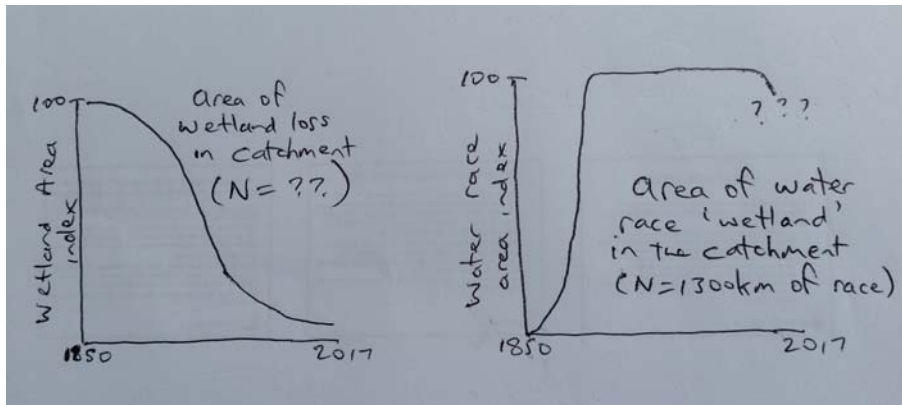
- *Be patient – change takes time*
- *“Govt needs to put their money where their mouth was” (M Washington pers comm)*

#### Report on state of the flows - **Tim**

- *Abstraction is important - climate is crucial!*

## What do we need to know?

- *Shutting down water races and habitat loss: what's the impact & how do we compensate? (180 ha to be replaced = 9 bitterns)*



## What do we need to know?

- *How important are midges to lake ecology and what drives their production?*
- *Grebe vs fish? Does it have to be that way?*
- *Why is it so hard to get simple "fix-its"? (vehicles & lake shore vegetation)?*
- *How could we supercharge bittern conservation?*
- *What is the most critical driver of change and how long would it take to manifest?*
- *What part of the picture are we missing?*
  - *The stuff we don't hear about (on-farm mitigations, large-scale riparian initiatives, compliance monitoring – it's not joined up!!!)*
  - *The stuff that's not measured (recreational use, non-commercial fish species, other interventions...)*