

Realising the vision -  
mountains to the sea

*Ki uta ki tai* – concluding remarks

Te Waihora/Lake Ellesmere  
Living Lake Symposium 2015

Ken Taylor and Ken Hughey  
19<sup>th</sup> November 2015

| Topic area              | Data available for quantitative assessment | Influence of lake level management 2013-2015  |
|-------------------------|--|---|
| Land use and land cover | No   | Stock can access the lake bed when lake levels are extremely low. Flooding from extreme weather events has a major impact on farming operations around the lake margins   |
| Water                   | Yes  | Unlikely to have had a major impact on water quality, apart from substantial increases in salinity and reductions in nutrient concentrations in 2013 when the lake remained open for long periods. Changes in salinity influence ecosystem dynamics               |
| Vegetation              | No   | Long summer openings (2013) impact negatively on plant communities through salt stress and desiccation. Drying out of wetland plant communities increases the risk of invasion by dryland exotic plants   |
| Wildlife                | No   | Low summer lake levels are likely to be detrimental to migratory waders but may benefit other species<br>Rapid drops in lake level in the spring reduces nesting success for Australasian crested grebe.  |
| Fish                    | Some                                       | Autumn openings (at any level) now provided for in the Water Conservation Order allow mature eels access to the sea for spawning. Spring openings enable fish recruitment. However, a low summer lake level could have a negative effect through reduced habitat. |
| Economy                 | No   | Impacts on the economy of lake level management are expressed through its consequences for the commercial fisheries and recreation on and around the lake. The effects of flooding on lake edge farm land can be considerable (see footnote)                      |
| Recreation              | No   | Spring openings in the last two years may have benefited the whitebait fishery. Prolonged low summer lake levels have resulted in complaints from boaters. It is likely that low levels also reduce the quality of the experience for rail trail cyclists         |
| Cultural health         | Some                                       | Satisfaction of whanau with lake level management is a cultural health indicator. An opening regime that benefits fish values generally and fish recruitment specifically, is particularly valued   |

## So what this means....

The lake level regime over the last two years has been:

- Good for native fisheries
- So-so for others
- Not so good for science
- Detrimental for others eg., some birds (grebes), some plants, and recreational boating

# Governance & management

- The distinction is a fuzzy one!
- Better collaboration
- You don't need to be a formal partner

# Land

- S-W is a rapidly changing catchment
- Better info but time lags
- FEPs are an amazing vehicle for change e.g., Silverstream

# Water quality

- TLI – is it the best measure of coastal lagoon quality?
- Recreational wq – influence of small sub-catchments
- WQI – no indication of improvement yet
- Macro-invertebrates – cause for optimism?

# Harts Creek – a lesson in the way we use indicators

- Composite measures need careful interpretation
  - They are very useful but...
  - What information do they capture?
  - Too much or too little?
- Benefits of riparian management are multi-dimensional

# Fish

- Length of opening huge influence on recruitment
- Importance of water velocity
- Inanga spawning - the role of models (& their validation) in regulation

# Vegetation

- The threat from weeds
- Off-road vehicles
- Importance of cycles of wet and dry
- Long openings impact badly on lake margin vegetation – salinity and desiccation
- Containment of weeds is a key strategy

# Wildlife

- Variations in annual total numbers of birds
  - Arctic migratory waders in decline?
- Innovative approaches to bird conservation
- Importance of predator control (spotted skink)

# Economy

- One of the “best” (& fastest growing) economies in NZ
- What does economic growth mean for lake values?
- Water-sensitive urban design – point source management
- CPW role in improving environmental outcomes

# Recreation

- Stop off-road vehicles
- Canada goose hunting conflicts with bird watching
- Ongoing paucity of data

# Cultural health

*“The change in overall score reflects the many initiatives that are underway in the catchment and...confirms that while outcomes may not have been achieved, there are processes in place that could realise this objective”*

# Final thoughts

- Collaboration is everywhere
- Innovation
- Consistency in reporting
- We need to encourage debate