Te Waihora lake level management

Te Waihora Living Lake Symposium 2015

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Presentation Outline

1. Quick history
2. How the lake is opened
3. The rules and how decisions are made
4. 1 January 2013 to 30 June 2015 – what happened?
Brief history of level management

• Before human intervention - lake would have naturally opened by overtopping beach-crest (approx 4m)
• Tangata whenua opened the lake for fish migration and flood control
• Use of horse drawn scoops from 1868 to 1904, 1925-1931
• 1904 Dobson’s culvert
• 1908 Pannet’s culvert, destroyed 1925
• 1931 Ellesmere Drainage Board purchased power scoops
• 1947 North Canterbury Catchment Board took responsibility (current levels formalised)
• Currently managed by Environment Canterbury and Te Rūnanga o Ngāi Tahu → now managed for broader range of values
Figure 1.2 Historic opening 1886

(A.W. Hands, collection, Canterbury Museum)
Features of the site & how opened

- Whakamatakuru/Fishermans Point
- Deeper flow channels (location approximate)
- Deep water (protected by sea wall)
- Machinery park protected by gravel bund
- Sea wall
Mechanical Openings

Achieved by making a temporary cut through the beach

- 1.5 - 2.0m deep channel
- 10 - 15m wide channel – ~75m wide at beach crest
- up to 300m long
- ~ 30,000m$^3$ material moved
- ~ 3 - 5 days to create channel

Factors affecting openings

- Swells and wave action
- Tides and hydraulic gradients
- Wind

Between ~$20,000 to $120,000 per opening

Between 2 to 6 openings per year
Decision for opening

- Water Conservation Order (WCO) sets minimum levels and ‘any level’ opening times
  - 1.05m masl  1 August – 31 March
  - 1.13m masl  1 April – 31 July
  - Any level  1 April – 15 June & 15 Sept – 15 Oct

- Resource consent (mirrors WCO minimum levels)

- Opening decision process – Protocol Group
  - Protocol members: Lake Settlers, Taumutu Rūnanga, CCC, SDC, CRC, Ngāi Tahu, WET, DOC, F&G, Commercial Fishers
  - Aim is for group to reach consensus on decisions. Where consensus is not reached the final decision is made jointly by CRC and Ngāi Tahu (as joint consent holders)
Water levels: 1 Jan 2013 to 30 June 2015

2013
- 3 long openings
- earthworks for eel/tuna
- flood event

2014
- 7 shorter openings
Assisting eel/tuna migration

April 2013
QUESTIONS?