

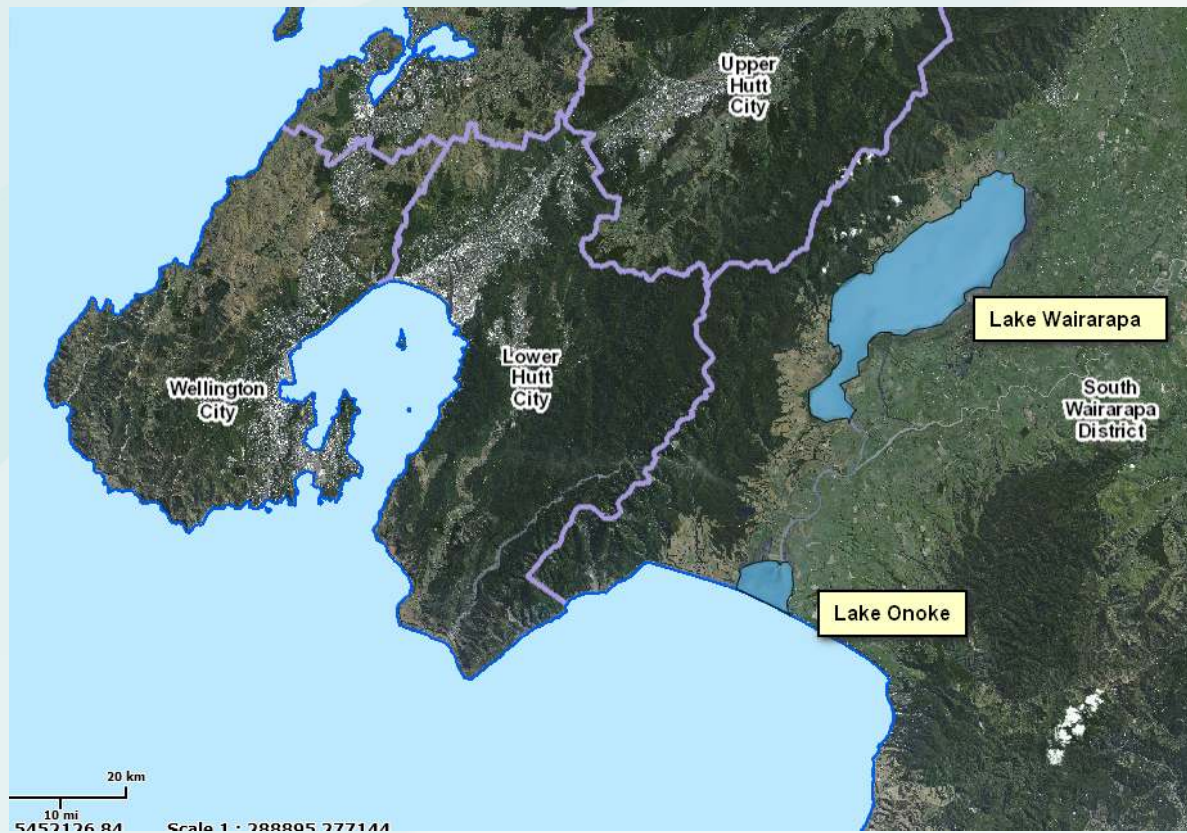
Wading with a purpose: Monitoring kākahi in Lake Wairarapa

Toni de Lautour, GWRC

Introduction

- Wairarapa Moana Wetlands Project
- Kākahi/freshwater mussels
- Lake Wairarapa kākahi population
- Kākahi monitoring citizen science- based programme

Wairarapa Moana Wetlands



Wairarapa Moana Wetlands

- Wetlands of international significance
- Public access
- Highly modified environment
- High sediment and nutrient levels



Wairarapa Moana Wetlands Project

About restoring and protecting:

- Ecological/ wetland health
- Cultural values
- Recreational opportunities



Wairarapa Moana Wetlands Project

Advocacy and community engagement programme



Kākahi

- Freshwater mussels clean water by filtering fine organic particles and sediment
- Rely on freshwater fish species to complete their life cycle
- Three species endemic to New Zealand - *Echyridella* species
- In decline in NZ and worldwide



Lake Wairarapa kākahi

- 2012 survey of eight sites - absence of juveniles
- Population appears to be mostly mature adults
- Two *Echyridella* species present 'common' species and 'Auckland' species
- Indicator of wetland health



Lake Wairarapa kākahi

- Insufficient information regarding health status of the kākahi population
- Years of data needed to determine the health of the population



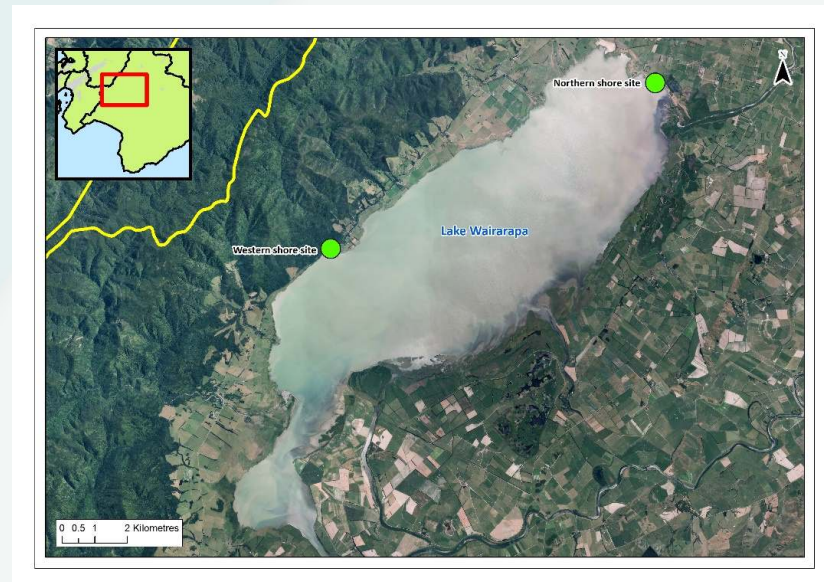
Kāhahi monitoring and citizen science

- Survey method not too technical
- Willing volunteer base
- Freshwater ecologist
- Accessible and safe sites



Kākahī monitoring – how we do it

- Recruit volunteers
- Run annual survey day between two sites
- Analyse data
- Publish results



Volunteer recruitment

- Email
- Social media
- Provide instructions (map, what to expect, gear)



Survey day

- Recce of survey area
- Set up meeting area
- Set up the survey zones (50m)



Survey day

- Set up the survey zones (50m)



Survey day

- Introduction and briefing
- Training and practise run



Survey method

- Land-based recorder/spotter/timer
- Count kākahi collected
- Measure individuals
- Assess level of shell erosion



Survey method

Teams of three – two wading and one on land



Survey day

Collect kākahi for 30 minutes or until 50 collected (time)

- recording the rate of collection



Survey method

Count the
number of
kākahi collected



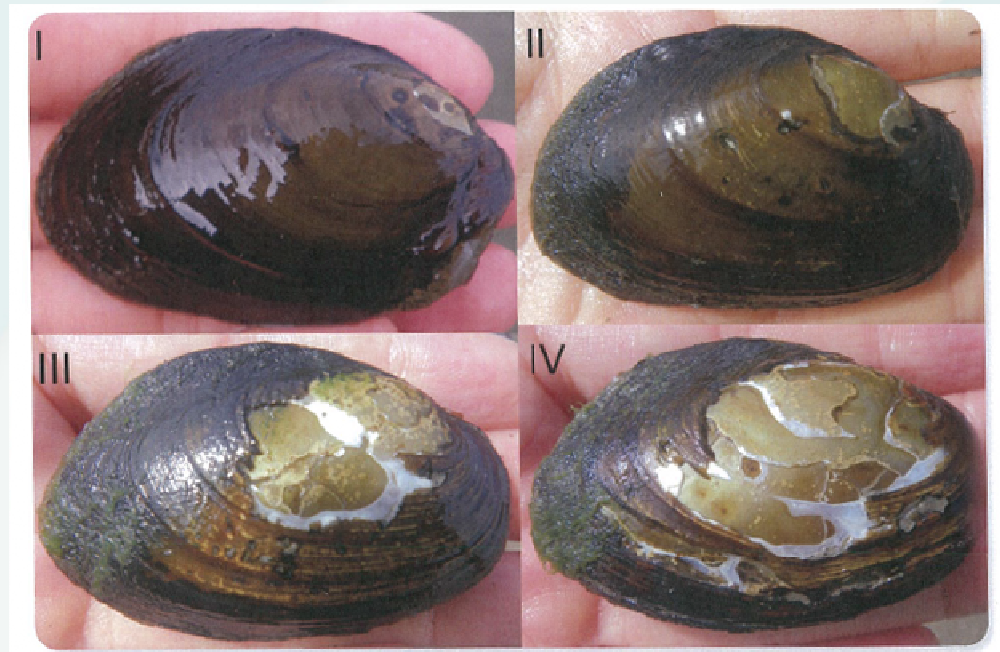
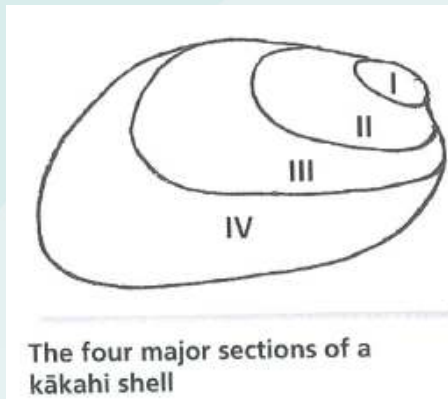
Survey method

Measure the shell length of each kākahi using Vernier callipers



Survey method

Assess the level of
shell erosion



Survey method

Monitoring data sheet – record:

- searcher and location information
- data

APPENDIX 2. Kāhaki Monitoring Sheet

DETAILS

SEARCHERS: Julia Perrie Karyn Burgess

CONTACT PERSON: Karyn

Address: 95 Oxford St

Phone no: 021 133 2569

E-mail: karyn.burgess@gn.aptnz

DATE: 21 March 2014

START TIME: 10:09 AM

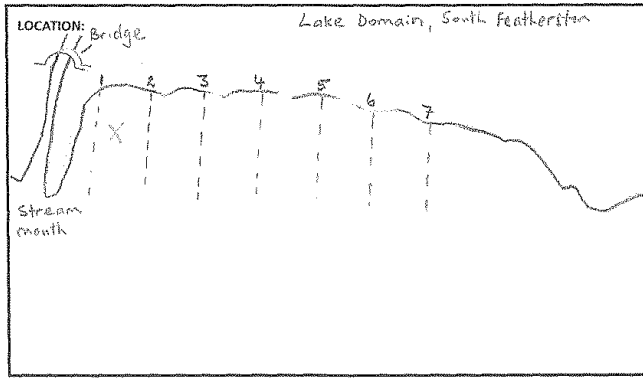
DURATION: 10:39

NUMBER OF KĀKAHI FOUND: 36

NAME OF WATER BODY: Lake Wairarapa

LOCATION: Bridge Lake Domain, South Featherston

Stream mouth



Survey method

Monitoring data sheet – record:

- species type
- Length
- Erosion class

No.	Species (common, Auckland or unknown)	Length (in millimetres)	Erosion class (I, II, III, IV, or None)
1	ALGKIPAD	80	1
2	C	59	3
3	C	57	3
4	C	62	1
5	C	52	1
6	C	58	2
7	C	60	3
8	C	57	3
9	C	58	2
10	C	63	2
11	C	58	2
12	C	60	2
13	C	64	2
14	C	63	1
15	C	65	1
16	C	58	2
17	C	63	3
18	C	61	2
19	C	57	1
20	C	61	3
21	C	57	1
22	ALGKIPAD	49	2
23	C	60	2
24	C	70	2
25	C	63	2
26	C	54	1
27	C	60	3
28	C	63	3
29	C	60	2
30	C	54	2
31	C	57	1
32	C	58	2
33	C	64	2
34	C	61	2
35	ALGKIPAD	57	1
36	C	37	1
37			
38			
39			
40			
41			
42			
43			
44			
45			
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48			
49			
50			

Survey method

Looking after the kākahi

- Keep kākahi cool, under water
- Return kākahi to the survey zone



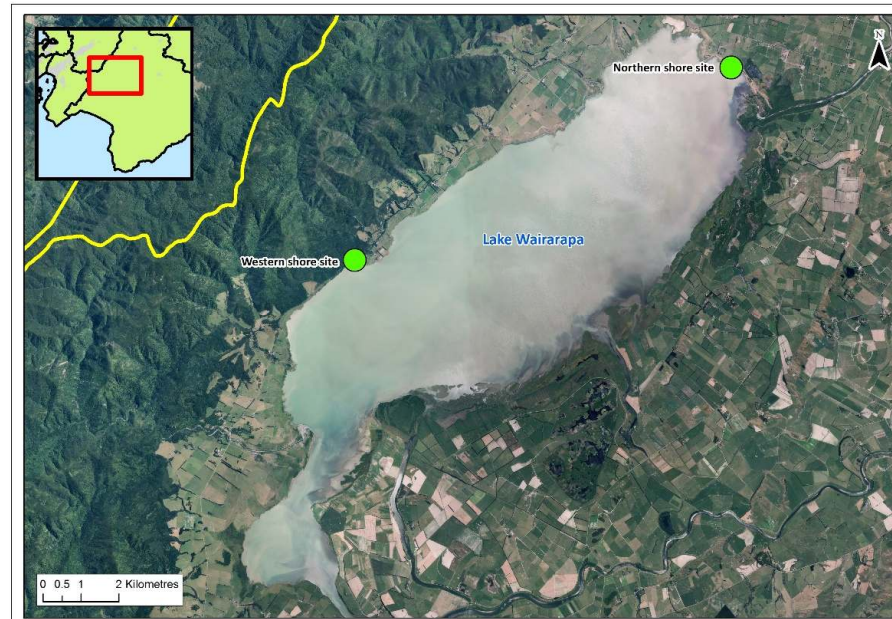
Kākahī monitoring – what we've found

- Participants are really engaged and enjoy doing the survey!
- We've only found one juvenile in the four surveys



Kākahī monitoring – what we've found

- Four years of data from 2014 – 2018
- Two years at each site



Kākahi monitoring – what we've found

- Northern shore site has two species of kākahi
- Western shore site has only one species

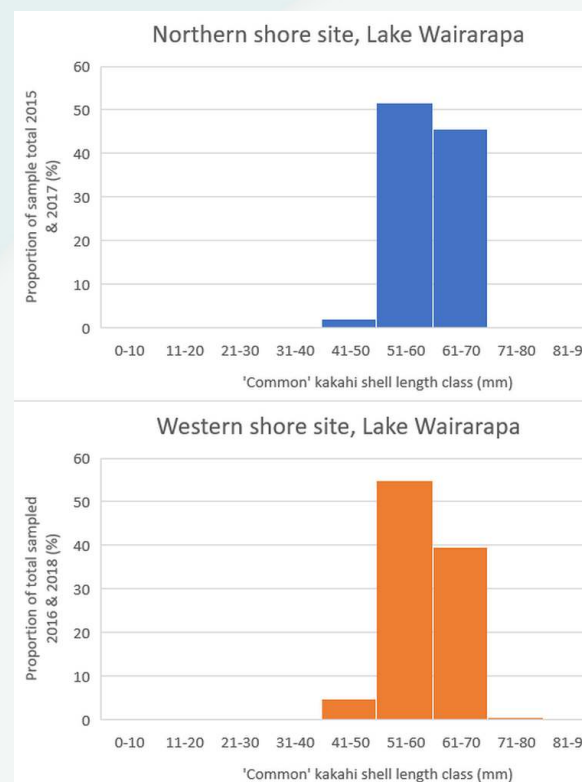


Kākahi monitoring – what we've found

Both sites:

A small range of length in the longer category of shell length

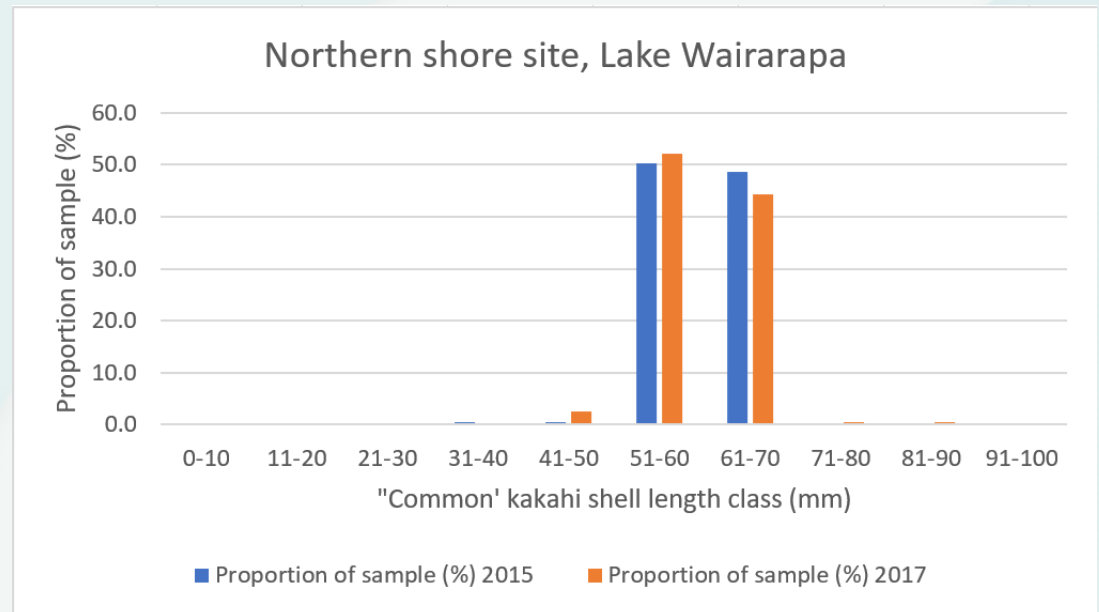
- This represents predominantly older adults at both sites



Kākahi monitoring – what we've found

Northern shore site

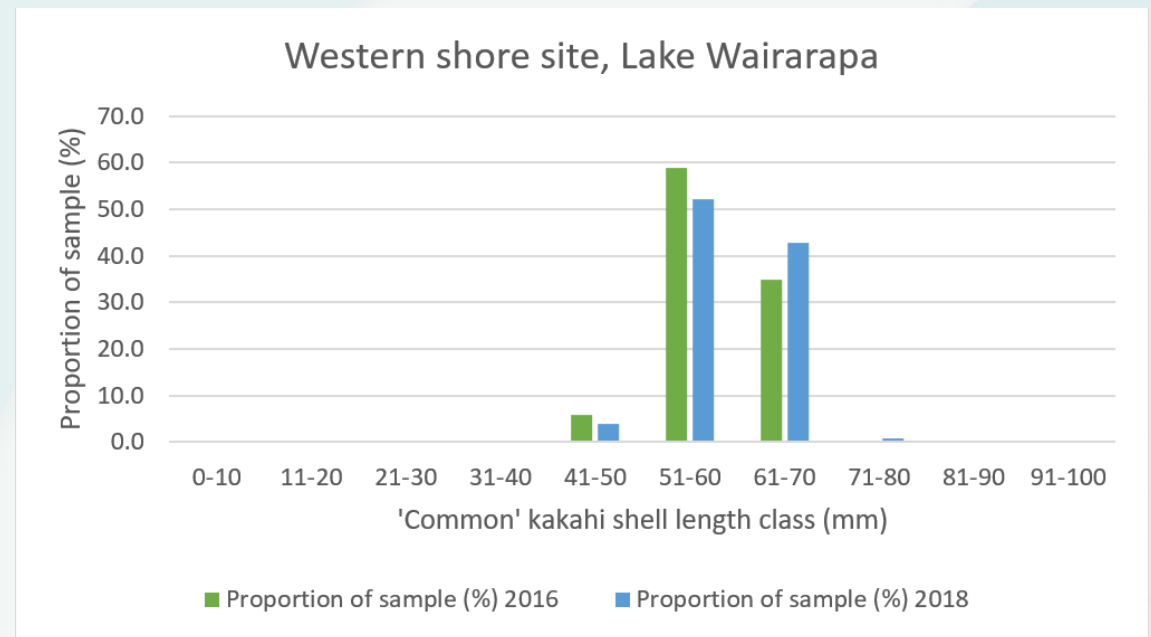
No difference in mean shell length 2014 and 2016



Kākahi monitoring – what we've found

Western shore site

Mean shell length of 2018 sample is 1mm greater than 2016



Kākahi monitoring – what next?

- Continue the monitoring as many more years of data are needed to determine trends in the population
- Share the data when a national freshwater database is available
- Hold a special hunt for juvenile kākahi (resource dependent)

Kākahi monitoring publications

- Published reports for each survey
- Kākahi monitoring guide
- Wairarapa Moana Wetlands website

www.waiwetlands.org.nz

Kākahī monitoring-acknowledgements

- Amber McEwan, Riverscapes Freshwater Ecology Ltd
- Community volunteers
- Wairarapa Moana Wetlands Project partner organisations
(Dept of Conservation, GWRC, Kahungunu ki Wairarapa,
Rangitāne o Wairarapa, South Wairarapa District Council)