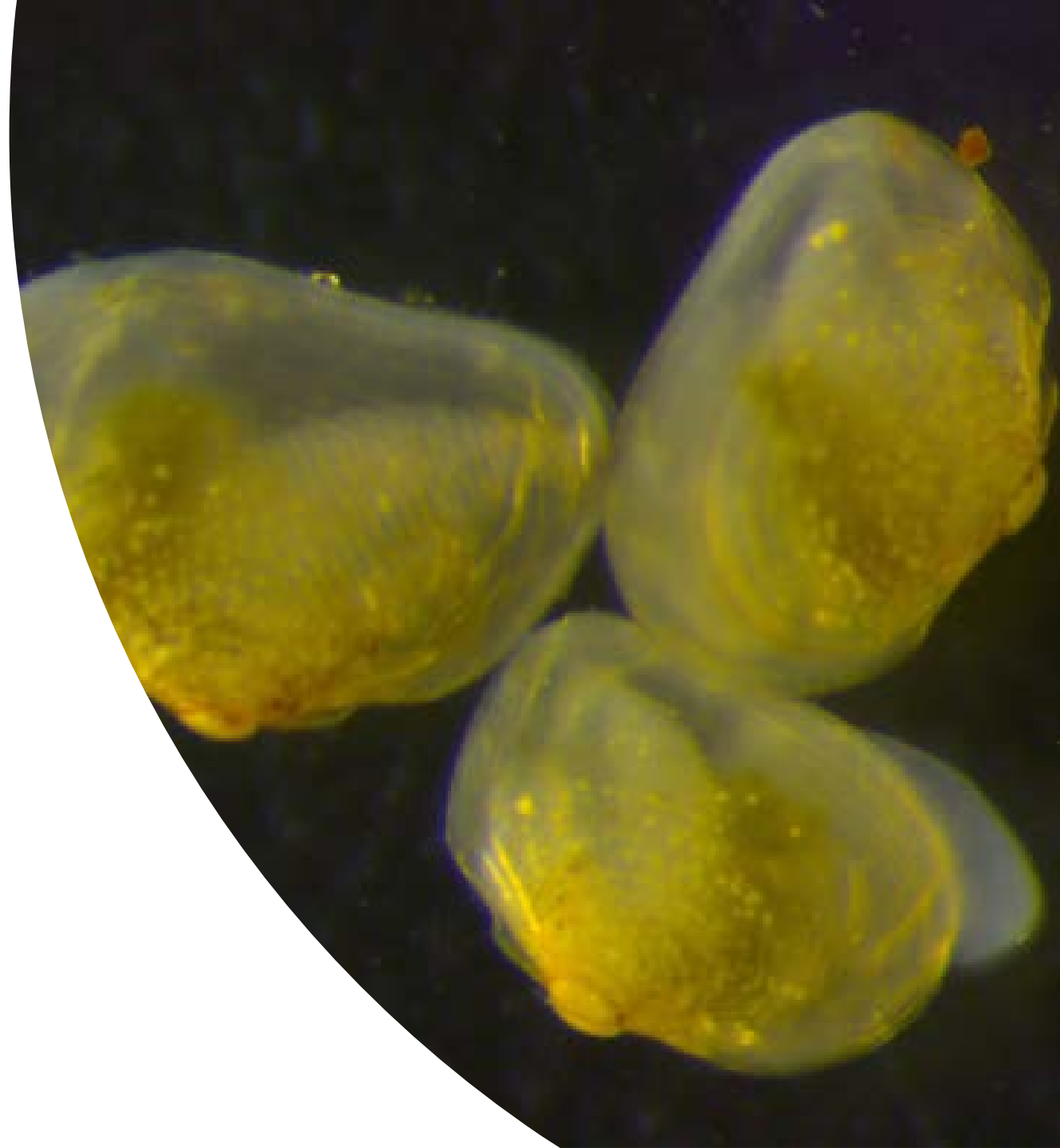
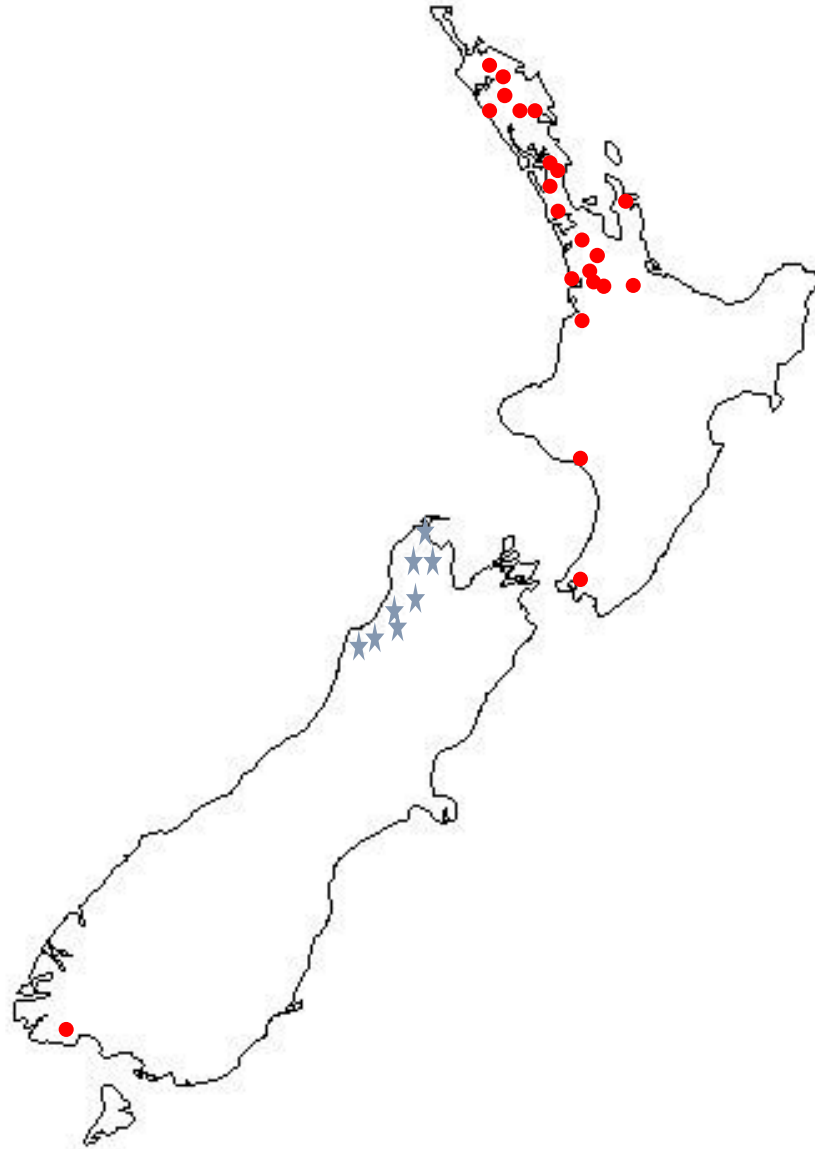


S.J. Clearwater, K.J. Collier, R.L. Brown,
M. Hamer, C. Thoms.

Freshwater Mussel Research and Conservation Aotearoa.



<http://collections.tepapa.govt.nz>



Echyridella menziesii

• *Echyridella aucklandica*

★ *Echyridella onekaka*

¹Fenwick & Marshall (2006). Molluscan Research 26.

²Marshall & Fenwick (2014). Molluscan Research *avail. online*

Official conservation status in New Zealand

(Grainger et al. 2013)

Echyridella menziesii

Declining

Large area of occupancy (>100 km²)

Low to high predicted decline (10-70%)

Echyridella aucklandica Nationally vulnerable

Recruitment failure

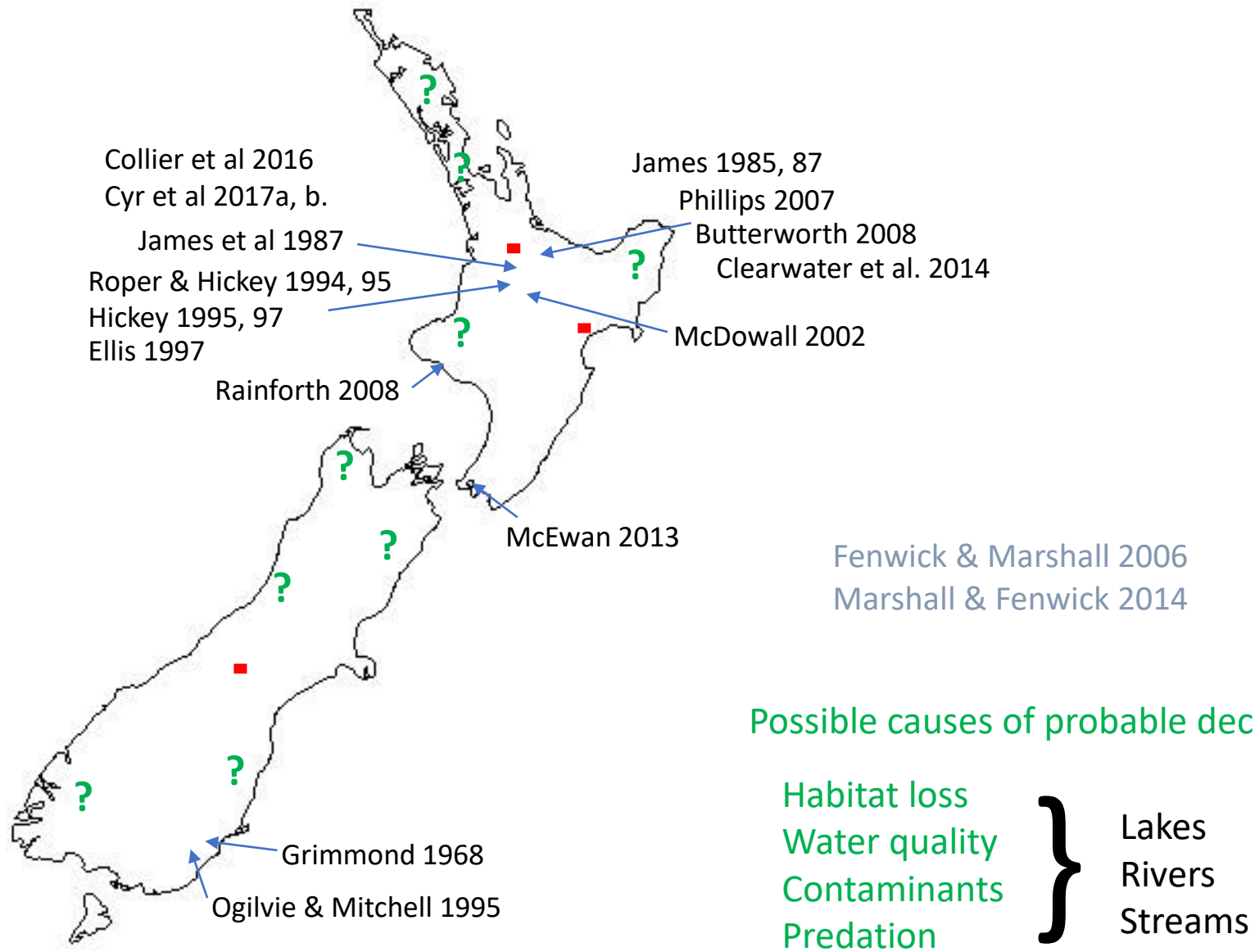
Sparse

Echyridella onekaka

Naturally uncommon

Range restricted

Data poor



Mussel Conservation Strategy 2015

1. Work together – increase cooperation & communication amongst entities that study, manage, conserve, or restore freshwater mussels*.
2. Increase knowledge of mussel population status & trends:
 - a) Develop basic monitoring protocols (e.g., community groups)*;
 - b) Develop detailed monitoring protocols for use nationally*;
 - c) Include traditional and local knowledge;
 - d) Provide website for both presence/absence records, and data collection tailored to national protocols*;
 - e) Provide website on mussel information, updates (e.g., quarterly?) on this process and contacts*.

*new Freshwater mussel website

Conservation Strategy (cont.)

3. Grow knowledge of their biology (especially reproduction & host requirements) & habitat requirements (especially for juveniles).
4. Protect & reverse the decline of quality mussel habitat.
5. Determine what are the key mechanisms of mussel decline in shallow lakes: what are the mechanisms of their probable decline in streams? Develop restoration guidance from the findings of this research.
6. Enhance public and government understanding and support for freshwater mussel conservation and habitat protection [e.g., flagship species for water conservation?].

Conservation Strategy (cont.)

7. Develop & trial techniques for holding and translocating large numbers of adult mussels.
8. Develop & trial techniques for reseeding juveniles on a large scale.
9. Increase available funding levels and develop other means to increase mussel conservation efforts.

Today's focus – Protocol Development

2. Increase knowledge of mussel population status & trends:
 - a) Develop basic monitoring protocols (e.g., community groups)*;
 - b) Develop detailed monitoring protocols for use nationally*;
 - c) Include traditional and local knowledge;
 - d) Provide website for both presence/absence records, and data collection tailored to national protocols*;
 - e) Provide website on mussel information, updates (e.g., quarterly?) on this process and contacts*.

*new Freshwater mussel website

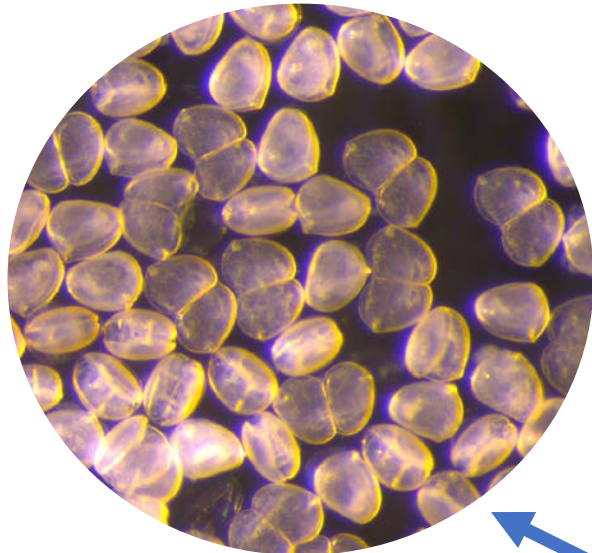
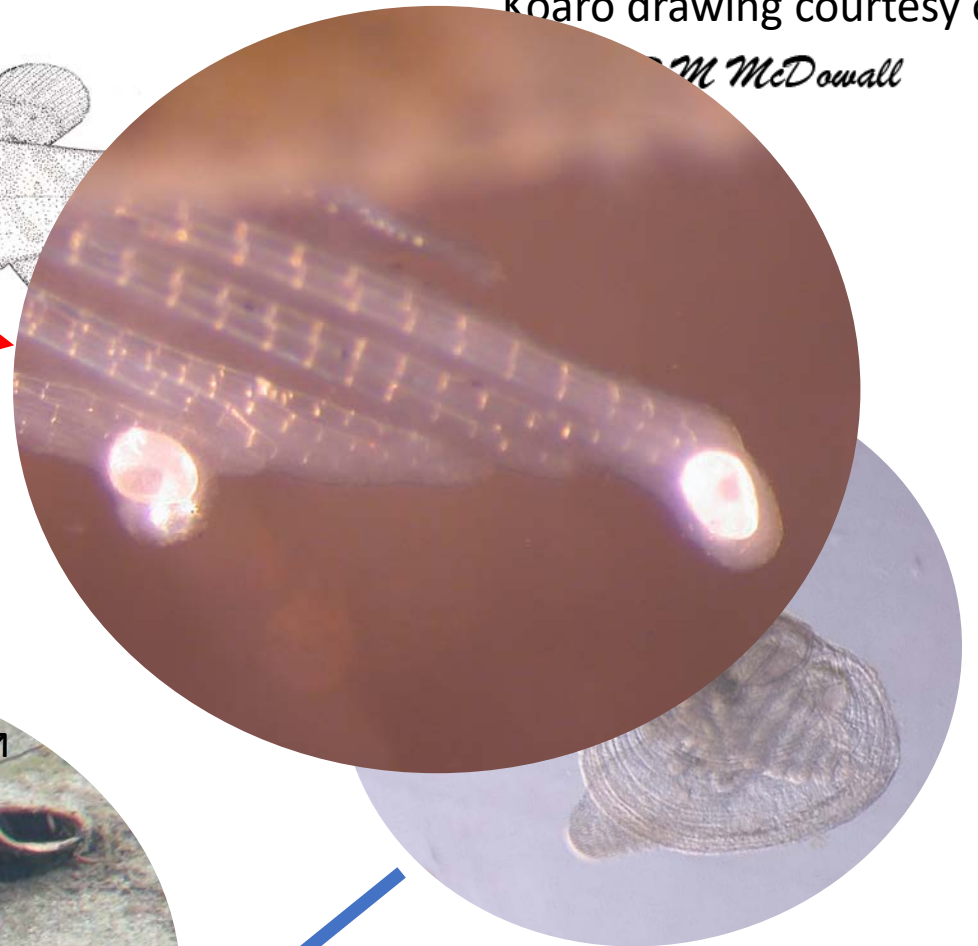
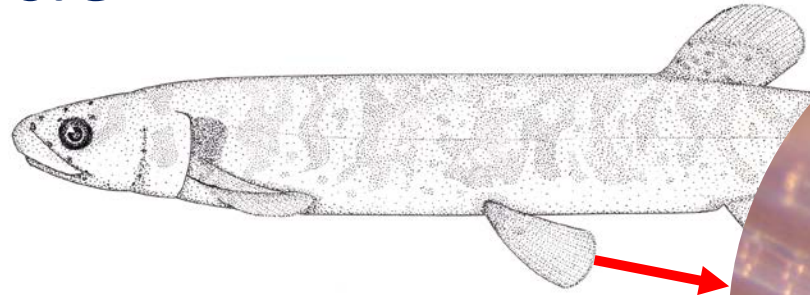
IDEAS

- Establish a working group to get funding for protocols/website
- Volunteers for protocols

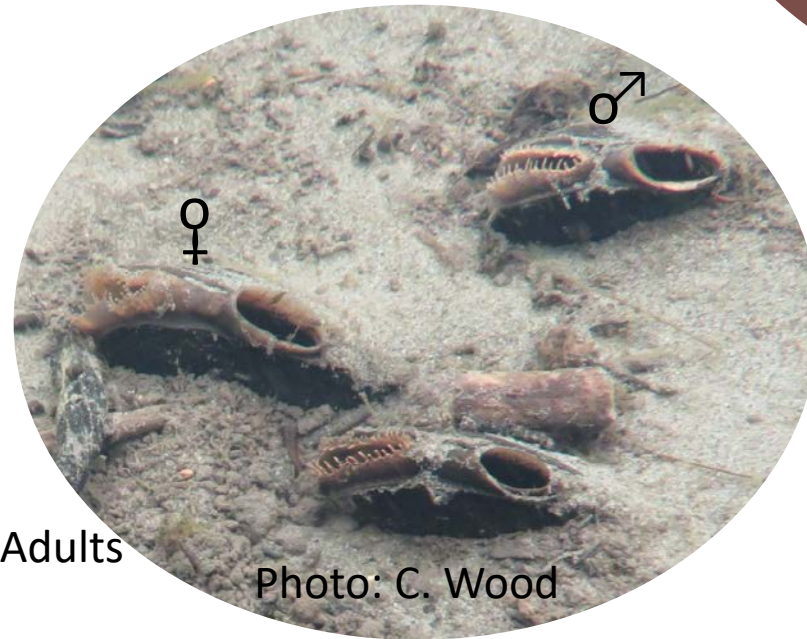
Location	Resources	Common Objectives		
		Presence/Absence	Population density & size	Population structure? i.e. Recruitment
Wadeable Stream	Basic			
	Comprehensive	Y?	Y	Y
Non-wadeable Stream	Basic			
	Comprehensive			
River	Basic			
	Comprehensive			
Shallow Lake-wadeable	Basic	Y	Y	
	Comprehensive			
Shallow Lake >1.5 m	Basic			
	Comprehensive	Y	?	Y
Lake	Basic			
	Comprehensive			

Kākahī/Kāeo Life Cycle

Koaro drawing courtesy of
M McDowall



Larvae (Glochidia)



Adults

Photo: C. Wood

Juvenile mussel

