

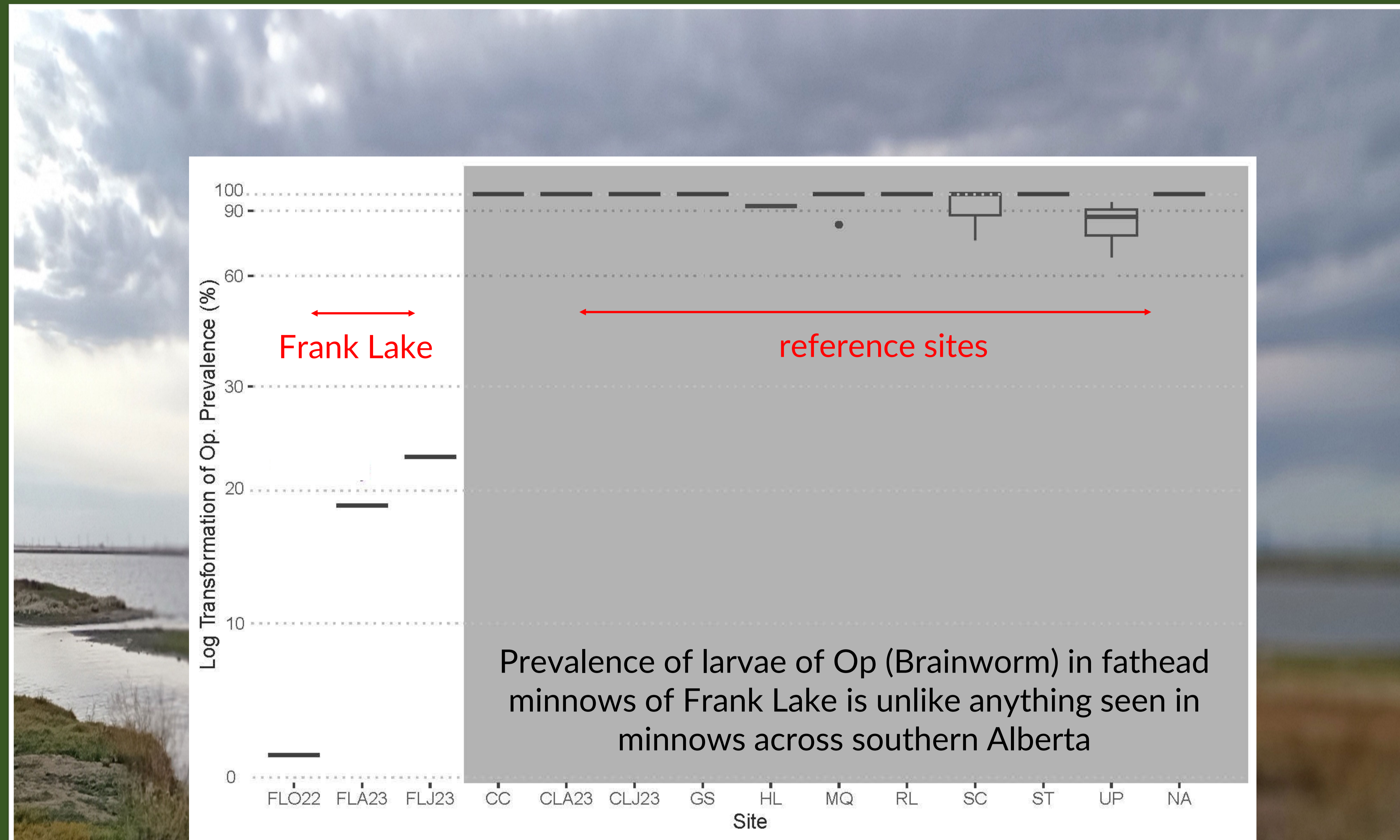
Where did the trematodes go? Multiple stressors upend host-parasite dynamics in a eutrophic wetland facing carp invasion

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BACKGROUND:

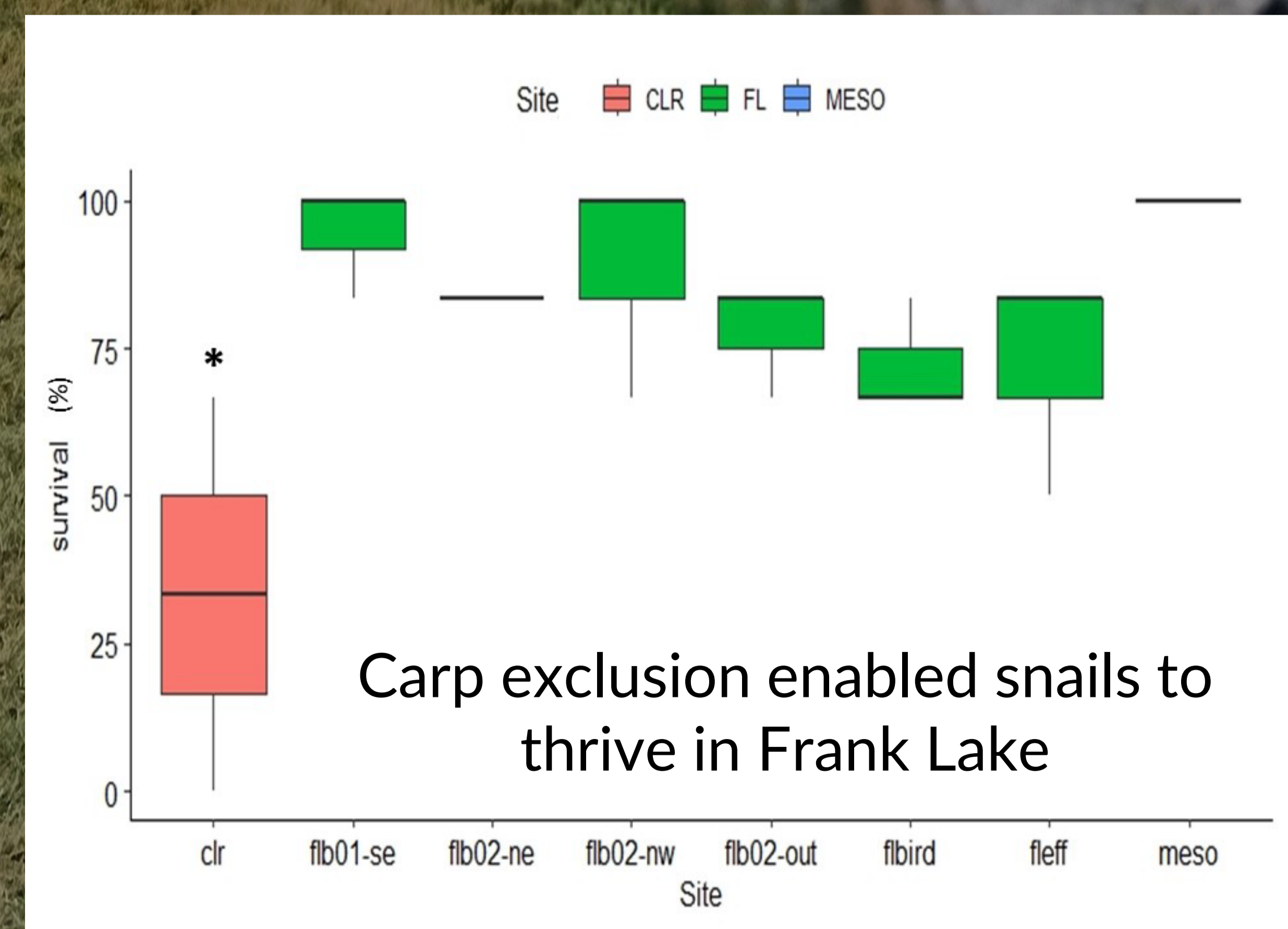
- Larvae of the brain-encysting trematode *Ornithodiplostomum ptychocheilus* (Op) is ubiquitous throughout Albertan aquatic ecosystems.
- Surveying parasite populations aids assessments of ecosystem health.
- Invasive species are a driver for parasite biodiversity loss.
- The extent of ecological damage to Frank Lake after carp invasion is unknown.



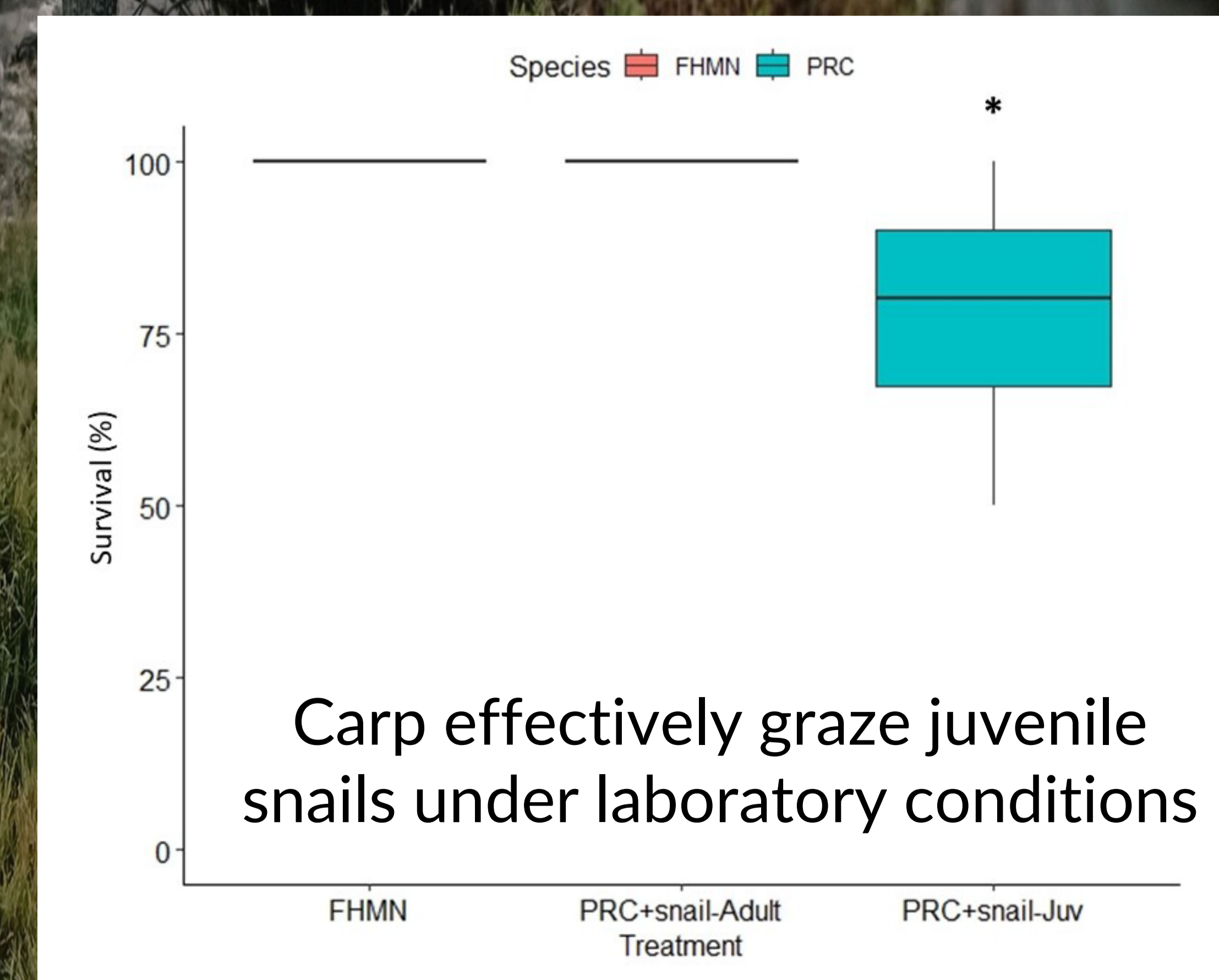
METHODS:

- Enumerated parasites from Frank Lake (FL) and Clear Lake (CL) fathead minnows.
- Compared occurrence of Op in Frank Lake to multi-site data set from southern AB lakes/ponds.
- Conducted an exclusion experiment with caged physid snails in Frank Lake to confirm whether snails can thrive in the absence of carp.
- 48-hour incubations of carp and snails to confirm carp can graze snails.

Frank Lake snail caging

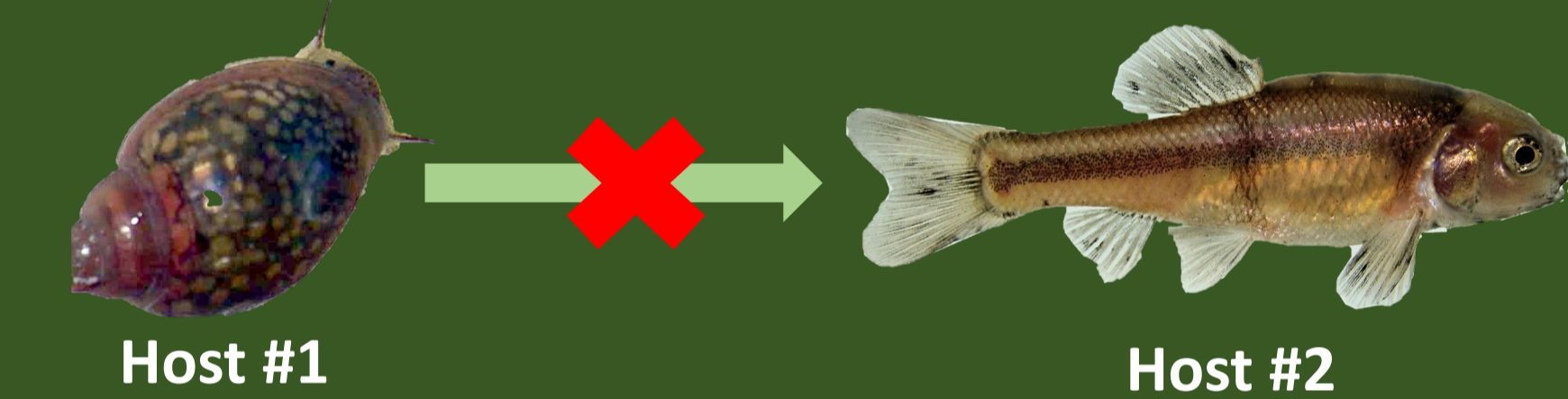


Carp/Snail incubations



RESULTS:

- Transmission of Op to fathead minnows from snails is disrupted in Frank Lake.
- Snail survival is high in nutrient rich water in Frank Lake.
- Juvenile carp graze on juvenile snails (up to 25% of juvenile snails consumed).



CONCLUSIONS:

- Invasive carp in Frank Lake are likely consuming physid snails, impacting the life-cycle of Op and limiting transmission to fathead minnows.
- The results of the Carp/Snail incubation is likely conservative as our assay used juvenile carp that are gape limited predators.

Funding:

