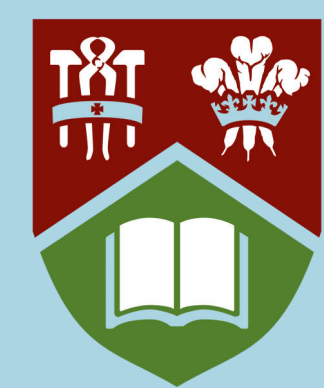


The fascinating tale of *Echinococcus multilocularis* on Prince Edward Island

Brady Sweeney¹, Laura Leaman¹, Kylee Graham^{1,2}, Megan Jones^{1,2}, Spencer Greenwood³, Nina Germitsch¹

1. Dept. of Pathology and Microbiology, AVC, UPEI, Charlottetown, Canada
2. Canadian Wildlife Health Cooperative, Atlantic Region, UPEI, Charlottetown, Canada
3. Dept. of Biomedical Science, AVC, UPEI, Charlottetown, Canada



UNIVERSITY
of Prince Edward
ISLAND



Boehringer
Ingelheim



NSERC
CRSNG

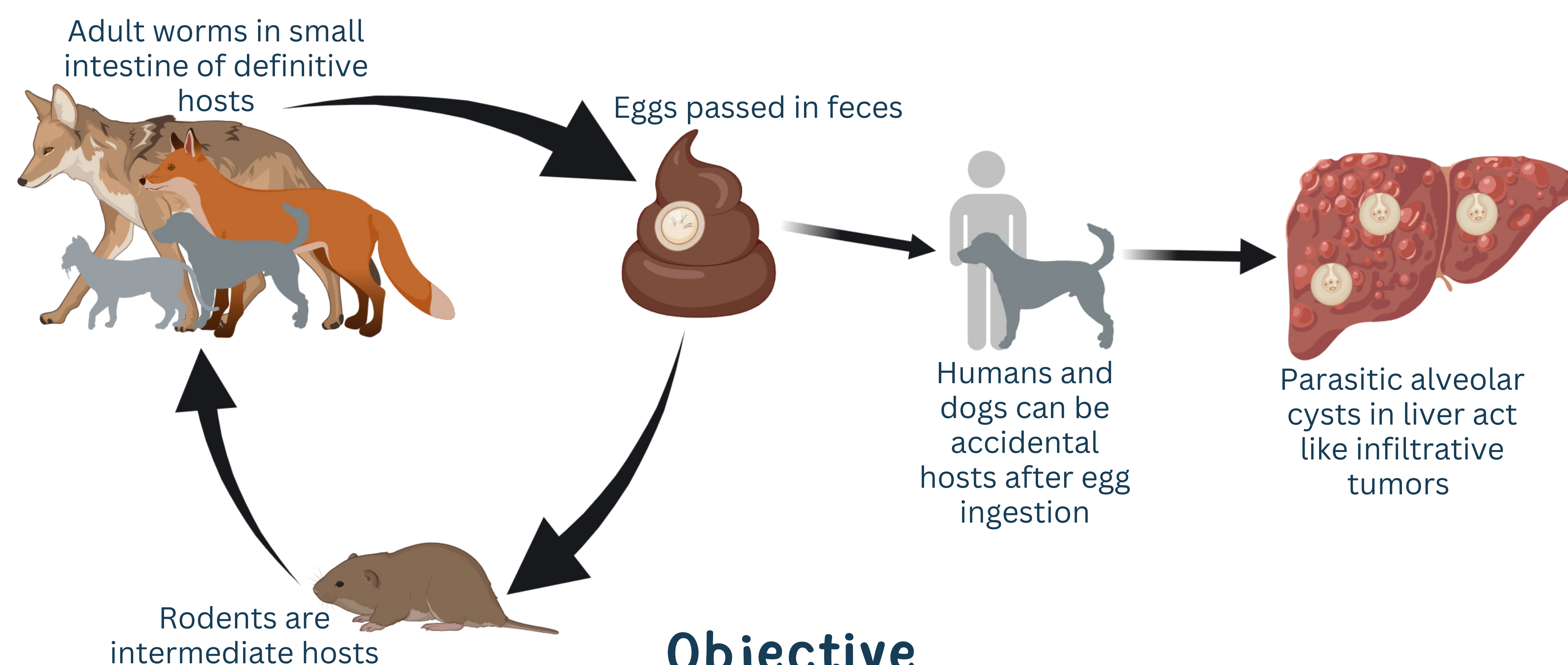


Highlights

- First *Echinococcus multilocularis* screening study on Prince Edward Island (PEI)
- *E. multilocularis* in 16/117 samples (15 coyotes, 1 fox) → 13.7% prevalence
- *E. multilocularis* presence has implications on necessary parasite prevention in domestic animals

Introduction

- *E. multilocularis* causes severe parasitic disease (alveolar echinococcosis) in humans and domestic dogs → fatal if untreated
- Not present in Atlantic Canada until 2020, found in 1 fox from PEI¹

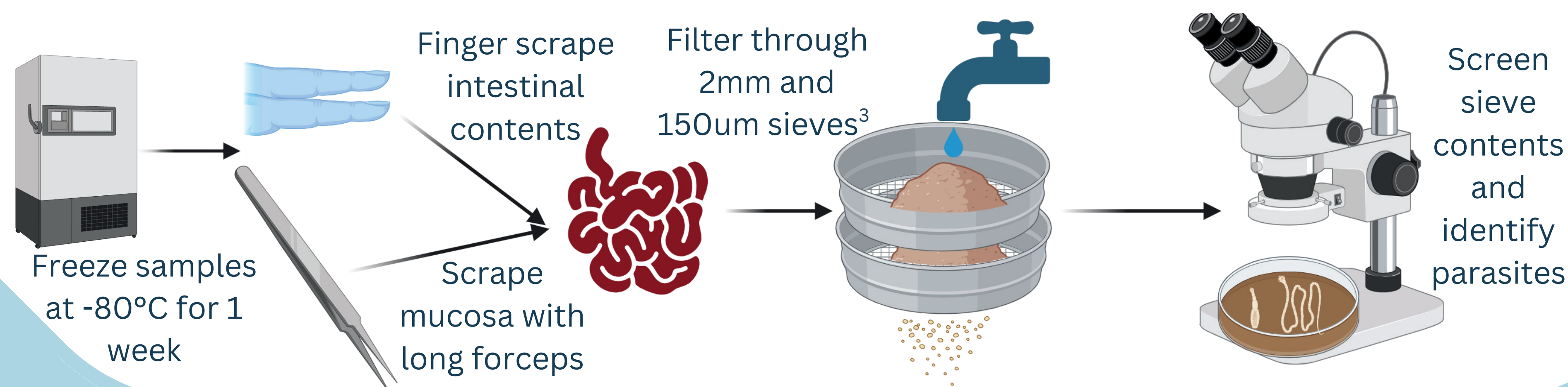


Objective

- Determine the *E. multilocularis* prevalence in PEI

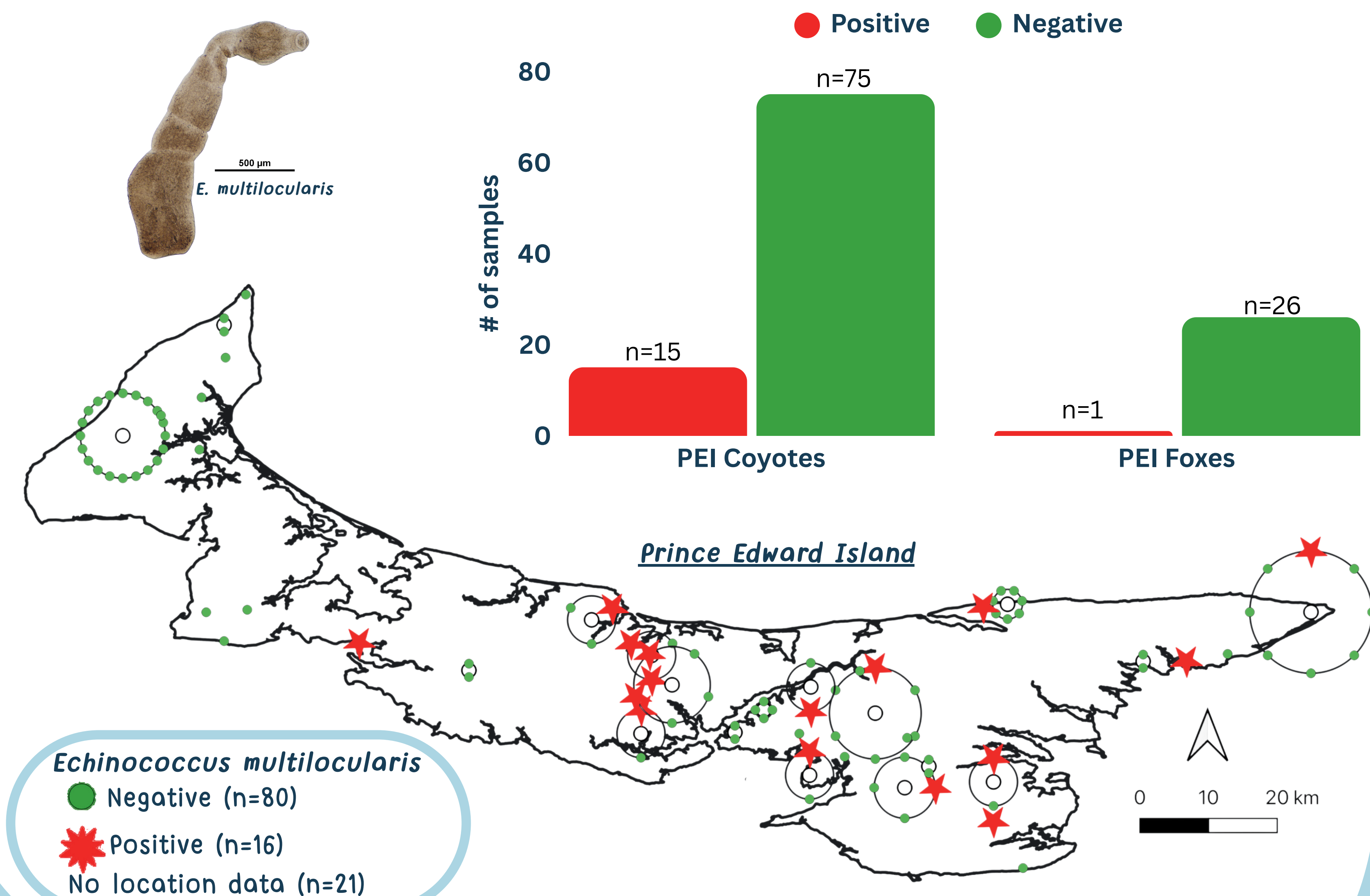
Methods

- Fox & coyote intestine collected starting 2020 through 2023-2024 hunting season
- Modification of intestinal scraping, filtration, and counting technique^{2,3}



Results

- *E. multilocularis* in 16/117 samples → 13.7 % prevalence
 - 15/90 coyotes (16.7%)
 - 1/27 foxes (3.7%)
- So far 3 cases were sequenced and confirmed to be the European haplotype



Conclusion

- *E. multilocularis* is established across PEI
- Possible single introduction point with outward spread
- Implications for proper parasite screening & control for domestic pets
- Additional information & chronological graphics:



References: 1. Robbins, W. et al. 2022. *Echinococcus multilocularis* infection in a red fox (*Vulpes vulpes*) on Prince Edward Island, Canada. Can Vet J., 2. Eckert, J. 1984. Guidelines for surveillance, prevention and control of echinococcosis/hydatidosis. WHO, 3. Gesy, K. et al. 2013. An improved method for the extraction and quantification of adult *Echinococcus* from wildlife definitive hosts. Parasitol Res 112.

Acknowledgements: Thank you to Amanda Keefe, Nicole Murphy, Elliott Christopher, Darren MacEachern, Haili Wang, and Garry Gregory and the team of PEI Fish and Wildlife. All figures designed by biorender.com. Graph designed on canva.com. Map made using QGIS.