

# What the fox is up with *Echinococcus multilocularis* in the Maritimes



UNIVERSITY of Prince Edward ISLAND



Boehringer Ingelheim



NSERC CRSNG



Brady Sweeney<sup>1</sup>, Kylee Graham<sup>1,2</sup>  
Megan Jones<sup>1,2</sup>, Nina Germitsch<sup>1</sup>

1. Department of Pathology and Microbiology, Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PEI, Canada

2. Canadian Wildlife Health Cooperative, Atlantic Region, Atlantic Veterinary College, University of Prince Edward Island, Charlottetown, PEI, Canada

## Introduction

- *E. multilocularis* causes severe parasitic disease in humans and domestic dogs, fatal if untreated
- Not present in the Maritimes until 2020, found in 1 fox from Prince Edward Island (PEI)<sup>1</sup>

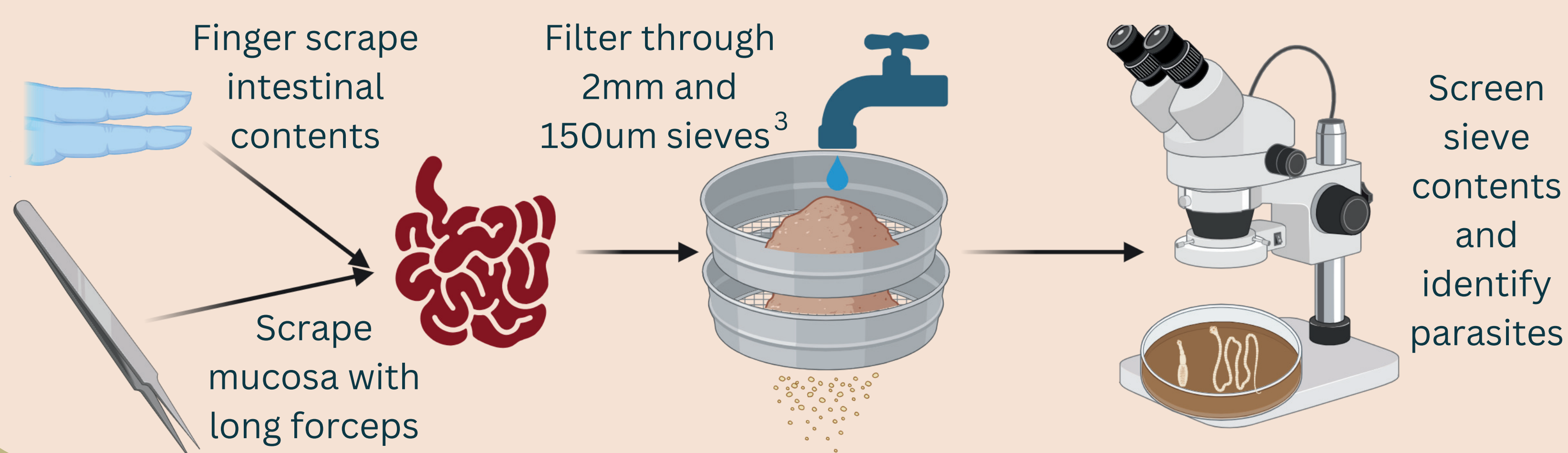


## Objective

- Determine the *E. multilocularis* prevalence in the Maritimes

## Methods

- Fox and coyote intestines frozen at -80°C
- Development of a modified intestinal scraping technique<sup>2,3</sup>

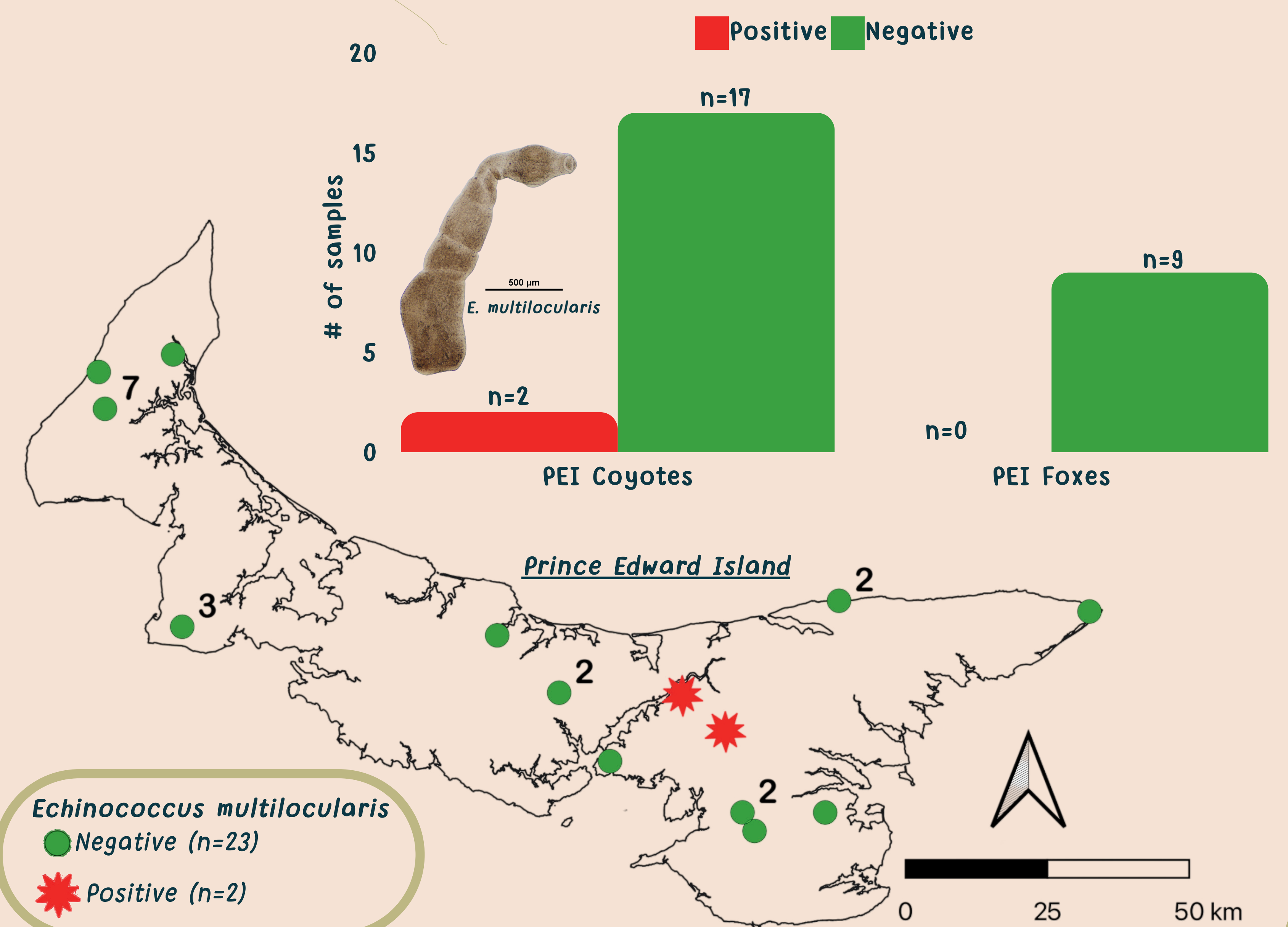


## Highlights

- First *Echinococcus multilocularis* screening study in the Maritimes
- Found in 2 PEI coyotes, not found in NB  
→ 7% prevalence on PEI
- *E. multilocularis* presence has implications on necessary parasite prevention in domestic animals

## Results

- *E. multilocularis* found in 2 PEI coyotes (28 samples screened)  
→ 7% prevalence
- *E. multilocularis* not found in New Brunswick (NB) (12 samples screened)



## Discussion

- Potential *E. multilocularis* hotspot in PEI
  - Implication for appropriate parasite screening & control
- ## Outlook
- Additional 95 PEI samples available for screening
  - Collection of additional NB samples ongoing

**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 Elliott Christopher, Darren MacEachern, Nicole Murphy, Amanda Keefe, Laura Leaman, Jonathon Cormier, Eric Fortune, Haili Wang, Spencer Greenwood, and Garry Gregory and the team of PEI Fish and Wildlife. All figures designed by biorender.com. Graphs designed on canva.com. Map made using QGIS.

