

Determining the prevalence and distribution of *Echinococcus canadensis* in Nova Scotia’s wild fox population

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Highlights

- First study investigating the prevalence of *Echinococcus canadensis* in Nova Scotia foxes
- No positive samples to date suggest foxes are not a key host species for *E. canadensis* in Nova Scotia
- Further research is ongoing to identify if there is an increasing transmission risk of *E. canadensis* among other host species

Introduction

- *Echinococcus canadensis* is a zoonotic helminth parasite endemic to Canada and the US¹
- It cycles between wild cervids (primarily moose) and canids (e.g., coyotes, wolves, foxes)¹
- Increasing prevalence in wild canids in Nova Scotia poses a potential threat to the endangered mainland moose population²
- As intermediate hosts, moose can develop hydatid cysts that impair organ function and increase predation risk²



Objectives

- 1) Document the occurrence of *E. canadensis* in the Nova Scotia wild fox population
- 2) Identify areas where there may be a high risk of transmission

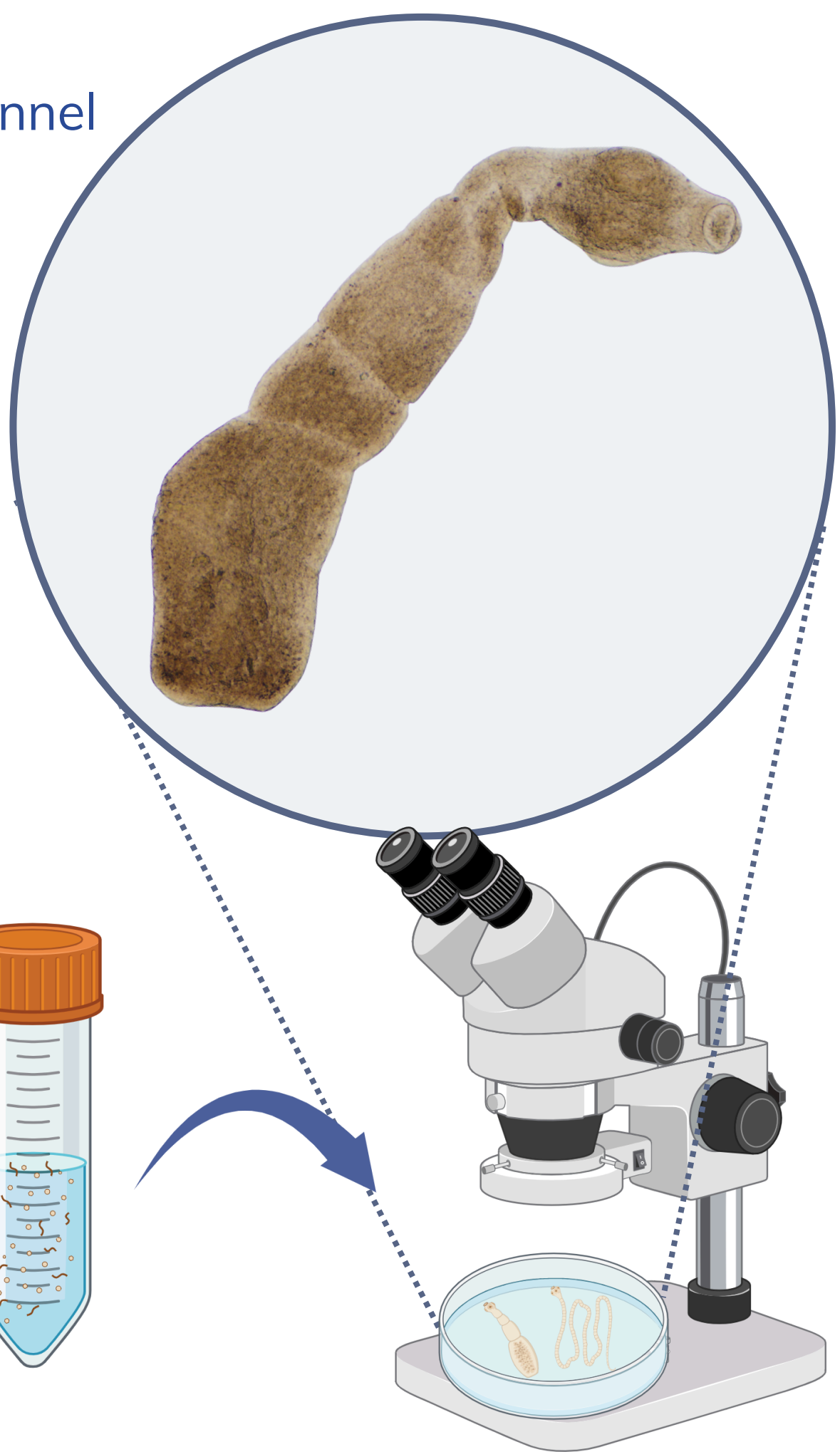
Methodology

Step 1 - Small intestines were collected from fox carcasses donated by hunters, trappers, and government wildlife personnel

Step 2 - Intestines were frozen @ - 80°C for a minimum of 7 days to inactivate any zoonotic eggs

Step 3 - Intestines were processed using a modified intestinal scraping and filtration method to isolate parasites

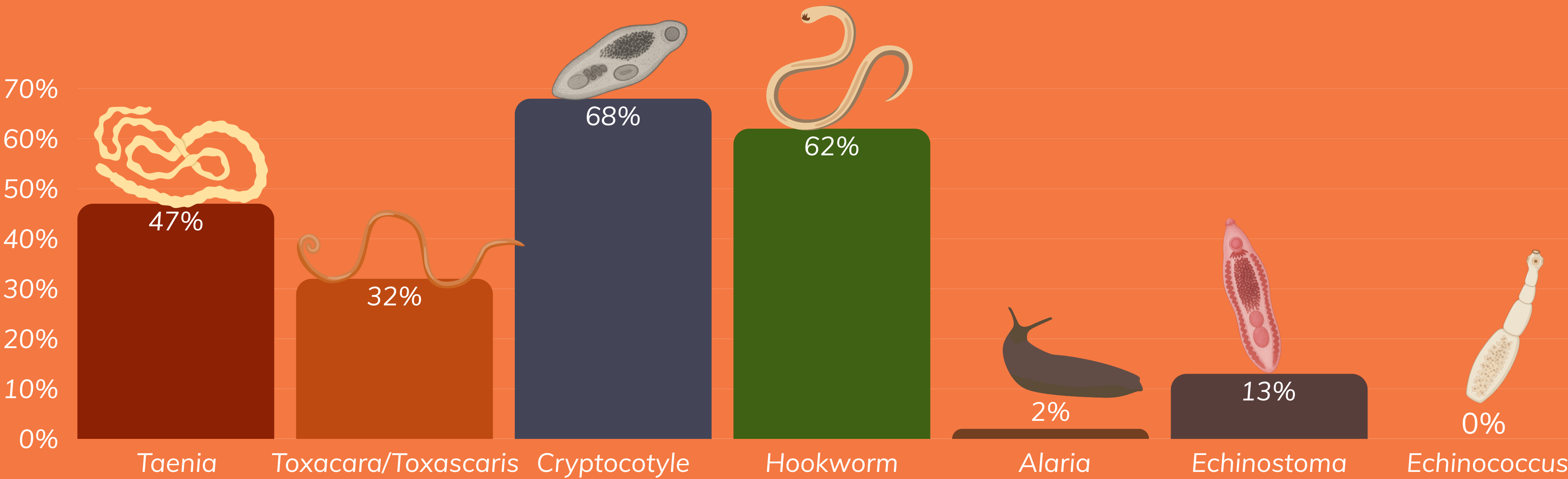
Step 4 - Samples were then screened under a dissecting microscope to identify any parasite species



Results

- Of the 47 samples processed to date, none have tested positive for *Echinococcus canadensis*; the study is ongoing

Prevalence of intestinal parasites in Nova Scotia foxes



- *Cryptocotyle lingua* has the highest prevalence of all intestinal parasites identified (68%)
- A map of Nova Scotia is shown on the right depicting where samples were collected



Conclusion

- Preliminary results suggest limited emergence and spread of *E. canadensis* among fox populations in Nova Scotia
- Results suggest foxes may face constraints in scavenging opportunities or exhibit limited scavenging behavior
- Current restraints on hunting moose in the region would decrease the occurrence of organ piles available to foxes

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References: ¹Priest, J. M. et al. 2021. International Journal for Parasitology: Parasites and Wildlife. 16, 285–288. ²Joly, D.O. 2004. Oecologia. 140(4), 586-590.