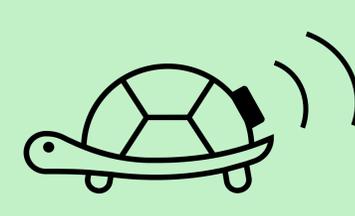
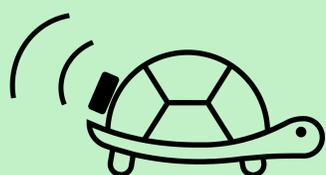


Tracking Snapping Turtles (*Chelydra serpentina*) Using Acoustic Telemetry

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Background

Common snapping turtles (*Chelydra serpentina*) are freshwater turtles that spend most time in water environment.

Relatively abundant but snapping turtles have **long lifespan** with **low recruitment** and **delayed maturity** which **increase** vulnerability to anthropogenic threats

Species at Risk Act -> **Special Concern**

Nova Scotia Endangered Species Act -> **Vulnerable**

Snapping turtle **movement data limited** but critical for identifying and protecting habitats

Acoustic telemetry, common for tracking aquatic animals, increasingly applied to freshwater turtles



Figure 1. Image of a Common Snapping Turtle (*Chelydra serpentina*; Image taken by Daigle 2025).

Objectives

1. Determine when snapping turtles are active in the aquatic environment

2. Observe the connectivity within lakes and between lakes

Study Site

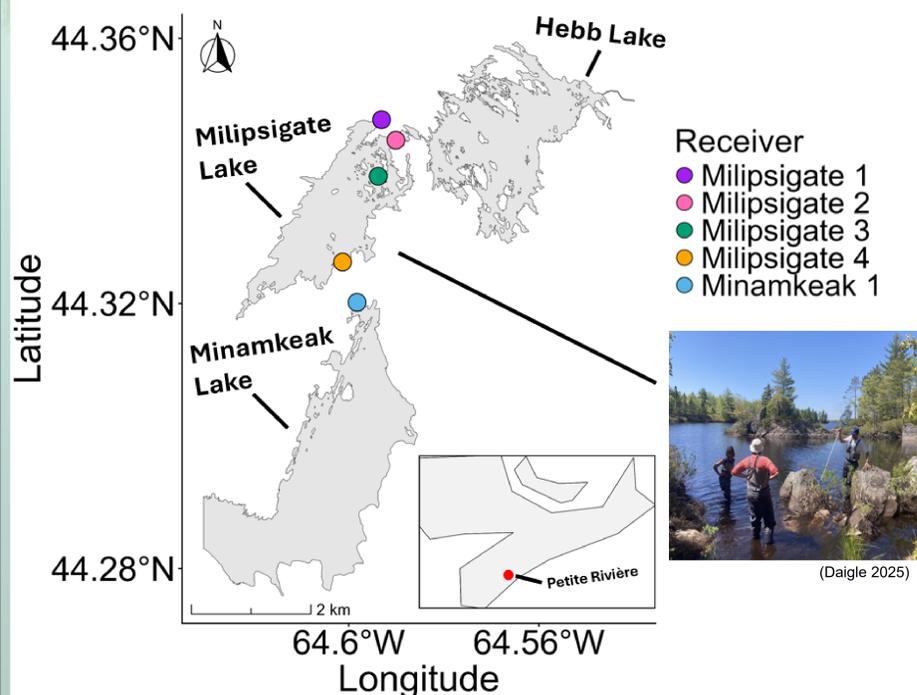


Figure 2. Locations of acoustic receivers deployed to track common snapping turtles in interconnected lakes (Minamkeak Lake and Milipsigate Lake) the Petite Rivière, Lunenburg County, Nova Scotia. Each receiver site is marked by a colored circle. The inset photo (bottom right) shows lakes environment, along with a map of Nova Scotia highlighting the study area with a red dot.

Results

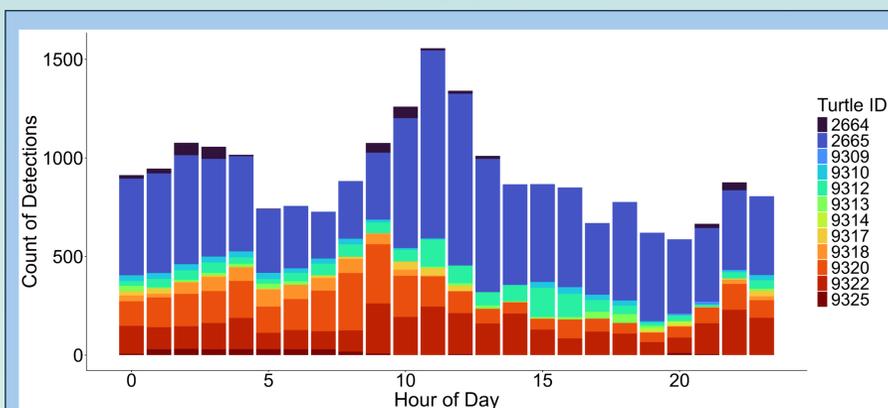


Figure 3. Histogram of detection counts of snapping turtles (*Chelydra serpentina*, N=12) by hour of the day over 7 months. Peak detection time varied across individuals; however, overall detections occurred the highest during mid-day (around 10-12 pm).

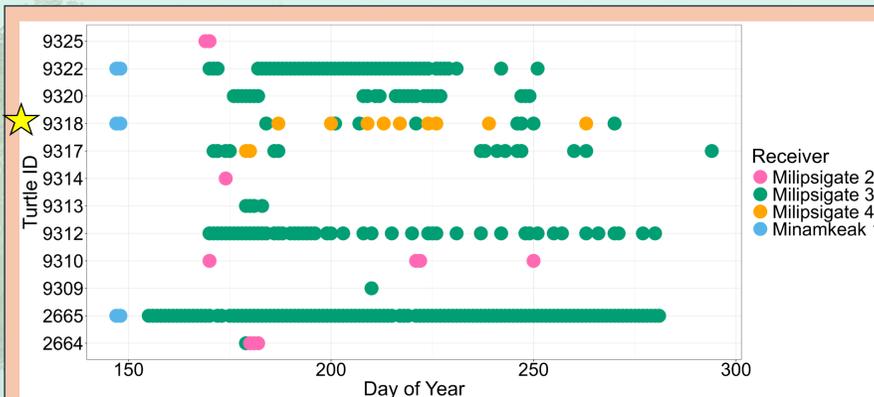


Figure 4. Abacus plot showing snapping turtle detections over 7 months, with Julian Day on the x-axis and turtle ID on the y-axis. Each receiver is represented by a uniquely colored circle. A yellow star in the top right links turtle 9318 to Figure 5, which shows visually where it was detected during the study period

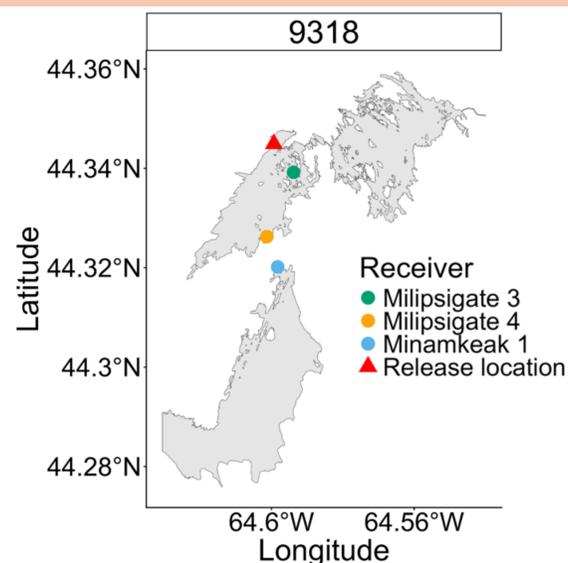


Figure 5. Map showing where snapping turtle 9318 was detected over 7 months. The release site is marked by a red triangle. Each receiver is shown as a colored circle. A yellow star in the top right links turtle 9318 to Figure 4, which shows detections during this period.

Methods



Figure 6. Example of a transmitter attached to a snapping turtle using super glue and plumber epoxy. This device was placed on the bottom part of 12 snapping turtle carapaces. Turtles were tagged from late May to Late June.

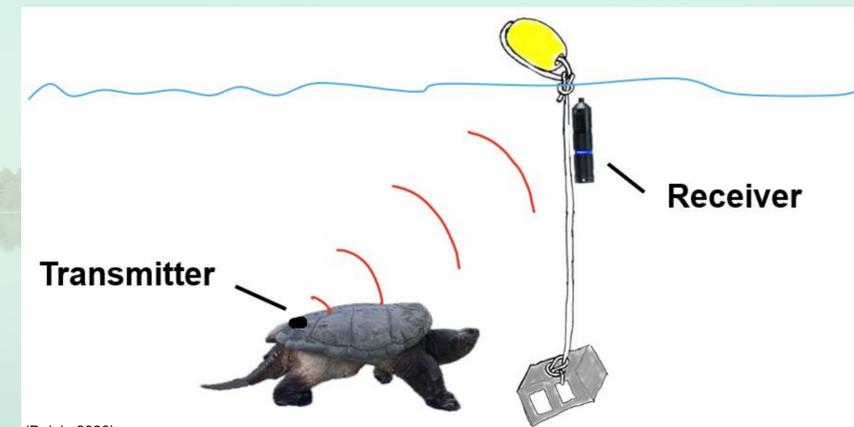


Figure 7. Diagram of a tagged snapping turtle being detected underwater over a period of 7 months (May-December). Receivers were retrieved in December 2025.

Next Steps

Model time spent in aquatic environments to determine how habitat use varies across individuals and time using generalized additive models (GAMs)

Data on seasonal movement can be used for the **management of snapping turtle habitat**

Acknowledgments

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References

