



REMARKS

OBSERVATIONS OF TURTLE EGG IMPLOSIONS DURING THE 2022-2024 FIELD SEASONS

As part of the permitted ex-situ incubation process, turtle eggs are excavated from the ground to be transported to the incubation facility. During the 2022-2024 field seasons, we observed increasing instances of egg implosions from Snapping Turtles (*Chelydra serpentina*) and Painted Turtles (*Chrysemys picta*). Originally, our observations were isolated to primarily Snapping Turtles within the Canadian Shield in the northern reaches of Haliburton County and parts of Muskoka, however in recent years we have noticed the implosions occurring further south and affecting Painted Turtles as well. In 2018-2021, no implosions were noted. The egg implosions are characterized by a complete caving inward of the eggs, often coupled with an audible 'popping' sound within the first five minutes of excavating. As the third largest incubator in Ontario, these implosions are only known by The Land Between Charity's Turtle Guardians program, as we have been the only organization in the past two years incubating eggs centrally in the Highlands in the Canadian Shield's Algonquin Dome. It is unknown if or where else the egg implosions are occurring.

Although the majority of the nests we excavate do not implode, these implosions reduce the success of the eggs and warrant further investigation. It is known that calcium levels are declining in lakes, especially within the Canadian Shield. The Land Between Charity will be conducting a study to determine whether these implosion events are related to low calcium levels in surrounding lakes and wetlands. This will be done by assessing correlations between lake calcium levels, calcium levels in turtle aquatic food sources, locations of imploded nests, and turtle eggshell characteristics such as thickness, strength, and calcium content.



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