A LONG WINTER AHEAD... FOR A REPTILE OR AMPHIBIAN IN NH!



NH LAKES presentation Nov. 4, 2020

Josh Megyesy, Wildlife Biologist Joshua.Megyesy@wildlife.nh.gov NH Fish & Game Dept. Nongame and Endangered Wildlife Program







40 species of herpetafauna in NH

11 snakes

7 turtles

10 frogs



12 salamanders









40 species of herpetafauna in NH

12 are listed as endangered, threatened, or special concern due to a wide variety of anthropogenic threats





ECTOTHERMS

VS

ENDOTHERMS





ECTOTHERMS

An animal that is dependent on external sources of heat

VS

ENDOTHERMS

An animal that is dependent on or capable of internal generation of heat





BY THE END OF OCTOBER THEY ARE ALL HIBERNATING FOR THE WINTER...

BY THE END OF OCTOBER THEY ARE ALL HIBERNATING FOR THE WINTER...

BUT THEY ALLHAVE DIFFERENT HABITATS AND STRATEGIES FOR SUCCESS...

Let's start with frogs...



Wood Frog Photo by J. M. Storey

Wood Frog Photo by J. M. Storey

Gray Treefrog Photo by J. M. Storey

Wood Frog Photo by J. M. Storey

Gray Treefrog Photo by J. M. Storey



Salamanders cannot freeze. So what do they do?



Burrow below the frost line

- E.g., "mole salamanders" such as spotted, marbled, blue spotted, and Jefferson's salamanders
- Use mammal borrows often

Stay in oxygen-rich water

- E.g., "stream salamanders" such as northern two-lined, spring, and northern dusky salamanders
- Also their warm season habitats











Let's Talk Turtles



- Turtles hibernate underwater by lowering their heart rates
- They can take in small amounts of O2 from the water through specialized tissues in their mouth and cloaca!!
 Butt breathing!!
- As the winter goes on they incur an oxygen debt, which increases lactic acid in their blood





Turtle shells are for more than just protection...



Turtles use calcium from their shells to buffer the acidity they buildup in their blood and tissue during periods of low oxygen



- Painted turtle hatchlings hatch in the ground and spend the entire winter in the nest chamber
- They "supercool" to near frozen solid
- Ice crystals in the soil can kill a hatchling, so they have a durable alpha keratin layer on the outside and lipid layer on the inside











Chipmunk ourrows

Rock grevices







Your basement

QUESTIONS?