

# Where the Wild Things Are Wetland Creatures in Winter

BY LORI CAPONE,  
CONSERVATION COORDINATOR

During the spring, summer, and fall our conservation areas are teeming with life, from the smallest insect to the bobcat family that has been frequenting Sudbury this year. But as the cold sets in and ice forms on our wetlands, many of our birds fly south, our mammals hibernate, and a blanket of silence envelops our woodlands. But where do our wetland creatures go when their habitats turn to ice?

Many of the wetland's reptile and amphibian species go through a process called **brumation**. Brumation is a process that allows species to lower their heart rates, body temperature, metabolism, and activity which allows them to survive in suspended animation. Their energy needs are so reduced in this stage that they do not eat and barely breathe.



*Courtesy of Appalachianhistory.net*

As winter approaches, our aquatic turtles borrow into the mud and into the banks of our ponds. Terrestrial turtles burrow underground.

Fluctuations in water elevation, once these species find their overwintering grounds, can have devastating effects, causing them to suffocate if water levels rise or freeze from exposure if the water levels drop. Some turtles have even evolved to become freeze tolerant, meaning they can survive for some time even if their body fluids freeze. While others use a process called supercooling, where they can keep their body fluids from freezing, even when temperatures drop below the freezing point.

Frogs can overwinter under water, burying themselves in the sediment, and can exchange oxygen through their skin. When dissolved oxygen levels in the water column drops below critical levels, frog's survival becomes more challenging. In those instances, frogs will travel to colder water in order to further lower their metabolism which will result in increasing the amount of oxygen in their blood. Terrestrial frogs and toads will burrow under logs and leaf litter. But some species, such as the wood frog, actually tolerate freezing by using high concentrations of sugar to act as an antifreeze in their organs to keep them alive while other parts of their bodies become frozen. As temperatures warm up, their heartbeat and breathing return to normal and they spring back to life.

This is just one reason why the Conservation Commission protects wetlands as well as the uplands adjacent to wetlands in their natural state. Downed logs and leaf litter, while unsightly to some, are critical elements needed for the survival of many.