

A WARM PLACE FOR WINTER



The Eastern American Toad digs into loose soil before the first frost.

ON LAND

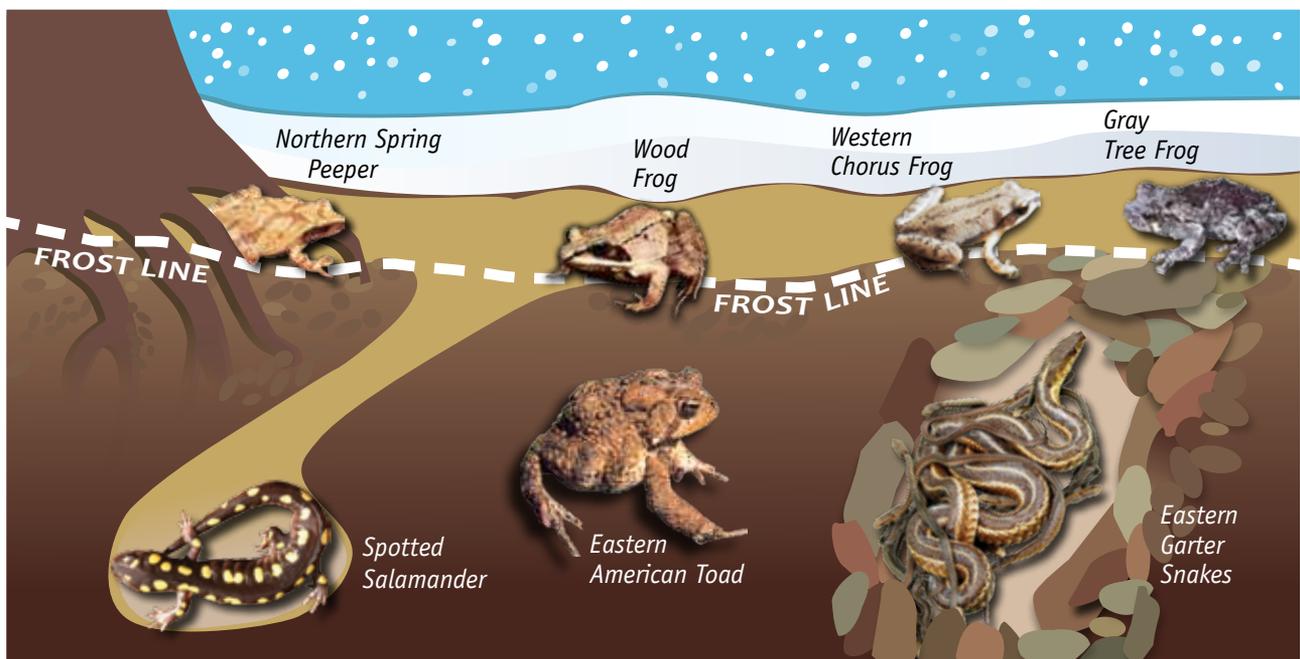
Reptiles and amphibians find shelter and protection during colder months in their **hibernaculum**. This is a protected spot that shelters them from harsh weather.

Reptiles and amphibians that live on land often hibernate underground. Toads dig their own burrows. Salamanders, snakes and lizards may use burrows, dens or tunnels made by small mammals.

Snakes usually move from a summer habitat to a winter den. Dens are often caverns or crevices of rock formations.

Other den sites include underground tunnels and burrows of wildlife. Many different species may hibernate together, and one den may contain hundreds of snakes. Non-venomous snakes will hibernate with venomous species.

Many hibernating amphibians and reptiles stay below the **frost line**. The ground above the frost line freezes, while the ground below the **frost line** does not freeze. The **frost line** will be deeper in extremely cold weather. It may be closer to the surface in mild winters.





Snapping Turtles hibernate in shallow water, buried in mud in places which do not freeze to the bottom. Its hibernation ends in April when it emerges from a mud bank, muskrat hole or from under a collection of vegetative debris.

LIVING IN COLD WATER

Many aquatic reptiles and amphibians hibernate underwater during the winter. These animals burrow into soft mud along the banks or at the bottom. Some turtles will use an underwater muskrat den as a **hibernaculum**. If the water is not frozen, many salamanders remain active throughout the winter.

Turtles, salamanders and frogs have to breathe under frozen water during the winter. Their slow **metabolism** requires little oxygen. Oxygen from the water and mud is absorbed across their skin.

Aquatic turtles can obtain only a tiny amount of oxygen from the water and mud

through their skin. During the winter, their bodies also get oxygen by breaking down stored energy. The stored energy is in the form of sugars and proteins within their bodies. The gathering of byproducts of this process can be dangerous. However, turtles also have a natural antacid. The calcium carbonate in their shells neutralizes the lactic acid.

Turtles are very sluggish during **hibernation**. Painted turtles can have a heartbeat as low as one beat every 10 minutes. Their normal heartbeat during the summer is 30 to 40 beats per minute.

ANSWERS
to A-mazing
Winter Survival.

