

Adaptations to Temperature

DID YOU KNOW

Living things change as they interact with their surroundings. As seasons change, animals (including humans) respond to changes in temperature, the amount of light and type of precipitation. These responses to the environment are called adaptations. We are all familiar with the heavier coats most winter residents develop. But there are other responses as well. Sometimes the response is to move to a better environment; sometimes the animal stays in the same place but alters himself to adjust to the environment

HIBERNATION

The word comes from the Latin word for winter. During cold weather, many food sources are unavailable. Grass and other vegetation dies back and insects disappear.

To survive the winter without food, some Missouri animals go into a deep sleep. The most famous hibernator is the woodchuck. He eats as much as he can before winter comes, digs a sleeping chamber in his tunnel, curls up and goes to sleep. His heart beat drops from 80 beats a minute to 5; his body temp goes down to 38o (normal is 98o) and his teeth stop growing. Other Missouri mammals that hibernate are ground squirrels and bats.



Raccoons, skunks spend most of the winter in their dens, taking long naps, breathing a bit more slowly and lowering their body temperatures. They readily venture outside between winter snows.

Cold-blooded animals can't keep themselves warm in winter. Frogs and turtles bury themselves in the mud below the frost line - they absorb oxygen from the air trapped in the mud. Some snakes head underground, others gather together in sheltered places, like rotted out logs. The snakes here at Lakeside Nature Center are active all year round because they have plenty of food.

ESTIVATION

Some animals spend the summer (or parts of it) inactive and insulated against heat to avoid the potentially harmful effects of the season (such as the increase in temperature, or relative lack of water), or to avoid being preyed upon. Estivation (derived from the Latin word for summer) is the term for this unusual and rare process.

Some animals, like frogs, toads, lizards and snakes, may estivate to conserve energy when their food and water supply is low. Mud turtles commonly sink to the bottom of their ponds and bury themselves in mud till the temperatures moderate. The yellow mud turtle at Lakeside Nature Center doesn't need to estivate because the conditions in his tank are close to ideal.

Snails also estivate during periods of heat during the day. They move into the vegetation, away from the ground heat, and secrete a membrane over the opening to their shell in order to prevent water loss

Mammals and birds may exhibit a similar behavior called torpor. The difference is that torpor lasts for a few hours during the hottest part of the day, while estivation may last several weeks.



MIGRATION

Animals may move from one place to another as a result of temperature changes. While birds are the most familiar migrants, they are joined by salmon, humpbacked whales and caribou.



Monarch butterflies migrate (relocate) each year in enormous numbers from summer breeding grounds in Canada and the eastern United States to California and Mexico. This amazing trip takes several generations of monarchs to complete. Each monarch migrates in only one direction during its lifetime.

Birds migrate south searching for food and shelter. Chimney Swifts migrate all the way to the Amazon basin and Broad-winged hawks winter in Yucatan. Some birds go just a short distance; Turkey vultures spend the cold season as close as Springfield, Missouri. On the other hand, Kansas City welcomes several hundred wintering bald eagles and thousands of Canada geese, snow geese and ducks.

Many of the songbirds familiar to us in Kansas City (like the scarlet tanager, ruby-throated hummingbird, rose-breasted grosbeak, bobolink and Northern oriole) spend their winters in South America and return to our area to nest and raise their families.