

Encounter/Outreach – Animals in Winter

Objectives: Identify animals that remain in Michigan or northern climates year around. List at least four adaptations that allow animals to cope with the colder weather.

Key Terms: **Migration, Adaptation, Cold-blooded, Warm-blooded, Hibernation and Torpor.**

REPTILES: Snakes are **COLD-BLOODED** and **HIBERNATE** during the winter in a burrow or den underground. The Box Turtle is also cold-blooded, but it hibernates in leaf litter or under forest floor debris. The fox snake hibernates in abandoned mammal burrows during the winter. The spotted turtle hibernates in the mud at the bottom of a marsh or pond. Aquatic turtles do not have gills, but get enough oxygen from the water by increased circulation in their mouth and their anus.

MAMMALS: The Chinchilla is a mammal and therefore **WARM-BLOODED**. It lives high in the Andes Mountains of South America where temperatures are extremely cold. This animal has a unique **ADAPTATION** – the thickest coat of any land mammal, with 80 to 150 hairs per follicle. This traps air close to the body, forming a layer of insulating warmth. Clean hair is very important to trap the air. Dust baths in the lava ash found all over the Andes Mountains keep the hair dry and fluffy so it can keep the animal warm. This type of dry bath is another adaptation. European Ferret - A burrowing mammal, the ferret spends time in a burrow or den to keep warm. It changes coats for winter by growing a thicker underfur in the fall. Short ears help to avoid frostbite during winter (a good adaptation). Tenrec – this mammal comes from a tropical part of the world, the Island of Madagascar. Madagascar has a “dry” winter rather than the “cold” winter we know. Very primitive, this animal can die of hypothermia at temperatures below 62° F. The adaptation it has for surviving the very dry months of winter is called **TORPOR**. Torpor is a state of reduced activity; animals become sluggish, which conserves energy. This allows them to go for extended periods of time without eating. Torpor is an adaptation for surviving times of low food supply. Black bears in Michigan undergo torpor in winter.

BIRDS: What about geese? Where do they go in winter? The geese **MIGRATE**, an annual movement from one place to another and back again. Why do they need to migrate? In winter they would starve, so by migrating to warmer climates they are able to find the plants they need to eat to survive. Have students name some birds that migrate and some that do not. Feathers wear out. For some birds, they need healthy, new feathers in order to survive the bitter cold of winter. New feathers are grown during the summer for the flight south. How do penguins keep warm in cold waters? Two layers of feathers are coated with special oil. This keeps the water out and traps a layer of warm air close to the body. They also have a layer of fat to help insulate them. (Pass the plastic bag of feathers around the room asking each student to cup hands around the bag. Do they feel their hands heating up? Was the bag warm after being held by the person before them?) Good insulator. Ask how many of them have a down coat for winter. What is “down?” It’s the small, fluffy feathers of birds, which lie close to their bodies for warmth. Are down coats warm?

BIOFACTS: Arctic Fox Skin: Note small ears, bushy tail, and hair on soles of feet. (Have the students pass this around the room and feel how thick the fur is.) In the Arctic tundra, snow is on the ground during most of the year. In summer, however, the snows melt and the Arctic fox sheds its thick, white winter coat and grows a shorter, gray coat that camouflages it for the summer months. This is a good adaptation for survival. Have students name other animals who get a white winter coat (snowshoe hare, weasel, ptarmigan). Show pelt of white-tailed deer or caribou. Describe how winter coats of deer family are comprised of hollow hair which insulate much better than the solid hair of their summer coat.