

TOUR: ANIMALS IN WINTER

OBJECTIVES

Identify five animals on exhibit that remain in Michigan or northern climates all year and list at least four adaptations that enable animals to cope with the changing seasons.

TERMS

Adaptation, cold-blooded, hibernation, migration, warm-blooded

ADAPTATIONS

Features that allow animals to adjust to their environment. They may be phenotypic (an acquired trait that is acquired during growth and development, such as the muscles of a weightlifter) or genetic (the inherited spots of a cheetah). They may be physical or behavioral.

PPZ ANIMALS

Arctic fox: Dor camouflage, the thick coat is white in winter, changing to a summer coat of gray. Fur on the soles of their feet help give them better traction on the snow and ice and help keep feet warm. Another adaptation, their small ears and thickly furred to help prevent frostbite.

North American river otter: Remain active throughout the winter months. Otters seem to enjoy tobogganing, using riverbanks as slopes to slide onto the ice. Thick fur traps body heat, insulating them from cold air/ water.

Bald eagle: Migrate until find open water; a few miles or a thousand. Scavenge deer in northern Michigan.

Gray wolf: Found in four-season climates all around the world and in tundra habitats, wolves grow thicker coats in winter to help insulate them against the cold. Bushy tails can be wrapped across the nose to keep it from freezing while they sleep. Hunting together in a pack, wolves take advantage of deep snow, which will tire or strand prey like deer, elk or moose.

Barred owl: Don't migrate. Have feathers in their legs for warmth.

Red panda: Live at higher altitudes, cooler climate. Sun in treetops in winter to warm up, save energy.

Pallas cat: Live in climates with temperatures ranging from 100°F to -45°F (38°C to -43°C). Pallas cats are poorly adapted to moving through deep snow, so their habitat is restricted to areas with less than 4 inches (10 cm) of snow cover during the winter.

Amur tigers: Live in a four-season habitat. Their coats become much thicker and shaggier as winter approaches, and they become more active in cooler weather.

Snow leopards: Live in the Himalayan Mountains where it is winter most of the year. Small ears, a long, bushy tail, hair on the pads of their feet and a thick coat are adaptations for another winter animal, the Arctic fox. To eat during the winter, they follow the herds of migrating hoof stock.

Moose: Moose are perfectly adapted to live in cold weather, and the colder the better. Their large body size reduces heat loss because of the low surface-area-to-volume ratio. Long legs allow adult moose to handle snow depths of 36 inches (white-tailed deer can handle about 18 inches), although moose do prefer to spend the winter in an area that provides plenty of browse near a sheltering, mature mixed-wood or coniferous forest. This shelter actually serves a dual purpose—not only does it help moose deal with crust or very deep snow, it protects them from heat! Moose are so well insulated from the cold that winter temperatures of 23°F (-5°C) will make them pant. As our winter temperatures can be quite variable, moose depend on the shade of softwood cover to keep them cool during our warmer winter days. On warm winter days, some moose will lie flat in the snow to try to dissipate their body heat. Moose will begin panting at 68°F (20°C) and summer temperatures as low as 57°F (14°C) can cause moose to begin to suffer from heat stress.

Magellanic penguins: Found in about the same climate as northern Michigan. They have a heavy layer of fat and down feathers to insulate and migrate north to warmer waters.

BIRD/REPTILE BUILDING

Reptiles/amphibian: All are cold-blooded and therefore unable to be out in our cold climate seasons. They employ hibernation to survive. Their bodies slow down in the winter while they stay buried in holes. While underground, the temperature remains fairly constant. In the spring, when the sun warms the earth, they “wake up” and are ready to return to the surface. Birds have excellent insulation with their downy feathers next to the skin, helping to keep heat in.

Bactrian camel: Thick coats protect from inclement weather; camels shed in spring. Bactrian camels are able to survive temperature ranges temperatures from over 100° F (38° C) in the summer to -20° F (-29° C) in the winter. The wool is so luxurious it is used to make fine winter garments. Humps comprised mostly of fat—used as reserve fuel in winter.

Note: If time allows, you can always show some of the pelts, penguin down and other appropriate biofacts in the education center.