Field Notes

Oak Hammock Marsh Interpretive Centre **November 2002**

Did you know?

- That 90% of Manitoba's birds migrate.

- That ground squirrels, frogs, toads, salamanders, and snakes all hibernate.

- That Monarchs migrate all the way to Mexico.

Surviving the Winter

Have you ever wondered what nature must do to prepare for the winter? The mammals, insects, birds, reptiles, amphibians and even plants all manage to survive the winter using a wide variety of ways. Some migrate to warmer areas, others hibernate, and others have adapted unique ways of coping with the cold and lack of food.

During late summer and fall, many species travel farther south. This is known as migration. It is best known in birds, however, some mammals and insects also move long distances.

Many animals, mostly mammals, slow down and become less active during the winter to conserve energy. Mice and deer use this strategy. Others will sleep a lot and wake only to feed, such as bears, foxes and skunks. Many small mammals and birds like shrews and hummingbirds will go into torpor. This usually occurs at night, these animals lower their body temperature to conserve energy. There are very few animals that truly hibernate.

There are many ways animals can keep themselves warm. Some birds grow extra feathers on their bodies and legs. Some mammals grow thicker, longer hair to trap air that acts as an insulator. The extra feathers and hair are usually shed in the spring and regrow each fall.

Other birds fluff up their feathers to trap air close to their skin to keep them warm. A good example of this is the Black-capped Chickadee, found at many backyard feeders. On a cold day these birds will appear to be larger and plumper. Other birds and animals will huddle together to share body heat and stay warmer that way. This behaviour is shown by Red-sided Garter Snakes, chickadees, bats and muskrats.

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Survival continued

Some animals seek shelter from the cold. Some will hide in tree holes, under vegetation, below ground and even under the snow. The temperature under the snow can be -3 or -4ºC when the air temperature is -30ºC. A good example of this behaviour is mice. They stay active all winter under the snow at ground level.

To deal with the unavailability of food during the winter, many animals store food that is plentiful during the fall. Mice, chipmunks and squirrels store large quantities of nuts and seeds to carry them through the winter. Some birds, like the Black-capped Chickadee, Gray Jay, and Blue Jay also store food. It has been shown that they have larger brains and grow new brain cells each fall so that they can remember where they hid the food!

Other species change their diet to deal with food shortages. Black-capped Chickadees feast on insects during the summer and switch to seeds and nuts in the fall. Rabbits, hares, voles and deer switch from green leaves and plant parts to buds, bark and twigs.

During the autumn, many plants and animals prepare for the harsh winter season by entering a new stage in their life cycle. Plants produce cold-tolerant seeds that will germinate in the spring. Most plants lose their leaves and become dormant, thus avoiding life-threatening desiccation.

Many insect species overwinter in the egg, larval or pupal stage rather than as adults. An example is the woolly bear caterpillar, which waits out the cold curled up in a protected place. At Oak Hammock Marsh, woolly bears are seen crawling across the trails looking for good spots to spend the winter months.

Some animals, including many insects, 4 species of frogs and one species of turtle can actually survive after being partially frozen. These animals can survive for weeks with more than half of their bodily fluids frozen. While frozen there are no movements, respiration, or heartbeats and ice crystals form between the cells. Here in Manitoba, we have the Northern Spring Peeper, Gray Treefrog, Wood Frog, and Western Painted Turtle that can withstand freezing.

Animals that can not withstand freezing, produce a natural substance similar to antifreeze. These animals change their body chemistry so that ice crystals do not form. Some insects use glycerol (an alcohol) and others use a sugary antifreeze. It allows them to survive beneath the snow at temperatures from –15 to -38ºC and still stay active.