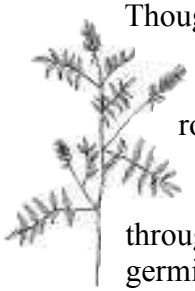
Another wonderful fall is upon us. Gardens have been tilled under, their bounty stored up in our cellars and freezers, and final preparations for winter are underway.

Likewise on the Manitoba Tall Grass Prairie Preserve. As the leaves continue to fall, things are becoming progressively quieter. The summer resident birds have left and the migrating flocks of Sandhill cranes, warblers and eastern blue birds will soon be gone as well. The remaining winter residents are busy preparing for winter in their own unique ways.

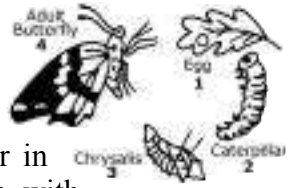
Sowing the Seeds of the Prairie…



Though a few late-flowering plants are still hanging on, most have set seed and are transferring remaining nutrients and energy reserves into their massive root systems. Over the winter, the seeds of many plants will be dispersed by wind and animals. Did you know that the seeds of legumes must pass through an animal's digestive system before they can germinate? The digestive acids are needed to break down the seed's protective coating. Incidentally, piles of empty seed pods from legumes such as the wild licorice lay scattered throughout the Preserve – their contents devoured by hungry grouse.

Hey, Where'd Everybody Go?

As flowering ceases and above ground plant parts die back, insect activity also dies down. Each insect species has a particular life cycle stage (i.e. egg, larva, pupa or adult) that is best suited for toughing out the winter. Even among butterflies, there are various methods of overwintering. **Monarchs**, for example, migrate to Mexico. **Fritillaries**, **mourning cloaks**, **painted ladies** and **red admirals** overwinter as adult butterflies, seeking shelter under dead leaves, twigs or in wood piles where they hang upside down with their wings folded together. **Swallowtails** and **orange sulphurs** overwinter in the chrysalis (pupal) stage and **checkerspots** and **tent caterpillars** survive as partly grown caterpillars.



In addition to seeking shelter under loose bark, leaf litter, rocks and debris, or burrowing a couple of inches into the soil, insects are known for their ability to produce their own natural antifreeze agents - chemical compounds, such as glycerol, that effectively lower their freezing temperature and allow their cells to freeze without bursting.

Heading to the Land Down Under!

This year was an exceptional year for frogs – particularly leopard frogs. But where have they all gone?

Leopard frogs spend the winter in the mud at the bottom of water bodies. While burrowed in the mud, they absorb dissolved oxygen through their skin. Though they remain able to move around, their speed is considerably reduced, leaving them vulnerable to attack by predators such as river otters.

The **wood frog** is the only North American frog that is found north of the Arctic Circle. Wood frogs seek refuge under rocks or logs beneath the soil, often in root channels or burrows made by other animals. As temperatures drop below freezing, this frog's breathing and heartbeat come to a complete stop and it literally freezes solid! As with freeze-tolerant insects, wood frogs produce their own antifreeze (glucose), which allows up to 65% of the water in their bodies to crystallize into ice without causing cell damage. Glucose levels in the central organs of wood frogs have been found at 100 times their original levels! As a result, wood frogs can withstand temperatures as low as -6 °C.

Hey Kids!

There are many different ways that animals spend the cold winter months. Some stash food in their underground burrows before curling up for the winter, waking up periodically to eat. Others remain active all winter - in fall, hiding food in various above ground locations and building super-insulated houses out of plant materials where they can wait out winter nights and storms. Some eat huge quantities of food in the fall, which is stored as fat and used as energy while they are holed up in a den. Still others grow thick fur made of insulating hollow hairs and undergo a change in diet.

If you were to spend the winter outdoors, what would you do? What kind of shelter would you build to keep warm and dry? Where would you build it? What would it be insulated with? How would you get water? What would you eat? Would you cook your food? How would you make a fire?

Get together with a friend and share your ideas. Then head outside and try them out! (Hint: Watch the animals – they have a lot to teach us!)

Let us know what you did. E-mail your discoveries and questions to **tgpphq@escape.ca** or give us a call at 425-3229. We'd love to hear from you!

The Preserve was established to protect and conserve the native species found there. Please do not pick, dig or collect any of the plants or animals.

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Manitoba Tall Grass Prairie Preserve

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Critical
Wildlife Habitat Program