Winter wildlife survival strategies: endure, hide or flee

by Candace Ward

The Kenai Peninsula's six-month long winters begin to wear on its human animals by February each year. Whenever you feel tired of winter, remember you could be spending your winter like some of the hardy wildlife residents of Kenai National Wildlife Refuge. Let's take a closer look how they cope with winter's challenges.

The small wood frog spends its winter frozen solid beneath several inches of soil and leaf litter. If you uncovered a wood frog in the middle of winter, as did arctic explorer Samuel Hearne, it would appear to be dead. He wrote in his journal in 1770, "I have frequently seen wood frogs dug up with the moss when pitching tents in winter frozen hard as ice. By wrapping them in warm skins and exposing them to a slow fire they soon recover life."

Anyone who has experienced frostbite has to wonder how wood frogs manage to completely freeze, thaw, and live. Apparently, instead of water freezing inside their cells, ice crystals form outside the cell membrane which prevents the cells from rupturing. Scientists are fascinated by this amazing survival feat and are working to solve its mystery. They hope to use the wood frog's winter survival strategy to extend the viability of organs such as hearts, kidneys, and livers used in organ transplants.

Have you ever wondered how a tiny bird like the common redpoll manages to survive those minus 40°F nights? Redpolls, the smallest birds to winter in Alaska, use snow cavities to roost at night which insulates them from outside air temperatures by as much as 40°F. Redpolls are flock birds, and they nestle down with flock-mates to increase their warmth by as much as 30%. They also pack away a dinner as they forage for seeds during the day; they store extra food in their crops which they regurgitate at night to provide fuel to survive the cold darkness. Finally, they are able to turn down their internal thermostats. Normally, they maintain a body temperature of 104°F, but on cold nights they can lower their body temperatures to 86°F to conserve energy.

Wolverines are known as hyenas of the North because of their powerful teeth and jaws and excellent ability to hunt and scavenge. They have extraordinary fur that is highly resistant to snowballing and icing. Their fur coat keeps them ice-free and well insulated in all the vagaries of winter weather from ice rain to hoar frost.

During winters with exceptionally deep snow, wolverines have been known to tackle and kill animals as large as caribou and moose. Usually, they let wolf packs do the hunting for them and clean up the remains of caribou and moose kills by consuming the leftovers including bones and hides. Some wolverines have been known to survive winter months solely by eating animal bones. Since bones contain 40% protein, bones are quite nutritious if you can break them up into small enough pieces to swallow and digest. Wolverines are well equipped to this task and crush bones with their powerful teeth and jaws.

Generally, wild animals cope with winter in three ways: they endure it like the wolverine, moose, and caribou; they hide from it like brown bear, wood frog, and marmot; or they flee from it like migratory birds such as common loons, robins, and swallows. During winter many of us are lucky enough to use the migratory bird strategy to escape to warmer climates like Hawaii and Mexico. We may even encounter our summer birds friends such as golden plovers in Hawaii or common loons in Baja California in our southern travels. Fortunately, spring is only two months away and those same birds will head our way to find mates and food in the Land of the Midnight Sun. Winter will become a distant memory to all of us as we revel in the long daylight and warmer temperatures of spring and summer.

An excellent resource book on how wildlife survive winter, which I used as reference material for this article, is *A is for Arctic: Natural Wonders of the Polar World' by Wayne Lynch. This book is available at the bookstore at Refuge Headquarters on Ski Hill Road.*

Candace Ward has worked as park ranger at Kenai National Wildlife Refuge for 15 years specializing in refuge information and education programs. For more information on Kenai National Wildlife Refuge, including past Refuge Notebook columns, check out our website at http://www.fws.gov/refuge/kenai/.