



Winter is a special time in Wisconsin and especially in 2020/2021 on Sand Lake. Because of the milder temperatures, activity levels visible on the lake have increased. We have seen more ice fishing shanties and fisher people than ever before. Thanks to the walking/biking track plowed faithfully by a member, more people have been circumnavigating the lake on the ice. Deer have been doing their regular winter crossing back and forth from the island to the boat landing. Observing the wonders of nature leads us to wonder, what happens to our native creatures once the water is frozen and the air turns frigid?

According to the Wisconsin Department of Natural Resources (DNR) article [Effects of Winter on Wisconsin's Wildlife](https://dnr.wi.gov/topic/wildlifehabitat/documents/winterwildlife.pdf) by Tami Ryan, "Each wildlife species has adapted using a variety or combination of three basic survival strategies: migration, dormancy, and tolerance." <https://dnr.wi.gov/topic/wildlifehabitat/documents/winterwildlife.pdf>. We know that our loons migrate south to the Gulf of Mexico for the winter. A favorite activity among Sand Lake residents is observing the last day a loon is seen on the lake and when they are first spotted after the ice thaws. Most waterfowl migrate south since they need open water. Our bald eagles stay in WI but move to open water areas such as along the Mississippi River. Birds that stay in Wisconsin that you may see, especially if you have bird feeders, include: juncos, sparrows, wrens, chickadees, nuthatches, titmouse's, mourning doves, crows, starlings, blackbirds,

thrushes, all species of woodpeckers, cardinals, finches, pheasants, turkeys and the sharp-shinned and kestrel hawks.

The Washington Post presented an article entitled [How Do Birds Survive Cold Winters](https://www.washingtonpost.com/lifestyle/kidspost/how-do-birds-survive-cold-winters/2020/01/21/3cde4e4e-37b6-11ea-9541-9107303481a4_story.html) and reported that “In fall, birds grow extra feathers — their version of a winter jacket — to prepare for the colder months. When temperatures drop, birds keep warm by shivering, just like you jumping up and down when you get cold outside... Some species, such as Chickadees and Bluebirds, often huddle together to share heat. Have you ever noticed a bird puffing out its feathers on a chilly day? This is another cold-weather adaptation: By trapping air in its feathers, the bird creates a toasty layer of warmth around itself. Some birds use a more extreme strategy to survive. In a process called torpor, birds are actually able to lower their body temperature by as much as 50 degrees... A bird’s normal body temperature is 105 degrees. By bringing body temperature closer to the air temperature, torpor helps birds conserve heat and energy, especially at night. But it’s risky: Because birds can’t move during torpor, they’re more vulnerable to predators.”

[https://www.washingtonpost.com/lifestyle/kidspost/how-do-birds-survive-cold-winters/2020/01/21/3cde4e4e-37b6-11ea-9541-9107303481a4\\_story.html](https://www.washingtonpost.com/lifestyle/kidspost/how-do-birds-survive-cold-winters/2020/01/21/3cde4e4e-37b6-11ea-9541-9107303481a4_story.html)

As for fish, they are cold-blooded, and their metabolisms slow as the water gets colder. The ice near the surface functions as insulation and allows the lower water levels to retain some heat. Fish seek the deeper pools and gather in groups near the bottom. Fish move very little and rest as it gets colder, needing less oxygen and food. ([https://www.union-bulletin.com/local\\_columnists/dry\\_creek/how-do-fish-survive-under-the-ice/article\\_490f039a-ff77-11e6-a423-07ce6c925d30.html](https://www.union-bulletin.com/local_columnists/dry_creek/how-do-fish-survive-under-the-ice/article_490f039a-ff77-11e6-a423-07ce6c925d30.html)).

Amphibians such as frogs, toads, salamanders and newts are also cold-blooded. They spend part of their lives in water and part on land. Most lay their eggs in water and don’t leave the water until they are adults. The larvae live on algae and aquatic insects. Some frogs hibernate at the bottom of the lake on the mud so that their skin can absorb the oxygen in the water. Amphibians such as some toads that live mostly on land will burrow deep down below the frost line and hibernate. Larger turtles, like the common snapping turtle and painted turtle, spend the winter burrowed into mud and sand wherever possible. Other smaller amphibians such as peepers, smaller salamanders, snakes and wood frogs will find cracks in logs or rocks or dig deep into leaf piles and hibernate. Their metabolism

slows down to almost zero as they freeze but then thaw with the spring. (<https://www.poughkeepsiejournal.com/story/tech/science/environment/2015/01/08/amphibians/21437179/>)

How do insects survive the winter? Basically, they can find a warmer place to winter over such as migrating south like the monarch butterfly and the dragonfly. Or, some bugs, like spiders, will find a warm spot in your house. Some bugs like ticks, ladybugs, boxelder or stink bugs go dormant and reappear in warmer weather. Bugs like ants and termites go deep underground into their nests and survive in large colonies. They will huddle together for warmth and survive on food they have stored. Mosquitos tend to lay their eggs and then die off. Mosquito eggs can survive several years before hatching. (<https://www.wil-kil.com/blog/where-do-bugs-go-during-winters-in-wisconsin/>).

Animals tend to fall into most neatly into the migration, dormancy and tolerance or adaptation categories. Bats are among those that migrate south. Bears are the most well known for their dormancy or hibernation. Bears live entirely off fat reserves built up during the months and weeks leading up to entering the den. Raccoons, possums, and foxes will hunker down and stay in their dens until the worst of the weather has passed. "In general, most ground squirrels, including chipmunks, woodchucks, or groundhogs, hibernate for all or most of the winter. Tree squirrels, including gray squirrels, flying squirrels and red squirrels, remain active for the majority of the season. During periods of extreme cold, red squirrels may hole up underground in burrows or tree stumps for the duration of a cold snap, feeding upon caches of spruce or pinecones and other food sources they have stored throughout the year. While chipmunks are usually not seen during the peak of the winter season, they are often active below ground, feeding on stored food and periodically entering torpor. Interestingly, flying squirrels do not store food, hibernate or even fatten up for winter, but are simply adapted to the cold. Their solution during extreme cold snaps is to simply cuddle in groups inside cozy nests." (<https://www.postcrescent.com/story/sports/outdoors/blogs/2014/12/08/wisconsin-wildlife-adapted-survive-winter/20106129/>).

The animals we are most familiar with seeing in winter are those who tolerate the snow and cold. Deer tend to use their fat reserves in winter and are less active. Some animals change their color in winter and grow thicker fur. Weasels and snowshoe rabbits fur is white to help protect them in winter from

predators who are hungrily looking for food to survive. “Food is hard to find in the winter. Some animals, like squirrels, mice and beavers, gather extra food in the fall and store it to eat later. Some, like rabbits and deer, spend winter looking for moss, twigs, bark and leaves to eat.”

(<https://www.sciencemadesimple.com/animals.html>). Predators seen in this area include coyotes, bobcats and wolves.

Sand Lake is a wonderland throughout all four seasons. With more people enjoying its beauty, our responsibility to continue to practice good stewardship of our beautiful resource becomes more important. We will try to explore ways to be good stewards of Sand Lake in future articles. And, if you have suggestions for future articles for the Education Committee, please send them to: [educationcommittee@sandlakewi.com](mailto:educationcommittee@sandlakewi.com).