

'The winter world of wildlife': How nature survives the cold

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When temperatures drop below freezing and snow begins accumulating on the ground, the beautiful winter wonderland is easier seen and appreciated from within our warm homes. For those outside, such as wildlife, winter challenges include finding food, water and adequate shelter. These can be especially difficult when temperatures are in the single digits and layers of snow cover the ground for continuous days. For the animals that live in climates with cold seasons, and for plants that have their roots in the northern regions, adaptation is essential to survive the cold. Some animals are hibernating and waiting for warmer days, and others are in the harsh elements daily looking for enough food to keep warm and stay alive. By educating ourselves on the challenges they encounter, we can better understand how to help wildlife survive until the warmer months arrive.

Before the arrival of the cold and snow, many animals that live in northern regions or that hibernate begin preparing for winter by eating plenty of food to store body fat that will last through the frigid temperatures. Hibernation refers to seasonal physiological adaptations that cause a reduction in metabolic processes (such as stopping eating and or drink-

ing), permitting animals to sleep for months. Hibernating animals are mostly in a state of torpor, which is a state of inactivity that is achieved mainly by the body temperature lowering. Warm-blooded mammals that hibernate include bears, bats and groundhogs. During hibernation, the heartbeat of the groundhog drops from 80 beats per minute to only five beats per minute; its breathing rate decreases from 16 breaths per minute to just two; and its body temperature goes from 98 degrees Fahrenheit (F) to as low as 38 F. The groundhog builds up much body fat in preparation for the three to four months of hibernation. Black bears need to build up a lot of fat reserves as they can hibernate for up to seven months!

Do you ever wonder why you rarely see skunks in the winter? They go into a torpor state where their body temperature drops and they enter into a deep sleep from which they periodically awake. They spend their fall eating and then either dig a burrow or use an abandoned fox or groundhog den in which to sleep. Sometimes, they will burrow with other skunks for extra warmth, called social thermoregulation.

To survive the winter, insects and butterflies need the leaves that pile up in the fall, which is why there are many educational campaigns now that inform of "leav-



ing the leaves" on the ground and not raking, bagging and throwing them out with the trash. Leaf litter helps to provide insulation needed for insects that overwinter in life stages of larvae, pupae, eggs or even as adults. Insects go through a special dormancy in the winter, termed diapause, where body changes occur to survive the cold temperatures. They stop the growing phases of their life cycle and some replace the water in their bodies with glycerol, which is like a type of antifreeze, so that they do not freeze as they overwinter above the frost line.

The praying mantis overwinters as eggs, and the woolly bear caterpillar does so in the larval stage. The nymphs of dragonflies and mayflies live under the ice in ponds and streams. Most butterflies will spend the winter in a dormant phase as caterpillars or pupas and seek sheltered areas under leaves and grass, under logs or in rock piles, or deep in tree bark crevices. The Mourning Cloak Butterfly actually hibernates in tree holes as an adult butterfly and will come out when the spring sun warms them up.

Turtles, frogs and toads need to go below the frost line and into sheltered areas where the temperatures will not go below freezing. They go deep into the mud at the bottom of ponds and streams and decrease their body temperature and heart rate. In the summertime, they breathe with their lungs but in the winter under the ground, they absorb oxygen from

the mud though their skin. Some frogs, toads and salamanders will burrow deep under logs and leaf litter and in rocky crevices. Consider maintaining such reptile and amphibian overwintering habitats, especially if you have a pond or stream on your property.

To brave the winter elements, animals use much metabolic energy to maintain their body temperatures. One animal that is challenged by cold weather is the opossum. They cannot create the same fat reserves as other mammals, and their ears and feet have thin skin that can easily become frostbitten. When temperatures go below 19 degrees Fahrenheit, they are in danger of freezing, so they have to sit in their dens and burn energy to keep warm. Sadly, if there are too many frigid nights when it is too cold for the opossum to go out and forage for food, death can occur. By denning in or near sheds and garages, opossums have a better chance of surviving the cold; there is guidance available on how to create opossum winter shelters to help the little insect-eaters survive the cold months.

Other animals that work hard to survive the winter months include birds, rabbits and deer. The snow can go inches or feet deep and bury the vegetation, nuts and seeds that they forage on. The many birds that rely on airborne or ground-dwelling insects are the species that migrate south for the winter. The birds that stay in the north look for seeds and hiber-

nating insects, as well as berries, nuts and tree buds. Almost half of all birds that overwinter in northern regions depend on the fall harvest of the berries on shrubs and weed and tree seeds.

This is a great reason not to "dead head" the garden flowers after the growing season, and instead let the flower heads remain on their stalks to provide winter food. Gardening practices for years advocated cutting all the flowers down to the ground in the fall and clearing out flower heads and stems, but by doing so a major food source for birds is removed – and stalks and stems that are taken away can provide winter shelter for insects. Leave the garden plants for the animals, and consider leaving some weeds in sections of the yard to provide nutritious food for wildlife. Goldenrod, ragweed, mullein and evening primrose are just some of the weeds that birds seek for their seeds. Finches and juncos, along with redpolls and bobwhites, favor the goldenrod and ragweed seeds. The fact that goldenrod and ragweed can grow several feet high helps to keep the seeds accessible above the snow.

Winter is a good time to observe bird behavior, as you will see species such as cardinals gathering in flocks during the colder months and then dispersing come spring. With leaves off the trees, it is easier to observe the habits of birds. Woodpeckers can be seen looking for insects inside tree branches and trunks, and nuthatches can be seen going up and down trees storing seeds or cracking them up in the bark crevices. The trees themselves are also active in winter, with buds preparing for spring by sensing the changing ratios of light and dark and responding to the chemicals released from the timed breakdown of their cells.

As the months of the winter season alternate from cold to frigid, and the snow fluctuates from dustings to blizzards, learning how plant and animal life adapts to stay alive will help us appreciate their strength and perseverance and the coming of spring that much more.

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Niagara Falls leads the way: Another record year for state parks in 2021

Gov. Kathy Hochul on Tuesday announced New York's state parks, historic sites, campgrounds and trails welcomed a record-setting 78.4 million visits in 2021, continuing the robust level of visitation seen since the onset of the COVID-19 pandemic.

"From Niagara Falls to Montauk Point, our state parks and historic sites are a treasure that every New Yorker should be able to enjoy," Hochul said. "During the pandemic, parks and public spaces have become more important than ever – providing New Yorkers with safe and enjoyable outdoor spaces for gatherings and recreation. New York was proud to welcome a record-setting number of visitors to our state parks last year, and we look forward to modernizing our parks system as we approach its historic 100th anniversary in 2024."

Total visits statewide increased in 2021 by more than 427,000, driven by a dramatic rebound of

more than 3 million visitors at Niagara Falls State Park compared to 2020, when international border tourism was curtailed due to COVID-19 protocols. More than 9 million visitors went to Niagara Falls State Park last year.

State park attendance has been steadily climbing, rising 41% since 2008. In addition to the total attendance, state parks also set a new record for 2021 overnight visitation at campgrounds, with campsite, cabins and cottages booked for more than 787,000 nights.

State Parks Commissioner Erik Kulleseid said, "I am grateful that even more people decided they wanted to go to our state parks and historic sites in 2021, even as other recreation options were becoming more available to them. New York has invested significantly in recent years to make its facilities world-class, and even more improvements are coming."

Hochul's proposed 2022-23 budget includes \$200 million in capital

funding for State Parks, an 80% increase from the current level, to enhance the "NY Parks 100" capital initiative.

Empire State Development Vice President and Executive Director of Tourism Ross D. Levi said, "With more travelers increasingly looking for new ways to experience the outdoors, our world-class state parks system offers visitors unparalleled opportunities. I LOVE NY proudly encourages travelers from around the state, nation and world to include our parks, trails, historic sites and campgrounds as part of their next getaway and come be a part of all."

Major parks projects completed since the onset of the pandemic included the opening of a first-of-its-kind Autism Nature Trail at Letchworth State Park, and expansion of Niagara Falls State Park to improve access to the Niagara Gorge by removing a section of the former Robert Moses Parkway.

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