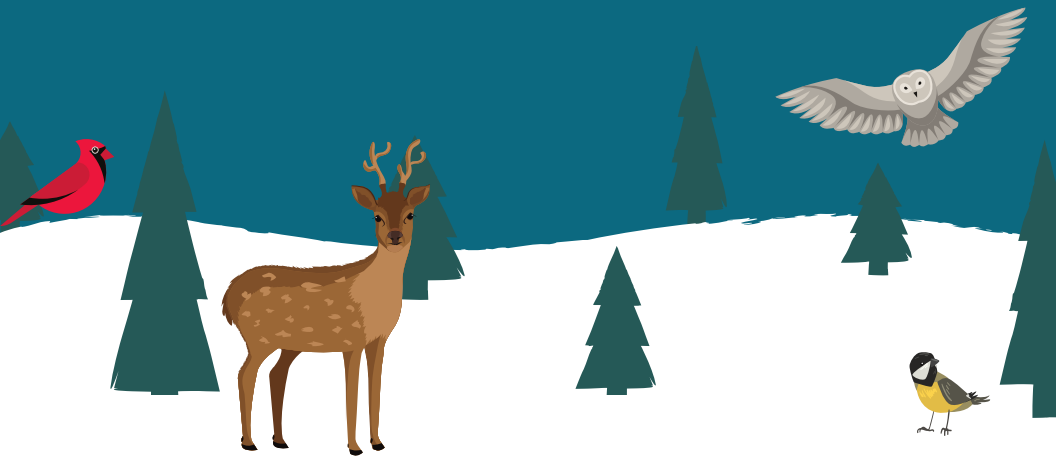
MINI GUIDE TO WINTER NATURE

ACTIVITIES TO LEARN ABOUT NATURE IN THE WINTER

Childhood by Nature



If you live in a climate that experiences cold, wintery weather, this season can look quiet and empty of nature. Trees are bare. No insects are buzzing. Fewer birds are tweeting. The landscape is frozen. Where is the wildlife?

ACTIVITY TIME!

Know Your Winterscape. Choose a spot outside that attracts a lot of wildlife in the warm months and draw what you see in the winter. Note any behaviors you see!

But winter is actually a fascinating season to learn about nature's amazing adaptations and survival strategies. You just have to know where to look!

So put on your nature detective hat as a we learn about how life goes on in winter.
Let's head outside & explore winter's natural landscape together!

Snow.

It's probably the first thing you think of when you think of winter. Cold and wet. What could possibly grow or live with all of this snow?

It can be difficult for animals to live in places that receive large amounts of snow because lower temperatures make it hard for animals to stay warm and deep snow can also be difficult to move around in.

But some animals have adapted to co-exist with the cold. Deer, elk, bison, and other grazing animals use their hooves and muzzles to clear snow away from plants they need to eat to survive.

Have you noticed that many mammals that winter in cold weather have white fur? The white fur of these mammals, like polar bear or snowshoe hare, is hollow and traps warm air—an added cold weather bonus!

Some animals, like the snowshoe hare, have adapted to life under snow cover by developing ways to travel on top of deep snow.

Snowshoe hares have large hind feet, and they can spread their toes to act like snowshoes, which helps them walk on the surface of deep snow without falling through.

The Arctic fox grows thick fur all the way down to the bottoms of its paws. It has a stocky body, short legs, and small ears, all of which conserve body heat.

It's not only arctic animals with special adaptations for cold weather. Mammals such as foxes, squirrels, badgers and even dogs and cats all grow a thicker coat as the days become shorter, which they shed in the spring. The extra fur helps them to keep their body temperature constant during very cold weather.

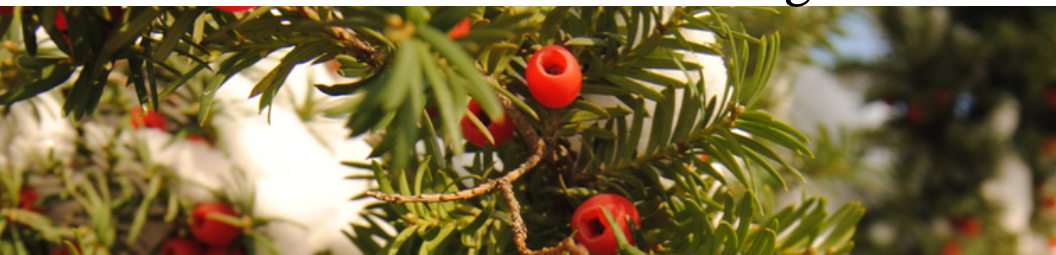
Even though snow is cold, it forms an important insulating blanket that protects plants and animals from cold temperatures and strong winds. To understand where many critters are, we have to think beneath the surface!

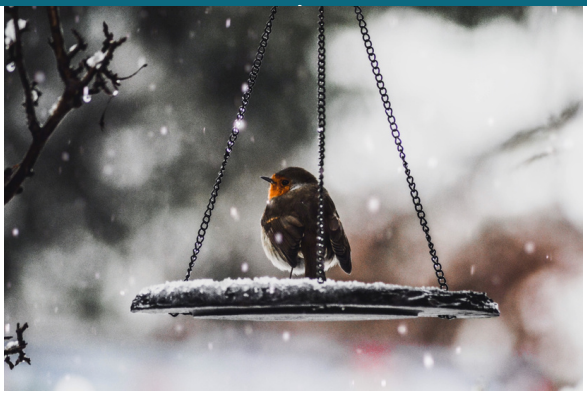
Of course one of the most well known adaptation that mammals have for dealing with cold weather is hibernation. When animals hibernate, their bodily functions including their breathing, heart rate, body temperature and metabolism all slow down.

Only a few animals such as little brown bats, groundhogs, ground squirrels, rodents, bears, chipmunks, skunks, raccoons and opossums actually hibernate.

Smaller mammals lose heat more quickly than larger ones. In order to keep warm, smaller mammals will also burn up their fat quickly. To preserve this important fat layer, smaller mammals like mice and voles will settle into underground nests during the winter, saving their energy and fat, by being inactive.

Of course many birds will migrate to warmer wintering grounds when the days get shorter. But there are still many birds that winter in the same habitat year-round. For these birds, evergreen trees and shrubs become crucial winter habitats, providing shelter from the cold and elements as well as a place for birds to hide. Many conifers retain their berries into the winter so these trees also provide an essential food source to wintering birds.



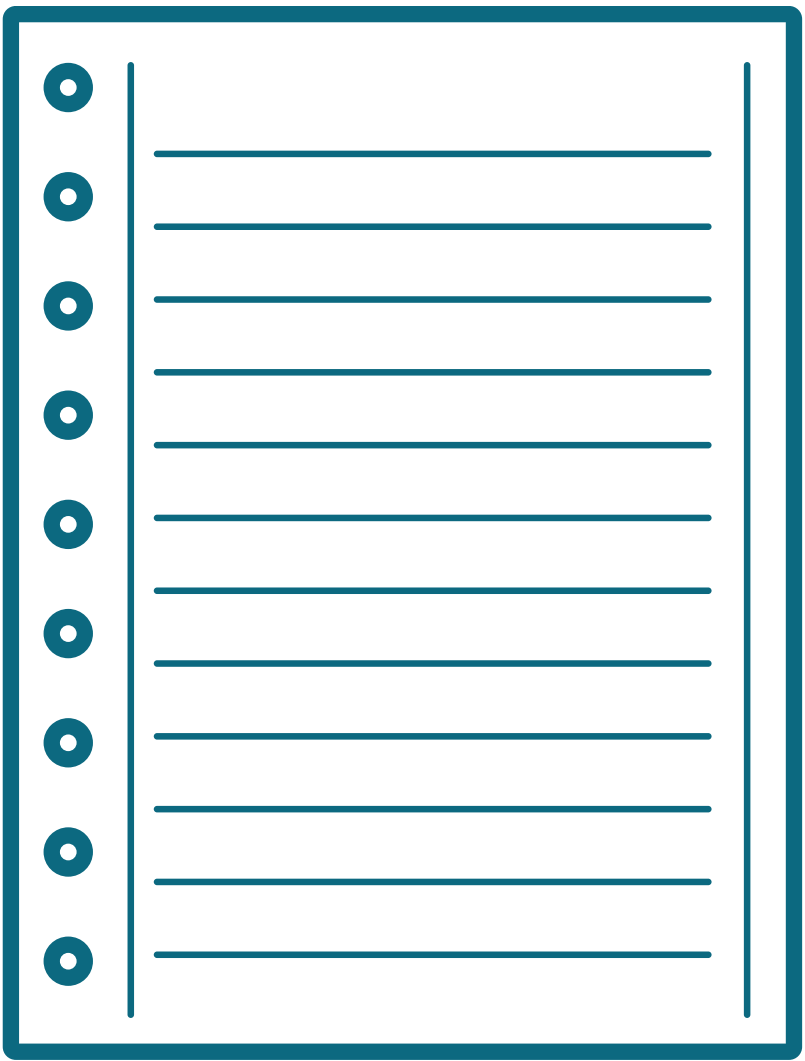


Riding out the winter months provides additional benefits to non-migratory birds as well. There is much less competition around for food and other resources. A plus in the wild for sure!

To keep warm, birds can't put on a coat and hat (as cute as that would be) but they can activate their own “coat” by fluffing up their feathers. This expands space to trap air and heat. And of course the many layers of different types of feathers are perfect for keeping birds warm inside and dry on the outside.

ACTIVITY TIME!

Winter Bird ID. Head outside with a field guide to local birds, this sheet and a pencil. Bring binoculars if you have them too. Stay stationed about 10 feet away from the feeder as you learn your wintering birds. Write their names out here.



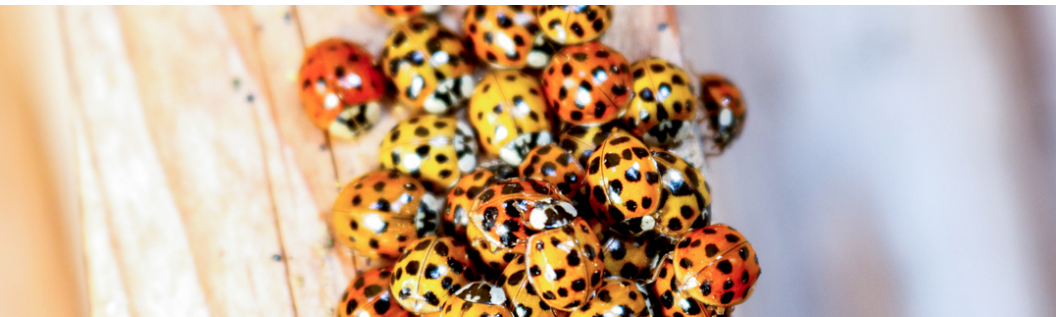
Low temperatures make it difficult for cold-blooded creatures such as invertebrates, fish, amphibians and reptiles to remain active in winter. These creatures have specialized adaptations for the cold weather.

During cold periods, frogs, snakes, and other amphibians and reptiles slow their body processes almost to a stop, using up their energy very slowly.

A frozen pond may look dead but we're just seeing the top layer. Under the frozen water, the water remains liquid. In that layer, oxygen is trapped below the ice, which gives fish what they need to survive.

Some fish like cod have a substance in their blood to lower their metabolic rate and their freezing point so they can survive in the colder water.

Some species of invertebrates spend the winter somewhere secluded, perhaps under a log, stone or in a hole, and stay there throughout the cold months. Special chemicals are released into their body fluids to prevent them from freezing, in the way that antifreeze works in the radiator of a car. Many caterpillars, some butterflies, slugs, snails, queen wasps and bumblebees spend the winter in this way.



How a tree survives winter depends on the type of tree it is. Evergreen trees, such as many conifers, keep their needles all year long. These trees stay “evergreen” because the thick waxy coating on their needles help them to conserve water during winter.

Evergreen trees are essential for winter survival of residential species. Stands of coniferous trees provide shelter from the elements for many species, as well as a place to rest and eat. In fact, evergreen forests are a winter “oasis” for wildlife for many critters throughout the winter, helping species such as the white-tailed deer survive and providing roosting space for birds such as owls.

The evergreen's needles, twigs, bark, and cones provide food for wildlife such as chipmunks and squirrels while deer and black bears will eat tree bark. Some species of woodpeckers feast on larvae within the soft bark of pine trees.

Deciduous trees (including maple, oak, and birch) shed their leaves in the autumn and settle into dormancy. Dormancy is like hibernation in that everything within the plant slows down — metabolism, energy consumption, growth and more.

The first part of dormancy is when trees lose their leaves. They don't make food in the winter, so they have no use for masses of leaves that would require energy to maintain.

When it's time for trees to lose their leaves, a chemical called ABA (Abscisic acid) is produced in terminal buds (the part at the tip of the stem that connects to the leaf). The terminal bud is where the leaf breaks off when it falls, so when ABA gathers there, it signals the leaf to break off.

ACTIVITY TIME!

Head outside for a Adaptation Scavenger Hunt. What winter adaptations can you spot that help an organism survive the cold months? Write them out here.

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