

## Trees in the Winter

### Introduction: The Fir - Our Christmas Tree

The fir is tall, strong, straight, reliable, simple, patient, tolerant, generous, and humble. It's no wonder then that we choose it to play a role in the most lively times of our year: its presence in our homes at Christmas is a promise of joy.

We know it under a variety of names--Canada balsam, balsam fir, or Eastern fir--and it ranges from the foothills of the Rockies to Newfoundland. Fairly young firs have many resin canals in their bark containing what is called fir gum.

Fir gum has been harvested for centuries and was exported to Europe where, known as baume du Canada (balsam of fir), it had many uses. When applied to a wound, it promotes rapid (sometimes too rapid) healing. It was also used as a cement for eyeglasses.

The main use of fir today, however, is as lumber and for pulp. But at midnight on December 25 each year, this modest tree lives an hour of glory.

(Adapted from André Croteau's *Guide de la forêt québécoise, saison par saison*, Éditions de l'Homme.)

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## Tree Buds in the Winter

When do you think that buds appear on trees? In the spring? Or maybe at the end of winter? Well, trees actually form their buds during the summer, usually in August! Since trees are dormant during the winter, they don't have the energy to grow structures that are that small and complex! Buds aren't very apparent in the fall and throughout the entire winter. In the spring, however, they swell and are ready to open.



## Tree Leaves in the Winter

### Broad-leaved Trees

All hardwoods, or broad-leaved trees, lose their leaves in the winter. Winter seems, however, to catch some of them--such as young [beeches](#) and [oaks](#)--unawares. Their shriveled, brown leaves make them easy to spot in the winter. Maybe the surrounding trees provide better protection for them.

After falling on the ground, leaves gradually rot or decompose. In a number of years, this puts nutrients into the soil that the tree can use to produce new leaves.

Adverse weather conditions, such as ice or sudden temperature changes, and animals that feed on trees can affect the development of new leaves.

### Conifers

[Conifer](#) leaves are called needles or scales. [Fir](#) and [spruce](#) trees have needles. [Cedar](#) trees have scales.

What is the only conifer that loses its needles in the winter? It's the tamarack.

By retaining their needles or scales throughout the winter, conifers provide essential refuge and food sources to wildlife. Unlike broad-leaved trees, conifers can bear snow on their branches, which reduces the amount of snow on the ground. Since conifer forests are denser than their hardwood counterparts, they greatly reduce the speed of wintery winds.

Conifer forests are the only places where white-tail deer can move around when a lot of snow has fallen. They have to feed, however, in nearby young stands dominated by broad-leaved trees. Firs are also delicious winter treats for moose.

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## Tree Flowers in the Winter



When present, flowers on trees spend the winter as buds. Trees don't flower until they are mature enough.

Flowers are important. If there weren't any flowers, there wouldn't be any seeds. Without seeds, there wouldn't be any new trees.

During the winter, red squirrels and hares can cause considerable damage to trees: squirrels tear off the pine cones; hares eat the buds and bark.

If you want to store tree seeds over the winter, keep them cold. Otherwise, they may not germinate the following spring. Examine them carefully! Some tiny insects sleep the winter away in seeds. Some seeds, such as sugar maple keys, won't last much more than a year. Seeds from other species, such as the pin cherry, can remain vital in the soil for 75 to 150 years.

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## Fruit in the Winter

All trees have fruit, if not seeds. You should be able to come up with a number of fruit and their trees: the apple and the apple tree; the pear and the pear tree; and the orange and the orange tree, to name just a few. The seeds are found inside the fruit. If you plant an apple seed, an apple tree will grow. If you plant an apple from which the seeds have been removed, nothing will grow. The important part is the seed. The seed contains all the genetic information needed to grow a tree.

The fruit develops once the flower has been fertilized by pollen. Each species of tree has its own kind of fruit, which ripens at different times of the year.

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## Roots, Trunk, and Branches in the Winter

### What Do Roots Do?



Roots have many functions. You already know that roots absorb water from the soil. At the same time, they absorb minerals that the tree uses to grow tissues.

Roots have another very important function: they serve to anchor the tree in the soil so that the first windstorm doesn't blow it over!

## Roots Are Sponges

Well, to be precise, the roots don't take up water and minerals from the soil. That's done by what we call root hairs, which grow on the roots. They act a little like sponges.

Roots, which are woody like the tree's trunk and branches, transport the water and mineral salts to the tree's trunk and cells.

## Branches

A tree grows both in height and girth each year. The branches stretch skyward to get as much light as possible.

The trunk and branches grow to support an increasing number of leaves and branches.

Most of this growth occurs in the spring, well before summer officially arrives, because there is an abundance of water in the soil.

## Wood Cells and Annual Rings

In late summer, the tree stops producing wood cells. It would rather put its energy into storing reserves and producing buds.

Early wood and late wood differ in color, which allows us to distinguish annual rings. Each year, therefore, the tree produces one ring. The age of a tree can be determined by counting its annual rings.

## Bark

Bark's main purpose is to protect the tree. It's a little bit like our skin. The bark protects the tree against disease, insects, fire, drought, injury, and animals.

