

## "Snap Shot" of a Bog in Aitkin County

Whether driving on Hwy 210 or Hwy 169, the bogs are not far from either side of the road. 14 percent of Minnesota is a bog and 30 percent of Aitkin County is a bog. Glacial Lake Aitkin, a lake that was twenty miles long and five miles wide, covered this area about 10,000 years ago. The lake slowly transformed into bog bringing with it a biodiversity of bog plants.

There are two main types of bog trees, the black spruce and the tamarack. Both trees are easily identifiable from your car. Black spruce, *Picea Mariana*, trees stay green all year long. They also have a clump of green needled branches on the top of the tree and then bare branches for a portion and then back to green needled branches. Once the lower branches have become covered in other bog vegetation, such as sphagnum moss, new seedlings will sprout. The Tamarack, *Larix Laricina*, also called the Eastern Larch, is the only deciduous conifer in Minnesota. Deciduous conifers lose all of their needles at one time, unlike most other conifers, such as the Red and White Pine, that lose their needles a few at a time.

As you walk out into the bog, you start to notice a variety of bog plants. You may see what looks like cotton balls on top of a piece of grass; this is cotton grass. Also take notice of a small shrub having green leaves and turning to a reddish color in winter. It dominates most northern bogs. It may look familiar to those of you who get flowers because the "Leatherleaf" plant is a staple for floral arrangements. Pick a leaf and rub it between your fingers; it won't take long to realize why it's called Leatherleaf. It has a leathery leaf because of the harsh environment it calls home. The leaves mimic desert plant adaptations, making it much harder for the sun to rob moisture from the plant. Leatherleaf is one of the first plants to launch toward the eye of the bog, helping in the successional transformation of a lake to a bog.

A similar looking plant to the Leatherleaf is Labrador Tea. A distinctive characteristic of Labrador tea is the fuzzy underside of the leaves. Labrador Tea has an orange/rusty color fuzz when the leaf is older and a white color fuzz as a younger leaf. To help prevent moisture loss, the leaves are thick and the sides of the leaves roll up. Colonists made a tea from the leaves during the Revolutionary War. Grab a leaf, just one, and chew on it. Personally I think it tastes like green apples but not too many people agree with me.

To make a bog a bog, sphagnum moss has to be present. When you first walk out into the bog it feels spongy or waterbed like, that's the sphagnum moss. There are approximately twenty different species of sphagnum moss in the Great Lakes region. Sphagnum moss fills in all the spaces between the Leatherleaf roots and advances towards the eye of the bog, helping in the succession to a bog. The moss can hold twenty-five to one hundred times its weight in water, giving it that spongy feeling. Many Native American tribes in the Great Lakes used sphagnum moss in diapers for their babies. Sphagnum moss was also used during World War I as a wound dressing. It absorbs liquid faster, in greater amounts, and held more than cotton. Because of the acidic nature of the bog and its plants, sphagnum moss also helped fight against infection.

Tangled within the cranberry vines is one of the carnivorous plants of northern bogs. The pitcher plant eats insects to gain nutrients in an environment with no soil and floats on water. This makes it an insectivore. A fragrance and a design that mimics veins on meat, the insects are attracted and land on the lip of the plant. On that lip are tiny hairs that point down, forcing

the insect to move into the plant. The insect moves into a section where cells stick to its feet making it unable to climb back out of the plant. The plant releases a chemical that breaks surface tension and the insect slowly sinks to the bottom of the pitcher, which is filled with water. The pitcher plant then releases digestive enzymes to devour the insides of the insect, leaving the exoskeletons (the crunchy part) at the bottom.

A bog is a place with little decomposition because of the lack of oxygen and bacteria. Bog plants grow on top of each other and slowly sink to the bottom, filling in the lake and creating peat. Peat has numerous uses, most involving gardening in some way. All bog plants have adapted to live in a place with little nutrients because of the lack of decomposition. Bogs are unique ecosystems that are worth a closer look. From Lady Slippers to cranberries, there is always something new to see; so head on out and enjoy nature on a "Bog Trek" this coming Spring!

Attached Photos:



Tamarack.jpg



Labrador tea.jpg



Leatherleaf.jpg



Sphagnum moss.jpg