

BRADFORD BOG TRAIL GUIDE

East Washington Road
Bradford, NH



Goldthread

Snowberry



Small Cranberry

Published by
**The Bradford
Conservation
Commission**

THE BRADFORD BOG



Sphagnum Moss

In 1971, the Town of Bradford acquired the Bradford Bog as a gift from the New England Wild Flower Society. The Wild Flower Society purchased it in 1961 as a sanctuary for the Atlantic white cedar, *Chamaecyparis thyoides*, and the unique bog flora.

Many bogs began as glacial ponds formed when the great ice mass retreated about 10,000 years ago. Remaining ice chunks became wholly or partially buried in glacial outwash sediment and slowly melted, leaving behind a pit that filled with water to become a pond or lake. Due to its large size (over 300 acres), it's likely the Bradford Bog's origin was more complicated, perhaps involving an ice or glacial debris dam at its southern end that held water in its basin for hundreds of years at the end of the ice age.

The glacial pond or lake, surrounded by granite and glacial deposits of rock and gravel, provided few nutrients for plant growth. As the climate warmed only those plants that could survive in a limited environment colonized the area. Rainwater is virtually the only source of fresh water here.

One of the first pioneer plants, sphagnum moss, grew from the water's edge to gradually form a fragile mat toward the bog center. As the sphagnum crept toward the bog center oxygen was prevented from entering the underlying water. With this lack of oxygen there was little decomposition and layers of dead sphagnum began to accumulate and created an environment of highly acidic water with low nutrient content. Therefore, only acid-loving and specialized plants could survive.

As the mat became more stable, some of the specialized plants such as pitcher plant and sundew assumed a position on the sphagnum. Later, shrubs, particularly the acid-loving members of the heath family, established themselves on the mat. These

shrubs altered the area making it drier, more stable, and suitable for small trees. Black spruce and larch were the first trees to appear.

The Atlantic white cedar swamp is an interesting feature associated with this bog since these trees are more commonly found in coastal swamps and bogs from southern Maine to Florida. Here, the cedars represent one of the most northwestern stands in its range. The wood of these trees is very light, even lighter than white pine, and very durable when in contact with the soil. In days past the trees were cut for fence posts and railroad material. The cedar swamp was last timbered in 1957 and 1958, mostly for fence posts. Usually the trees grow in areas of year-round standing water but any extensive flooding, either by human or beaver endeavors, could damage trees. Hopefully the trees will be protected here in the Bradford Bog.

Much has changed here since the 1980s when this guide was first published. What was once a dense tunnel of cedar trees is maturing to a more open forest. The bog mat supports more trees: black spruce and larch have been joined by balsam fir and even maples and birch. Blueberries and rhodora are moving in and brightening the bog with their flowers and berries. Pitcher plants are being overshadowed and cotton grass is becoming rare as well. Sundew, a tiny carnivorous plant, is now hard to find.

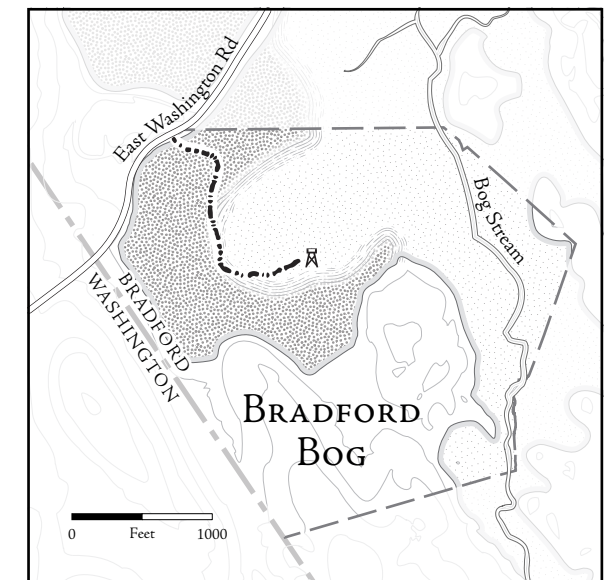
A walk through the bog will reveal an area rich in wildlife. In the summer white-throated sparrows and warblers frequent the spruce and cedar trees. Often signs of bobcat are noticeable along the trail as well as tracks of deer, moose, raccoon, fox, snowshoe hare, coyote, and many other animals.



Bunchberry



PLEASE
LEAVE ALL PLANTS
AND ANIMALS
WHERE YOU FIND
THEM!



Further information on bogs:

Jorgensen, N., Guide to New England Landscape
1971 Pequot Press

Johnson, C., Bogs of the Northeast
1985 University Press of New England

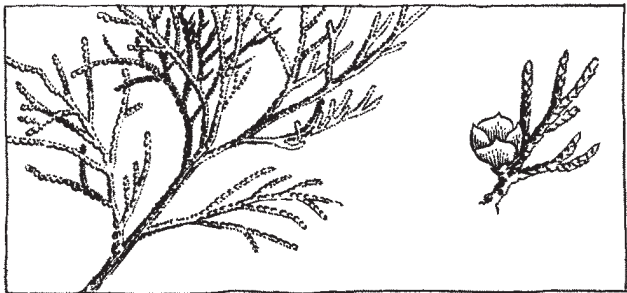
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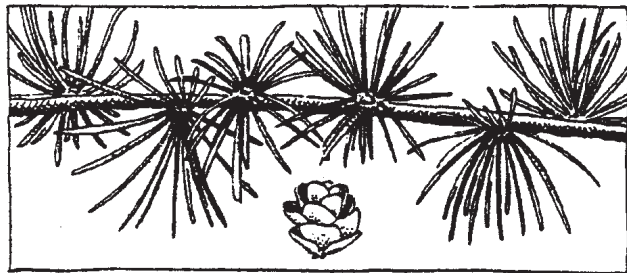
Production - Bill Duffy

Selected Flora of the Bradford Bog



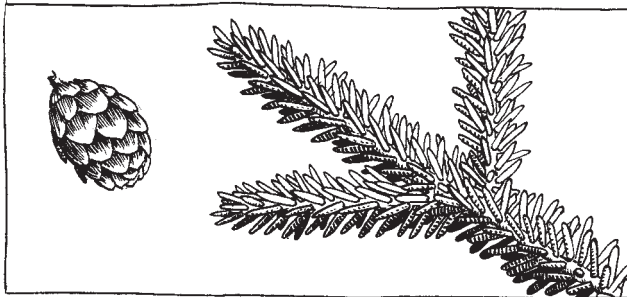
Atlantic White Cedar
(*Chamaecyparis thyoides*)

The flattened scale-like leaves are dull bluish-green and this tree is easily found in the bog area. Young trees are abundant in this northwesterly ranging stand. It is usually found along the coast from Southern Maine to Florida. The bark is brown and ridged. Its cones are small, ¼ inch. The wood is pale, light and fragrant.



Larch, Tamarack, Hackmatack
(*Larix laricina*)

The small soft, linear needles are grouped in small clusters on the twigs. It is the only northeastern conifer that turns yellow and drops all its needles in the fall. Its wood has been used for telephone poles and fence posts. It grows throughout this bog area.



Black Spruce
(*Picea mariana*)

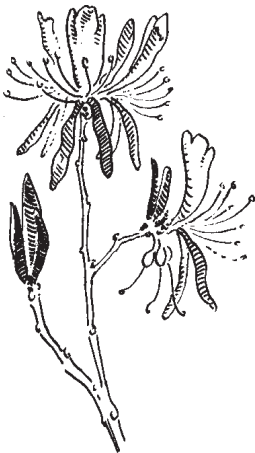
This is a medium sized tree, evergreen with blunt-tipped blue-green needles. Its bark is scaly and gray. The cones remain on the tree for years. Here, the stand on the fringe of the bog has been damaged by the native dwarf mistletoe, see “witch’s broom”.



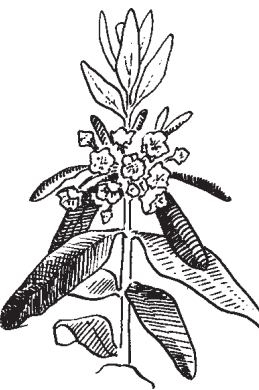
Witch’s Brooms
This refers to an area on a branch where growth has gone haywire. On black spruce it is caused by dwarf mistletoe, *Aceuthobium pusillum*, an inconspicuous parasitic shrub with tiny, opposite, scale-like leaves. Blueberry also sports “witch’s brooms” but these are caused by a rust fungus, *Pucciniastrum goeppertianum*, that spends part of its life on balsam fir.

Heath Family (*Ericaceae*)
This family includes many of the bog plants. Most have thick leathery leaves with numerous hairs on the lower surface. These are adaptations to reduce water loss through the leaves, since the bog water is so acidic and plants must rely on rain water. Typical flowers have five petals that are united into a tube at the base. They have five to ten stamens. This family includes rhododendrons, azaleas, and the following five species that are found in this bog.

Rhodora
(*Rhododendron canadense*)
A deciduous shrub, 1-3 feet with elliptic leaves, margins slightly rolled, dull green above and paler beneath with a few rusty hairs along the midrib. The flowers expand before the leaves, April to May. One of the most brilliantly flowered shrubs found along the bog trail and on the mat. In winter, identified by the large buds.



Leatherleaf
(*Chamadaphne calyculata*)
An evergreen shrub that grows to 1-3 feet. Its leaves are alternately arranged, untoothed, leathery and scruffy, brown beneath. Its flowers form long, one-sided clusters on the branches, March-July. Found out on the bog mat.

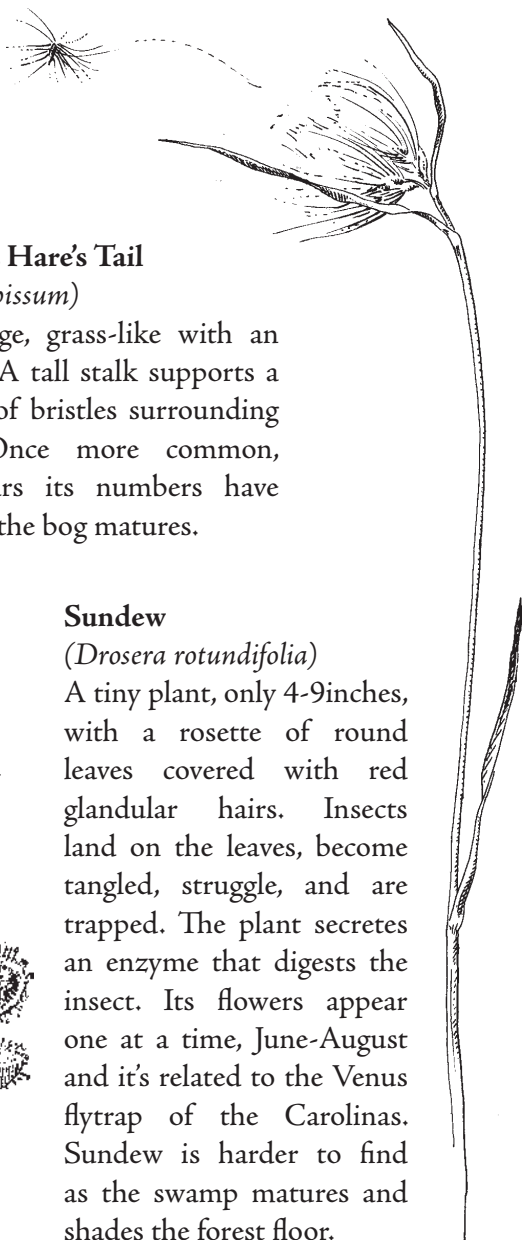


Sheep Laurel, Lambkill, Sheepkill
(*Kalmia angustifolia*)
Another evergreen shrub, 1-3 feet. Its leaves are opposite or in threes, elliptic, leathery and smooth above. Flowers are pink, April to August, in clusters on the middle of the branches. As its common names imply, it is poisonous to livestock. Its roots also have a somewhat toxic effect on conifer seedlings.

Bog Rosemary
(*Andromeda glaucophylla*)
A low evergreen shrub, 4 inch to 2 feet. Its leaves are alternately arranged, very narrow, with rolled margins. They are dark blue-green above and white with minute hairs beneath. Found here on the bog loop trail.



High Bush Blueberry
(*Vaccinium corymbosum*)
A familiar bush with small, leathery leaves in summer and obvious blue berries by late summer, this heath has become more numerous in the bog in the last twenty years.



Cotton Grass, Hare’s Tail
(*Eriophorum spissum*)
This is a sedge, grass-like with an angular stem. A tall stalk supports a cottony head of bristles surrounding the seeds. Once more common, in recent years its numbers have diminished as the bog matures.

Sundew
(*Drosera rotundifolia*)
A tiny plant, only 4-9inches, with a rosette of round leaves covered with red glandular hairs. Insects land on the leaves, become tangled, struggle, and are trapped. The plant secretes an enzyme that digests the insect. Its flowers appear one at a time, June-August and it’s related to the Venus flytrap of the Carolinas. Sundew is harder to find as the swamp matures and shades the forest floor.

Pitcher Plant
(*Sarracenia purpurea*)
These vase-shaped leaves form a low-lying cluster in sphagnum moss. It attracts insects to a liquid filled cavity within the tubular leaves. Downward pointing hairs prevent the insect from escaping and it then falls into the liquid, drowns and is digested - providing the plants with needed nutrients. It has tall persisting flower parts. *Wyeomia smithii*, a mosquito, breeds in the cavity unaffected. (This mosquito does not bite humans.) This plant is becoming less common as shade increases on the bog mat. It still lingers along the boardwalk so watch your step!

