Philbrick-Cricenti Bog

A Quaking Step Back in Time
A short drive north on picturesque I-89 will bring the environmentally curious to exit 12. A few paces from old Route 11 in New London is a gravel pull-off, a somewhat hidden brown sign with yellow lettering, and a path that leads to one of the most unusual habitats in the Northeast.

By Nicola Whitley
Philbrick-Cricenti Bog is what is known as a kettle hole or quaking bog, so named because the ground is not firm and often will not hold the weight of a person or animal. It is a beautiful habitat in which the plants become shorter and the ground wetter as you move toward the center of the former pond.

A peat bog is one of the four main types of wetlands and is formed when peat, which consists of deposits of dead plant materials, accumulates over time. A kettle hole bog is the result of retreating glaciers leaving behind a pond in a depression with no water flowing in or out. Approximately 18,000 years ago, when New Hampshire was covered by a continental ice sheet, a large chunk of ice was left behind in a depression and became a pond as the ice slowly melted. Over thousands of years, plants, mainly sphagnum moss, grew, died, and filled in the bog starting at the edges.

Today, no open water is visible, though there is still an open area without trees and only a thin floating layer of the moss and sedge mat present. A boardwalk allows visitors to see the bog close up from one of four loops. For the protection of this habitat and the wildlife that live there, and for everyone’s safety, visitors must not step off the boardwalk. In some places the water is still 20 feet deep below the mat. Once surrounded by farmland, horses, cows, and other domesticated animals have been lost to the deceptive nature of the bog’s mat through the years.

The upland border of the bog contains black spruce, stunted gray birch, balsam fir trees, and Tamarack, also called Eastern larch, one of the few conifers that sheds its needles in the fall. The trees are short because the water in the bog lacks nutrients and is low in pH (acidic). Vegetation that grows here must be tolerant of wet and acidic conditions. This environment also slows decay, unlike in swamps, so there is not much of a scent present in the spring. Within this ring of vegetation you will also find flora such as bluebead lily, bunchberry, chokeberry, and cattails.

The next zone of vegetation is similar to tundra that occurs much farther north or at higher elevations. It is visible on the Tundra Garden Loop of the boardwalk, and here you will also find the bog rosemary plant, white-tufted cottongrass, bog cranberries, sundews, and beakrush.

Closer in to the center of the bog, along the Quaking Loop, the peat mat is quite thin. As recently as 150 years ago there was open water here where people fished. Now, two primary natural vegetation types intermix in this open section of the peatland: the large cranberry-short sedge moss lawn and the small cranberry sphagnum moss carpet. Scattered amongst

### The Process of Bog Formation

The formation of a kettle hole or quaking bog begins with a chunk of ice trapped in a depression that melts into a pond over time. The pond fills in gradually over thousands of years.

#### Stage 1: Sphagnum moss grows beginning at the edges of the water, and as it dies it causes peat layers to form at the bottom of the pond.

#### Stage 2: Over time, the sphagnum fills in the pond from the outside in, creating unstable mats of vegetation at the perimeter.

#### Stage 3: Eventually the sphagnum and other plants cover the water completely, as at the Philbrick-Cricenti Bog, leaving a capsule of water still in the center, like the filling in a jelly donut.
this pond cover are slight hollows that have filled in with liverwort, also called horned bladderwort. These are turf-like mats that turn black and look like mud from afar.

Due to the lack of nutrients, pitcher plants and sundews thrive in the bog’s mat. These carnivorous plants feed on insects such as ants and flies. The pitcher plant traps prey in a cavity filled with liquid called a pitfall trap. The sides are slippery and prevent an insect from climbing out. The liquid then helps the plant digest the insect. Sundews are part of the Drosera family which is one of the largest groups of carnivorous plants with over 190 species. The leaves of the sundew are covered with spikes and a sticky substance which holds the insect once it lands then breaks it down for absorption.

Throughout the bog, stunted trees (1) cast an eerie yet peaceful sense of pristine wilderness.

Philbrick-Cricenti Bog features two species of carnivorous plant – the sundew (2) and the pitcher plant (3).

Bog cranberries (4) dot the ground vegetation along much of the boardwalk.

Bog rosemary (5, 6) lies in carpets of viridian hue, and tufts of cottongrass (7) stipple the open areas of the property.
The features of the bog change each season. In the winter it freezes and looks like just another field. In spring, the bog starts to come alive with the red of the cranberry moss, the yellow of marsh marigolds, and the purple hue of rhodora accenting the vibrant green of the conifers. In summer you can see sheep laurel spread their pink blooms far and wide, cinnamon fern grow tall and green, and the white calla lily growing close to the ground. In the fall, winterberry holly turns bright red and attracts birds feeding for the winter.

Many species of birds call the bog home, including the chickadee, warblers including the magnolia warbler, robins, crows, white-throated sparrow, and the eastern towhee, which is a species of greatest concern in New Hampshire because their numbers are in strong decline.

According to the University of New Hampshire’s UNH Magazine, there were once six kettle hole bogs known to exist in southern New Hampshire. Spruce Hole bog still exists in Durham. In the 1970s, the Durham Conservation Commission became owners of this bog, and in 2009 it became the Spruce Hole Bog National Natural Landmark. In Amherst, New Hampshire, Audubon maintains Ponemah Bog, which too features a boardwalk trail on which to experience the waterbody. There is also Heath Pond Bog Natural Area managed by the New Hampshire Department of Natural and Cultural Resources located in Ossipee and Effingham, New Hampshire.

You can read more about this unique environment in the New Hampshire Fish and Game Department’s Wildlife Action Plan at wildnh.com/habitat/types.html. Protection of the Philbrick-Cricenti Bog is also funded through the NH Conservation License (Moose) Plate Program. To learn more, visit www.nhdfl.org/Natural-Heritage/Visiting-NH-s-Biodiversity.

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As you meander through the open areas along the boardwalk, spindly black spruce pierce the clear blue sky (1).

A host of bird species can be heard and seen as you walk through the bog, including eastern towhee (2), white-throated sparrow (3), and magnolia warbler (4).

In spring, flowers such as marsh marigold (5) and rhodora (6) offer colorful accents to the green landscape, while in the summer months large clusters of cinnamon fern (7) greet visitors along the first few hundred feet of the trail.
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