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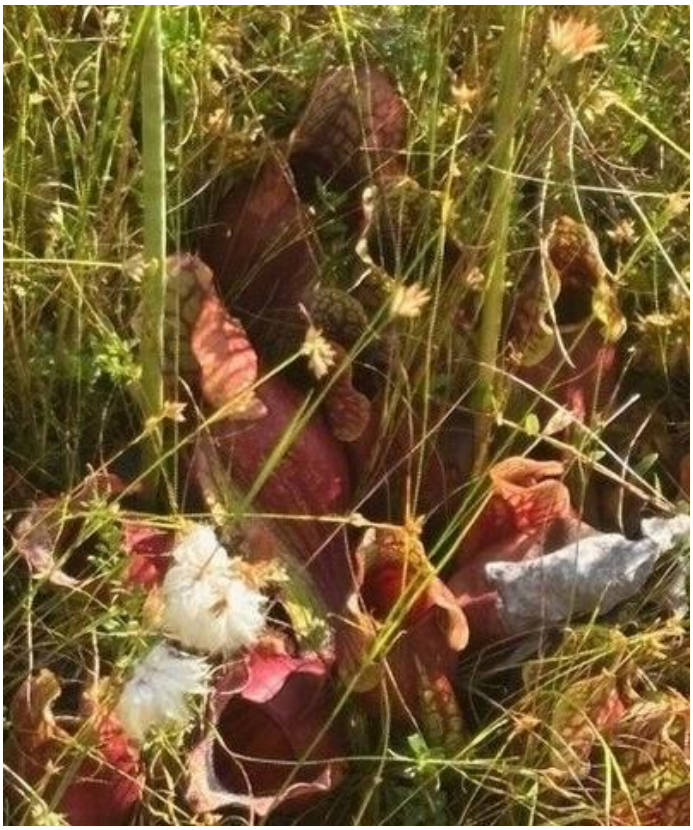
NATURALLY: Spruce Flats is a rare upland bog

By LISA MEADOWS Special to the Gazette 11 hrs ago

Spruce Flats bog is unique. The bog is located in Forbes State Forest, with acreage in both Westmoreland and Somerset counties. It is not far from Laurel Summit State Park.

Spruce Flats Bog is one of the few upland mountain bogs within driving distance of Indiana. The large majority of Pennsylvania bogs are located in lowland areas.

Bogs differ from other wetlands in a variety of ways. No groundwater, creeks or streams provide water to a bog. The only water in a bog comes from precipitation.



Upland bogs are especially acidic, for a number of reasons. The rainwater that feeds a bog is naturally low in the dissolved minerals that typically neutralize acids. And the dominant bog plant, sphagnum moss, constantly releases acid into the surrounding environment.

Until the 1900s, when all of the virgin hemlock was harvested from the area, Spruce Flats appeared to be a typical Pennsylvania hemlock forest. But when all the trees were removed, the area turned into a swampy bog and no one knew why. Trees would not re-grow in the area.

In 1909, the Commonwealth of Pennsylvania bought the property with the intention of turning the area back into a forest. When the state foresters discovered that the base of the bog was sandstone, they tried to blow apart the sandstone with dynamite.

But the dynamite plan failed and the forest did not regenerate. Spruce Flats remained a bog.

It is of note that the Spruce Flats bog was never dominated by spruce trees. The workmen in the area at the time referred to all short-needled conifers as “spruce.” So, even though the area had been a hemlock forest, the moniker assigned to this “man-made” bog was Spruce Flats.

Because soil and water conditions are so unique, Spruce Flats hosts plants and animals that are rare for our area, including pitcher plants, sundew, and cotton grass. These are among the species that can tolerate the highly acidic, oxygen-poor, and low nutrient conditions.

Pitcher plants and sundew are both carnivorous: Both plants eat insects.

The pitcher plant forms a bucket-shaped leaf that is filled with a sweet, smelly nectar. The “bucket” is lined with downward-pointing hairs. Insects land, get trapped in the bucket, and are dissolved to provide the plant with nutrients and minerals, especially nitrogen and phosphorous, which are otherwise hard to find in the bog.

Purple pitcher plants were transplanted to this site in the 1940s from the Glade Run Bog, which was destroyed to create High Point Lake.

Sundew has leaves that are covered with sticky secretions and primarily feeds on gnats, mosquitoes, and flies. Once an insect is trapped, sundew leaves may curl to make sure that the captive cannot escape. The dissolved nutrient mixture is absorbed through the leaf surfaces.

Cottongrass, which is found in bogs throughout North America, including the arctic tundra, is part of the sedge family. It has cotton-like flower fibers that have been used to stuff pillows and make candlewicks.

Spruce Flats is also home to Atlantic white cedar trees that are otherwise rarely found more than 200 miles from the Atlantic coast. These trees are normally found in low-lying areas, as well.

An upland bog such as Spruce Flats is sometimes called a “peatland” because it holds a large accumulation of partially decayed plant matter — mostly sphagnum moss — called “peat.” Plant decomposition is slow in the acidic, nutrient-poor bog and the spongy layers of peat are often quite deep.

Humans have used peat for a variety of purposes. For centuries, dried peat blocks were burned to provide heat, particularly in Ireland, Scotland, and other parts of Europe where wood was

scarce. More recently, peat has been widely used by gardeners, a use that is now banned in some countries.

Peat bogs hold double the amount of carbon compared to soil. Because they store vast amounts of carbon, peat bogs provide an important natural carbon solution and, so, are often now protected.

As with all of nature, Spruce Flats Bog is evolving, of course. The sides of the bog will eventually fall in. The silt will build up and, perhaps 500 years from now, what used to be our nearest bog, will once again become a forest.

Visitors can access the Spruce Flats Bog from the large parking lot at Laurel Summit State Park. A flat, crushed gravel, quarter-mile path, marked by a sign, will take you to a boardwalk and observation area. Due to the fragility of this 28-acre ecosystem, hiking through the bog is not permitted. When you visit, keep in mind that the bog is a wonderful place to view wildlife, including a large variety of birds.

Lisa Meadows is the environmental educator at Forbes State Forest. The Naturally columns are brought to you each month by the Indiana Gazette and Friends of White's Woods to showcase the wonders of nature in our area.