

# THE HORT REPORT

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# The Plant Collective: LAKE ROLAND'S BARE HILLS SERPENTINE BARRENS

By: Rosie Wolf Williams

When you hear the word “serpentine,” you may think of the gliding movement of snakes. But the Bare Hills Serpentine Barrens isn’t named for these reptiles, but instead for a type of metamorphic rock that lies close to the earth’s surface. This rock—serpentine or serpentinite—plays a role in creating a rare plant community that the Lake Roland Nature Council and other groups are striving to protect.

“There are very few examples of this plant community in Maryland and, indeed, in the world,” says Peter Lev, Chair of Lake Roland’s Environmental Committee. “At Lake Roland, the serpentine barrens were neglected for many years. But the Lake Roland Nature Council, in collaboration with Baltimore County and the Guilford Garden Club, is working to maintain and restore them.”

Serpentine barrens are all similar in the nature of their creation, but are often unique in their plant communities. When two of the earth’s tectonic plates move toward each other and one slides under the other, that area is called a subduction zone. Serpentine barrens are created in these subduction zones.

The resulting shallow layers of soil in these zones are rich in metals including chromium, copper, iron, and magnesium. “Serpentine barrens are the meadows that form in shallow serpentine soil,” says Lev. “Many plants will not grow in this soil, especially since it is low in calcium and phosphorous. So the biological community would consist of plants that thrive in this soil. There are about 15 serpentine barrens on the U.S. East Coast, mainly in Pennsylvania and Maryland, and these support, basically, the same plants.”

“Generally, you will find more serpentine on the coasts because it is created in a subduction zone,” says Dwight Johnson, a member of the Maryland Native Plant Society and the board of directors of the Lake Roland Nature Council. “Maryland and southern Pennsylvania are the biggest outcrops, and Soldiers Delight is probably the biggest. There are not many natural barrens left on the east coast of the United States.”

The Bare Hills serpentine barrens consist of pine woodlands, grassland, and scrub, and the area is managed to prevent the encroachment of the pine woodland and scrub habitat on the grassland. The [post oak](#) (*Quercus stellata*) and the [blackjack oak](#) (*Quercus marilandica*) are two important plants in the barrens. The post oak is tolerant of the heavy metals contained in the subduction zone. The blackjack oak is a tree that enjoys dry, acidic soil, a comfortable companion to the post oak in the serpentine barrens.

“Of all the plants that are a part of this rare global plant community, the [fameflower](#) (*Phemeranthus teretifolium*) is the one you might think about when you think of serpentine barrens,” says Johnson. Fameflower, according to the Maryland Department of Natural Resources, is an S2 plant. The designation means that it is at very “high risk of extinction or extirpation due to very restricted range, very few populations or occurrences, very steep declines, very severe threats, or other factors,” says the website, “and is typically occurring in five or fewer populations.” The fameflower only blooms for a few hours in one afternoon, waiting for a passing pollinator. But if it is not fertilized, it will close and fertilize itself.

Another S2 plant, [Scribner’s witch grass](#) or Scribner’s panic grass (*Dichanthelium oligoanthes var. scribnerianum*) is a tufted perennial grass that also grows in the serpentine barrens. The name comes from the seed head of the grass, which resembles the sweeping end of a witch’s broom.

An additional plant found in the barrens is the whorled [milkweed](#) (*Asclepia verticillata*), a smaller species of milkweed. This species, categorized as an S3 plant, is an important host plant for the ever-decreasing population of the monarch butterfly.

The [state list](#) defines S3 plants as vulnerable and on a watchlist, “at moderate risk of extinction or extirpation due to a fairly restricted range, relatively few populations or occurrences, recent and widespread declines, threats, or other factors. Typically occurring in 21-80 populations.”

Johnson points out that another S3 plant of the Bare Hills serpentine barrens, the [annual fimbry](#) (*Fimbristylis annua*), can easily be forgotten because of its diminutive size. “You might not even think about the fimbry, because it’s such a little, tiny thing. It’s just a slight little plant, but it is one of four of the rare plants that we have up there,” he says. “Even if none of the plants were globally rare, if you want to see that mixture of four plants, you’ve got to go to a serpentine barren.”

Lev noted another barrens’ plant that plays a role in the support of pollinators. “We saw a few lingering flowers of Lyre-leaved [Rock Cress](#) (*Arabidopsis lyrata*) which blooms in April. This plant is notable as the host plant of the [Falcate Orangetip butterfly](#), which is hard to find in Maryland except at Soldiers Delight and Bare Hills Barrens,” he says.

While it’s working to save much of the barrens, the Lake Roland Nature Council is also working to eradicate one member of the plant family there—the highly invasive [Miscanthus sinensis](#). Commonly known as Chinese silver grass, this beautiful, tall ornamental grass threatens the delicate balance of the barrens, by spreading both seeds and rhizomes. It is also very flammable and could endanger large swaths of the barrens if a fire were to occur. Volunteers have already removed tons of the plant from sites within the serpentine barrens and continue to find the salt-resistant and deer-resistant plant growing there.

If you would like to visit [Lake Roland](#), the main entrance is at 1000 Lakeside Drive, Baltimore, Maryland, with an additional access from the Falls Road MTA light rail station.



Photos courtesy of Lake Roland Nature Center.