

Maryland General Assembly  
House Bill 729  
Vernal Pool Wetlands Protection Act of 2024

Written Testimony of Cathy Wiss  
Master Naturalist with the Anacostia Watershed Society  
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I am writing in support of House Bill 729. As a volunteer Master Naturalist with the Anacostia Watershed Society (AWS), I have been monitoring several vernal pools in Prince George's County and am involved in the AWS effort to identify and inventory other vernal pools within the Anacostia Watershed. I also monitor vernal pools in Anne Arundel County at Jug Bay Wetlands Sanctuary.

Vernal pools are hidden gems. They are small and shallow, without a permanent inlet or outlet, and follow a seasonal pattern of filling with water in late fall or early winter and drying up during the summer. Because they dry up, they often are overlooked and misunderstood. About half of them have already been lost to urbanization, agriculture, and other habitat disturbances. Identifying them is critically important for their survival and for the survival of the organisms that depend on them.

Vernal pools are indeed unique and important ecosystems that contribute substantially to Maryland's biodiversity. Not only do they serve as breeding grounds for many species of amphibians – salamanders, frogs, and toads -- they also are the only place that some amphibians can breed successfully because they lack defense to fish predation. The seasonal drying of vernal pools prevents establishment of fish populations. In Maryland “vernal pool obligate” amphibians include marbled salamanders, spotted salamanders, eastern tiger salamanders, Jefferson salamanders, wood frogs, and eastern spadefoot toads. In addition, vernal pools are the only places where fairy shrimp are found.

Although I wholeheartedly support the legislation, I encourage you to add Delmarva bays and magnolia bogs to the wetlands to be protected through this bill. Both are small, isolated wetlands that harbor unique life.

Delmarva bays are small depressions on the Eastern Shore that most likely date from the Pleistocene Era. Wayne Tyndall, restoration ecologist with the Maryland Natural Heritage Program, once stated, “If you could only save one type of wetland, this would be it. . . . [Delmarva bays] have the highest biodiversity conservation value of any wetland type on the peninsula, as they support the greatest total number of plant and animal species, including many that are rare, threatened or endangered.” See: <https://news.maryland.gov/dnr/2018/10/01/delmarva-bays/#:~:text=On%20the%20Delmarva%20Peninsula%2C%20they,colder%20temperatures%20and%20longer%20freezes>. Delmarva bays support the eastern tiger salamander, which is listed as endangered in Maryland and now found only on the

Eastern Shore. See Cunningham, Heather R., and Nathan H. Nazdrowicz, ed. 2018. *The Maryland Amphibian and Reptile Atlas*. Baltimore: Johns Hopkins University Press.

During our vernal pool monitoring in Prince George's County, we rediscovered some long-forgotten magnolia bogs. These are not technically vernal pools because they do not dry out in summer. Instead, they are more fen-like, fed by groundwater seepages along the Fall Line between the Piedmont and Coastal Plain. Magnolia bogs are characterized by a unique plant community and are breeding grounds for vernal pool obligate amphibians. Last year, we found wood frogs breeding in these bogs. The appended article by Rod Simmons and Mark Strong gives a fuller description of magnolia bogs and their flora.

I also urge you to consider increasing the size of the buffers to be established to protect vernal pools. Adult vernal pool amphibians live in burrows or under logs some distance away from the pools where they breed, usually much more than 100 feet away. One of the volunteer activities at Jug Bay Wetlands Sanctuary is to keep these amphibians safe when they travel across roads during their migration to their pools. These roads are much farther away from the pools than 100 feet.

Likewise, a 100-foot buffer would not be large enough to protect a magnolia bog. Not only are bogs threatened directly, but also by changes to their underground water source.

Thank you.

Cathy Wiss

## Appendix

### Fall Line Magnolia Bogs of the Mid-Atlantic Region

By Roderick Simmons and Mark Strong

[Reprinted from the October 2002 issue of Audubon Naturalist]

Magnolia Bogs have long been regarded as one of the most interesting natural features in the Washington, D. C. area. W. L. McAtee, a Washington area naturalist who first defined these bogs in 1918, termed them "Magnolia Bogs" for the unique assemblage of sweetbay magnolia (*Magnolia virginiana*), *Sphagnum* moss, and other bog flora. Occasionally they are referred to as "McAteean Bogs," after McAtee, or "Seepage Bogs." These bogs usually form on hillsides or slopes where a spring or seep flows from an upland gravel and sand aquifer over a thick, impervious layer of underlying clay which prevents the downward infiltration of water. This seepage flow and the highly acidic, gravelly soils create optimal conditions for the formation of bogs.

The term "bog" as applied here, although technically a misnomer, has traditionally been used by people in general, including botanists, to describe acidic, sphagnum wetlands that strongly resemble bogs. Magnolia Bogs are actually acidic, fen-like seeps uniquely associated with high elevation gravel terraces of the inner Coastal Plain near the Fall Line, which divides the Coastal Plain and Piedmont physiographic provinces in the mid-Atlantic region. Their distribution generally follows the Fall Line in a narrow east-west band from the Laurel area, at the northern extent of their range in Prince George's County, Maryland, to their southern extent near Fredericksburg, Virginia.

Throughout their range, they were never common or very large, usually occupying an area an acre or less in size. Nevertheless, they are vitally important resources both for the pure, naturally filtered waters which flow continuously from them — even in drought periods — and the relic populations of ancient northward and westward migrations of often rare Coastal Plain flora, which have persisted in small communities well inland and fairly close to the Piedmont. Included in these relic communities are plants such as bog clubmoss (*Lycopodiella appressa*), twisted spikerush (*Eleocharis tortilis*), slender beaksedge (*Rhynchospora gracilentia*), bunched beaksedge (*Rhynchospora cephalantha*), hairy umbrellasedge (*Fuirena squarrosa*), darkgreen sedge (*Carex venusta* var. *minor*), bog yellow-eyed grass (*Xyris difformis* var. *difformis*), ten-angled pipewort (*Eriocaulon decangulare*), smooth winterberry (*Ilex laevigata*), red milkweed (*Asclepias rubra*), zigzag bladderwort (*Utricularia subulata*), and Elliott's goldenrod (*Solidago lalissimifolia*). Other well-known bogs near Washington in Anne Arundel County, Maryland that are more eastward of the Fall Line — such as the extirpated Glen Burnie Bog and the Magothy and Severn Bogs — are not characteristic Magnolia Bogs, despite some floristic similarities, because of different geological conditions and plant assemblages.

Peatlands, pocosins, fens, and bogs throughout the Coastal Plain are now extremely rare as a result of development, habitat disturbance, fire suppression, and fragmentation. Magnolia Bogs are also increasingly rare and surviving ones degraded throughout their range because of extensive development of the gravel terraces that surround the bogs — destroying or severely depleting their water supply. Most of the famous ones surveyed by the Smithsonian Institution and W. L. McAtee nearly a century ago, like the Holmead Swamp, Terra Cotta Bog, and Powder Mill Bogs, have long been destroyed (although we recently uncovered a small remnant of the latter, along with a small population of ten-angled pipewort).

Some, like the Suitland Bog and Oxon Run Bogs, have survived, although the Suitland Bog is greatly disturbed with the addition of a boardwalk, numerous out-plantings of non-native (to the site) carnivorous pitcher plants (*Sarracenia purpurea*) which rob valuable habitat for native species, a sewer line, and encroaching housing developments. Urbanization, storm water runoff, siltation, off-road vehicles, and invasive exotic plants have degraded most of the few remaining Magnolia Bogs and greatly threaten their future survival. Unless adequate protection is uniformly given to these sites, most of them will disappear in the decades to come.

For the past five years as part of a research project mainly for conservation purposes, we have been conducting an exhaustive search for any remaining Magnolia Bogs in the region. All available information regarding the historic Magnolia Bogs — going back to the Civil War — was also researched and documented. We have been aided in these surveys by other botanists with the Maryland Native Plant Society (MNPs), and the preservation of surviving Magnolia Bogs has become a major campaign of MNPS. Although most of the historic sites have been destroyed,

some new sites were discovered — the mostly pristine but threatened Araby Bog is a stellar example.

A dozen Magnolia Bogs are known to exist today in Maryland, D. C., and Virginia, three of which are in the path of the proposed Inter County Connector. Several small remnants of historic bogs like the Ammendale and Powder Mill Bogs have been discovered. While most of the rare orchids and lilies have largely disappeared, several very rare plants that had not been seen for many decades — halberd-leaved greenbrier (*Smilax pseudochina*), low rough aster (*Aster radula*), and Long's rush (*Juncus longii*), for example — have been rediscovered. Several previously unreported plants for Maryland — including featherbristle beak sedge (*Rynchospora oligantha*) have also turned up.

*Rod Simmons is a field ecologist and MNPS Botany Chair. Mark Strong is a botanist with the Smithsonian Institution. They expect to publish their research on Magnolia Bogs later this year.*