



Testimony of
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Anacostia Watershed Society
to the
Maryland House of Delegates
Environment and Transportation Committee
HB 878, Vernal Pools Protection Act of 2025
February 19, 2025

Good afternoon. I am testifying today on behalf of the over 10,000 members, supporters and volunteers of the Anacostia Watershed Society (AWS). The Anacostia watershed is a 176 square mile area encompassing parts of Prince George's and Montgomery counties in Maryland as well as the District of Columbia. Founded in 1989, AWS is a small organization of activists, advocates, experts, and educators working to conserve, protect and restore the Anacostia watershed for all that lives within it and for future generations. The work AWS does would not be feasible with our staff alone. AWS counts on hundreds of volunteers from Maryland and DC in the field almost every day, monitoring vernal pools, picking up trash, planting trees, propagating wildlife, and removing invasive species. From young students learning about the ecology of the watershed to naturalists preparing to lead conservation efforts in local communities, together we create a group of neighbors and friends in Prince George's and Montgomery counties, brought together by a shared love for our local watershed and a common determination to see it restored to health.

Vernal pools are a unique type of wetland in the state of Maryland. Though often small and seasonal, they play a vital role in the ecosystem. These temporary wetlands provide essential breeding habitats for a variety of amphibians, including species such as wood frogs and a group of salamanders known as mole salamanders. The mole salamander family is unique to North America (including the famous axolotl) and includes species such as the Eastern tiger salamander (an endangered species in Maryland), Jefferson salamander (a vulnerable species in Maryland), Spotted salamander, and Marbled salamander. The latter two are present in the Anacostia River watershed, and we are currently evaluating their presence in our watershed for purposes of conservation planning. Many species like these cannot reproduce outside of vernal pools. Consequently, the loss of vernal pools and their dependent amphibian and invertebrate species would go hand in hand. These ecosystems support biodiversity and contribute significantly to the health of Maryland landscapes and natural heritage.

Vernal pools also offer several ecosystem services, including flood mitigation and water filtration benefits, enhancing the resilience of local ecosystems and communities. In many studies vernal pools were found to enhance leaf-litter decomposition and denitrification¹. During rain events, vernal pools catch stormwater runoff and act as the landscape's "kidneys," filtering and cleaning the sediment-laced water and replenishing groundwater, clean and nitrogen free. Each acre of wetland can store approximately 81-216 metric tons of carbon, making a significant contribution to limiting greenhouse gas emissions.² AWS believes many vernal pools have yet to be identified and recorded in the Anacostia watershed. Yet, the small amount already recorded could store 2,106-5,616 metric tons of carbon.

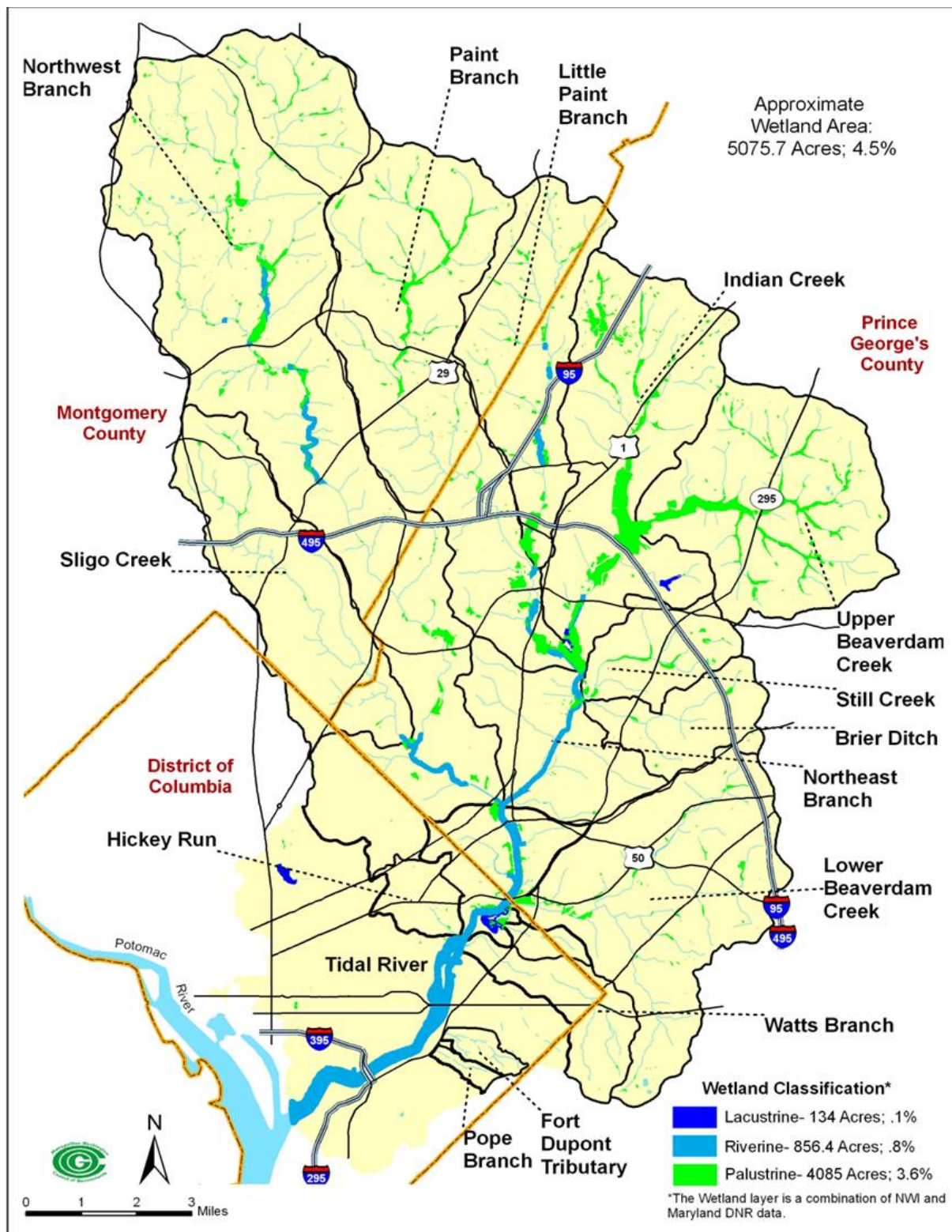


Figure 1: A marbled salamander alive in a vernal pool habitat. To the right is a dead salamander due to unnecessary salt application.

Unfortunately, vernal pools are often overlooked in conservation efforts due to their transient nature and small size, making them particularly vulnerable to urban development, agriculture,

¹ Capps, Krista A.; Rancatti, Regina L.; Tomczyk, Nathan; Calhoun, Aram J K; and Hunter Jr., Malcolm L., "Biogeochemical hotspots in Forested Landscapes: The Role of Vernal Pools in Denitrification and Organic Matter" (2014). Publications. 30. https://digitalcommons.library.umaine.edu/mitchellcenter_pubs/30

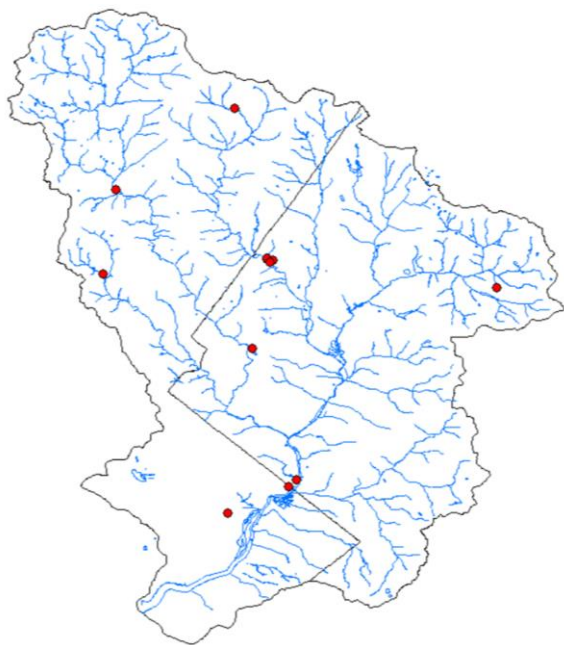
² Capps Texas A&M Agrilife Extension, *Carbon Storage and Credits*



Map 1: Wetlands Classifications within the Anacostia Watershed

and climate change. In the Anacostia watershed, we have observed that even public landowners of greenspaces are unaware of their presence. Urban development has often caused the destruction of vernal pools, thus leaving important species homeless and unable to survive (Figure 1).

The mission of AWS extends beyond the Anacostia River mainstem to include tributary streams, wetlands, and riparian habitats of which vernal pools are an important part. We began a vernal pool program in 2020 with the following goals: 1) inventory vernal pools of conservation importance in the Anacostia River watershed, focusing on public lands such as those owned by the Maryland-National Capital Park and Planning Commission (M-NCPPC) in Prince George's County; 2) with the help of trained citizen scientists, monitor those vernal pools with obligate species; 3) identify conservation and restoration needs that arise; and 4) educate the public about these fragile ecosystems.



AWS has discovered 26 vernal pools within the watershed thus far (Map 2). Vernal pools have been typically discovered in and around palustrine wetlands (Map 1). Two were surveyed in a former stream channel and farm pond in the Paint Branch subwatershed in Prince George's County (Figure 2 and 3). In these two vernal pools many species were recorded including, the spotted and marbled salamander, wood frog, seed shrimp, fingernail clams, and caddisflies.

Map 2: Vernal Pool sites in Anacostia Watershed



Figure 2: A vernal pool formed by an old stream channel



Figure 3: A vernal pool formed in a former farm pond



Marbled salamanders lay their eggs under logs or leaves in these dry pool beds in September. The eggs hatch when the pools fill with water. These two vernal pools allow for amphibians like this marbled salamander to thrive and reproduce. While this is the ideal life cycle habitat, through our work we have noted the drying of vernal pools during breeding season, affecting the survival of the species. This drying has been linked to the increasingly unpredictable weather patterns caused by climate change.³

Projects like this one rely on trained citizen scientists to go out and

³ Brooks, Robert, *Weather Related Effects on Woodland Vernal Pool Hydrology and Hydroperiod*. U.S Dep. of Agriculture WETLANDS vol. 24 No. 1 (2004)

survey these areas. We strive for this program to bring naturalists to the next level in their profession and educate the watershed's neighbors about the findings. This brings awareness to the ecological importance of vernal pools and makes a difference in local communities, including by empowering landowners to manage different ecosystems on their land.

Given their ecological importance and the pressures they face, it is crucial that we prioritize the protection of vernal pools. I respectfully urge you to support the Vernal Pool Bill as it will provide much-needed protection for these habitats. Vernal pools are declining at a rapid rate as they often fall through the gaps in the regulatory jurisdiction of the federal Clean Water Act and fall short of requirements for protection of wetlands by MDE. Under HB 878, vernal pools will be protected wetlands under MDE regulations and a plan will be developed to identify vernal pools. Actions by MDE to identify the state's vernal pools should not overly burden an already well-developed process for delineating the state's wetlands.

Benefits of the HB 878 include:

- Protection and increased biodiversity due to protecting rare ecosystems for breeding and population growth; 26% of all state-listed amphibians in the Mid-Atlantic rely on vernal pools⁴
- Filtration of nitrogen pollution that originates from fertilizers and urban development
- Stormwater flooding prevention in urban and rural landscapes by capturing and retaining snowmelt and rain water, replenishing groundwater resources
- Continued carbon sequestration by capturing and storing atmospheric carbon dioxide.⁵

There is no time to delay. Vernal pools are declining rapidly within Maryland, and it will not stop unless they are protected. AWS strongly supports HB 878, and we urge the Committee to favorably report out on the bill.

⁴Southerland, Mark., *"The Magical Vital Vernal Pools, Biodiversity in our Backyards"* (2019). Sierra Club

⁵Pennsylvania Natural Heritage Program