# Virginia Master Naturalist Program

# Virginia Vernal Pool Cooperative Project

# Report to Land Managers in [Location Name]

## About the Virginia Master Naturalist Program

The Virginia Master Naturalist program is a statewide volunteer program focused on natural resources. The program is housed within Virginia Cooperative Extension and Virginia Tech, and six additional state agencies co-sponsor the program. Our volunteers complete basic training in natural resource topics and then engage in environmental education, citizen science, and stewardship projects to benefit local natural resources and natural areas. The [Chapter Name] is one of 30 chapters of the program, has [number of chapter members] active volunteers, and conducts projects primarily in [area where chapter is active]. Our chapter partners with many local organizations and has been active with a variety of projects in [location name] in the past, such as [example projects here].

## About the Vernal Pool Cooperative

The Vernal Pool Cooperative of Virginia is a statewide project for VMN volunteers that has been developed with direction from experts at the Virginia Department of Wildlife Resources and Virginia Commonwealth University. Overall, the intention of the project is to provide useful information about vernal pool resources to managers of public lands by locating vernal pool habitats and monitoring them over time using standardized protocols. The monitoring consists of visiting the sites regularly (once every 3-6 weeks) from February until May and making occasional visits in the summer and fall seasons. At each visit, volunteers document the size and condition of the vernal pools and look for wildlife species that depend on these habitats. Volunteers enter the data into an online database hosted by CitSci.org. More information on the project is available at <http://www.virginiamasternaturalist.org/vernal-pools-cooperative.html>.

## About Vernal Pools

 Vernal pools are isolated, seasonal wetland habitats usually found in forested areas. Their sizes can range from less than one meter in diameter to over an acre, and the shape can vary as well, from round to very linear. Vernal pools typically hold water in late winter and spring, but dry up partially or completely at other times of year, which means that populations of predatory fish cannot live in them. This feature makes vernal pools good breeding habitat for a wide variety of frogs, salamanders, and other species. Some of these species depend entirely on vernal pool habitats for some portion of their life cycles, and they are called ‘obligate’ species. Obligate vernal pool species found in this part of Virginia include [list the obligate vernal pool species for your part of the state.] Many additional invertebrates, amphibians, reptiles, and mammals use vernal pools for breeding, obtaining food and water, and movement from one place to another. Vernal pools also provide other ecosystem services such as flood control and ground water filtration.

## 2022 Winter, Spring, and Summer Data

 The majority of the monitoring takes place from February through May. The table below summarizes the observations made by volunteers at sites in [location], primarily on public lands. [Describe what species were most common and which were not found. For example: Spotted salamanders are the most common of the vernal pool obligate species observed. Wood frogs and fairy shrimp also were observed at a small number of sites. No marbled salamanders or other vernal pool obligate species were observed so far this year. Due to their particular life cycle, marbled salamanders tend to be more easily observed in the fall, and some volunteers may make visits to the pools later this year in October and November to search for them.]

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| --- | --- | --- | --- | --- | --- | --- |
| **Pool Name** | **Latitude** | **Longitude** | **Number of times pool was monitored** | **Spotted salamanders observed?** | **Highest count of spotted salamander egg masses observed** | **Other obligate species observed** |
| **Fill in pool name, e.g., Biscuit Run Pool 1** | Fill in latitude | Fill in longitude | 4 | y | 9 | none |
| **List other sites here with their data** |  |  |  |  |  |  |
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The following sites have been monitored in previous years but were not monitored in 2022: [list any sites at that jurisdiction that were not monitored].

## Conservation of Vernal Pool Habitats

 Our data indicate that there are many vernal pool habitats on public lands in [location], and most of these pools had obligate species in them this year. While the species we observed do not have legal status of rare, threatened, or endangered, they are still a valuable part of the biological diversity of our landscapes [edit this sentence if your site does have protected species]. Potential threats to vernal pool habitats include trash, filling to create land for development, and impacts on water quality from runoff of sediment and chemicals. In addition, changes to the land around vernal pools can impact the obligate species. The obligate amphibians using vernal pools actually spend most of their life cycle underground in the upland forested areas around vernal pools, potentially one thousand feet away or more. Removal of that forestland and other land disturbance there remove another critical piece of their habitat. In addition, these species may migrate across roads during the breeding season, where they may be killed by traffic.

 Some recommended practices for vernal pool conservation include:

* Retain tree canopy cover next to and nearby vernal pools.
* Do not remove leaf litter, downed wood, or rocks from the areas nearby vernal pools. These all service as hiding places for the obligate vernal pool amphibians.
* Do not disrupt the hydrology of the pools by routing additional drainage into them.
* Do not dump trash or debris into the pools.
* Reduce runoff into pools that might contain fertilizers, pesticides, and sediment, such as the runoff from roads or buildings.
* Invasive species management may be important and necessary in the forested areas near vernal pools, but care should be taken to avoid impacting the pools with herbicides.
* Educate neighboring landowners and the public using the sites for recreation (if at a park) so that they are aware of the importance and value of vernal pools and the wildlife species that use them. Encourage recreators to assist with conservation by staying on defined trails, not removing rocks, and not wading in the pools.

## Future Plans

 With your permission, our volunteers would like to continue monitoring these sites in 2023. A volunteer will contact you in late 2022 or early 2023 to confirm our plans and to request any guidance or preferences regarding this project that you may have. Meanwhile, if you have additional questions about vernal pools, the Virginia Master Naturalist program, or this project, please contact us via the vernal pool project liaison for our chapter, [liaison name and contact information]. Our volunteers would be happy to partner on any vernal pool conservation or education efforts you may want to pursue.