**Virginia Master Naturalist Program**

**Project Proposal Form**

**Project Name:** **Vernal Pool Cooperative of Virginia: Pool Mapping and Monitoring**

**Submitted By:**  **Phone or Email Contact:**

**Project Purpose and Value**

Vernal pools are critical amphibian habitats with unique communities providing energy flow between terrestrial and aquatic systems. Data input from this project on the CitSci web site will help to clarify the role and importance of vernal pools in forest habitats.

**Project type:** Citizen Science, primarily. There may be education and stewardship activities associated with it as well.

**Project Description**

Vernal pools are shallow depressions that fill with snowmelt and runoff in the spring. They provide essential breeding areas for wood frogs and salamanders, as well as feeding and resting habitats for deer, bear, and a suite of other mammals, birds, and reptiles.

In this project, volunteers identify and describe vernal pools in their local communities by researching and communicating with the land manager of the given public property for verification and access. Then, volunteers will monitor these pools to document the presence of obligate species. In addition, volunteers will communicate with land managers and the public about their findings in order to educate them about the importance of conserving vernal pool habitats.

 Participants will first find and map vernal pools in their chapter’s area, and then visit selected vernal pools on a regular basis to observe and record the ecology and fauna of the pools. If the land manager desires and volunteers are included on or obtain a Scientific Collection Permit, observing may include **dipping nets in the water** to find species such as fairy shrimp, **dipping hands in the water** to determine species of amphibian egg masses, and by **dipping measuring instruments in the water** to determine pool depths. Without a permit, observations are made from the pool perimeter without disturbing the wildlife or moving them from the pool.

Volunteers will document data in the project database on the CitSci.org site. They will share data at the end of each calendar year (or more often) with the managers/stewards of the lands on which the vernal pools are found and are encouraged to conduct other conservation and education activities in cooperation with the land managers.

**Project Location**

Vernal pools will be on Virginia public lands or on Virginia private lands with written permission from property owner. Participants will establish a working partnership with the managers/stewards of the public lands, (Park Managers, for example) and will share data with them on a regular basis (at the end of each calendar year, OR more often if the steward prefers). For pools on public lands, volunteers should ensure that they have permission to do the monitoring activities there. For pools on private lands, volunteers must obtain written permission AND written acceptance by the land owner that information gathered will be shared with the CitSci.org web site, state agencies, and others.

**Time Frame**

This project is expected to continue over a number of years. Volunteers should plan to visit the same vernal pools several times a year. In a typical year, volunteers will start visiting pools in January, February, or March, depending on when the first warmer, rainy nights occur to facilitate amphibian migrations. Volunteers should monitor the pools enough times during the spring to be able to document whether obligate species were ever present—typically once a month. In the summer and fall, volunteers may monitor pool conditions once or twice per season and/or visit to monitor for marbled salamander populations during their fall breeding times. The number of times to monitor a pool is flexible and there is not a minimum or maximum number.

**Partner Contacts**

* Michelle Prysby - Virginia Master Naturalist Program Director, Virginia Tech/Virginia Cooperative Extension, assisting with communications and organization. mprysby@vt.edu, 434-872-4571
* Susan Watson - Virginia Department of Wildlife Resources, providing technical and scientific direction and training workshops. Susan.watson@dwr.virginia.gov, 804-367-1185
* Anne Wright - Virginia Commonwealth University (retired/affiliate), providing technical and scientific direction and training workshops. abwright@vcu.edu
* Paula Labieniec - Virginia Master Naturalist volunteer, Pocahontas Chapter, serving as database coordinator. plabieniec@gmail.com

**Project Chair *(Who from the chapter is the contact person and organizer for this project?)*:**

We ask that each participating chapter have a project lead/liaison with the following responsibilities:

1. Serve as the chapter’s main point of contact for the project leaders at the state level.
2. Serve as the main point of contact within the chapter for chapter volunteers participating or wanting to participate in the project.
3. Keep a list of the pools being monitored by the chapter and ensure that they have been entered into CitSci.org.
4. Keep a list of which volunteers are monitoring each pool. Encourage those volunteers to sign up for the project in Better Impact.
5. Communicate opportunities for new volunteers on the project to receive training. Sometimes this training may simply be monitoring alongside a more seasoned volunteer.
6. Work with other volunteers in the chapter to conduct general outreach to land managers, staff, neighborhood residents, and members of the public, particular those individuals associated with the sites being monitored.
7. Stay aware of and help promote opportunities to tie the pool monitoring to education and stewardship efforts in order to encourage conservation outcomes.
8. Facilitate communication amongst the volunteers in the chapter who are participating in the project. This communication could include regular reminders to do the monitoring, sharing of findings, reminders to enter data, etc. It may also include sharing communications received from the state-level project leaders.

We ask that the Chapter Liaison commit to at least one calendar year in the role, January through December. Each December, the volunteer should communicate with the rest of the project leadership to determine whether they would like to remain in the role. The Chapter Liaison will need to attend 2-3 (Zoom) meetings each year to learn about project updates and communicate with project leaders from other chapters and the state. The timing of the rest of the role will depend on the number of pools the chapter is monitoring, the number of volunteers involved, and the amount of outreach conducted. A reasonable estimate of time would be two or three hours per week in the most busy part of the field season (February-April), which would include participating in the monitoring. The remainder of the year, hours would be much fewer and sporadic.

**What, if any, prior experience or expertise is required or preferred?**

Volunteers must have completed a vernal pool training with the state project leaders or be trained in the field by another volunteer who has attended that training.

The Chapter Liaison should have reliable internet access in order to participate in Zoom meetings and to access CitSci.org. They need to have a CitSci.org account. They will need to regularly communicate via email, so they should be someone who can regularly check and send out emails. They should be organized and able to keep up with changes in the pool and volunteer lists.

Other project volunteers need to have a CitSci.org account or be working in partnership with another VMN volunteer who has the account and will be responsible for data entry.

**What training will be provided and by whom?**

Training workshops have been conducted for many VMN chapters in the past at the VCU Rice Center and at locations near the chapters. There are not statewide field trainings planned for 2022, but chapters can coordinate their own trainings led by experienced volunteers. State project leaders will conduct some Zoom sessions to review the project procedures and will announce these to the chapter project leaders as they become available.

**Resources provided**

* Data sheets that outline the data that should be collected for documenting new pools and monitoring known pools
* CitSci.org data entry site (web and mobile versions)
* Background information on vernal pools and obligate species provided under Resources on CitSci.org

**Resources needed**

* Knee boots/waders that have been washed with a 10% bleach solution, to prevent pathogen contamination in pools
* A scientific research and collection permit is required for this project if wildlife will be handled or if sampling will involve walking through and disturbing the pools.  This includes:
* Dipping net and white bucket/container for identifying specimens before returning them to pool
* Camera, GPS, and data sheets (one of each per team of volunteers will suffice.)
* A mobile device for entering the data via the CitSci mobile app (optional)
* Account (free) on CitSci web site

**Safety hazards**

* Tripping, slipping, and falling hazards associated with being outdoors and off-trail.
* Environmental hazards, particularly associated with extreme cold, because much of the monitoring is conducted in winter and early spring.
* Review the [Safety and Risk Management for Virginia Master Naturalist volunteers reading](https://www.pubs.ext.vt.edu/content/dam/pubs_ext_vt_edu/CNRE/cnre-124/CNRE-124.pdf) to familiarize yourself with best practices.
* Work in teams of two whenever possible. Let someone know where you will be working.
* Carry drinking water and have a first aid kit available.
* Do not approach wildlife. Beware of wildlife behaving erratically.
* Avoid poison ivy.

**Protocols**

* Volunteers must be currently enrolled, accepted VMN volunteers or be land managers participating in their professional capacity.
* All footwear worn in/around pools must to be properly treated.
* Each series of vernal ponds must have their own set of dipping nets and other equipment, to avoid contamination of other pools with pathogens. Pools in the same park may use the same equipment.
* Volunteers work the perimeter of the pools only; no wading in the pools on purpose.
* Mapping of pools will be done by recording GPS coordinates. Pool dimensions will be measured using measuring tapes or by pacing the perimeter to obtain estimates. Pool depth should only be measured if it can be done from the pool perimeter, without entering it.
* For most pools, volunteers should observe from the perimeter only and avoid handling or disturbing any wildlife.  If the local land manager wishes for more intensive monitoring, volunteer must apply for a permit or be listed as collaborators on the land manager's permit. A permit is necessary for even temporary removal of wildlife from the pools, such as moving amphibians into containers for viewing or measurements. Without a permit, observations must be made without moving the wildlife from the pools.
* No specimens are to be taken away from the pools, unless requested by DCR, DWR, or similar authority and part of the approved protocols on a DWR scientific research permit.
* Volunteers must keep land stewards informed of their progress and discoveries via an end-of-year update. This communication can be more often if requested by land steward.

**Are minors involved?** Youth who are 14-17 years old may participate provided they are accompanied by a parent or other adult who is directly responsible for them, and all protocol listed above is obeyed by them.

**How will the project be evaluated during implementation and after completion?**

All data will be entered on the CitSci web site and shared with the land steward. At the end of each calendar year, the Vernal Pools Team will meet, assess the project, and discuss improvements to program and protocol.

**How will the Virginia Master Naturalist program be recognized?**

No special recognition is anticipated.

**How will volunteers benefit from participation in the project?**

Volunteers involved will improve their observation and identification skills and become better educated stewards of our local natural lands. Hours on this project will count towards service requirements for VMN certification.

*For Project Chair Only: Project approved? Date of approval: \_\_\_\_\_\_\_\_\_\_\_\_\_*