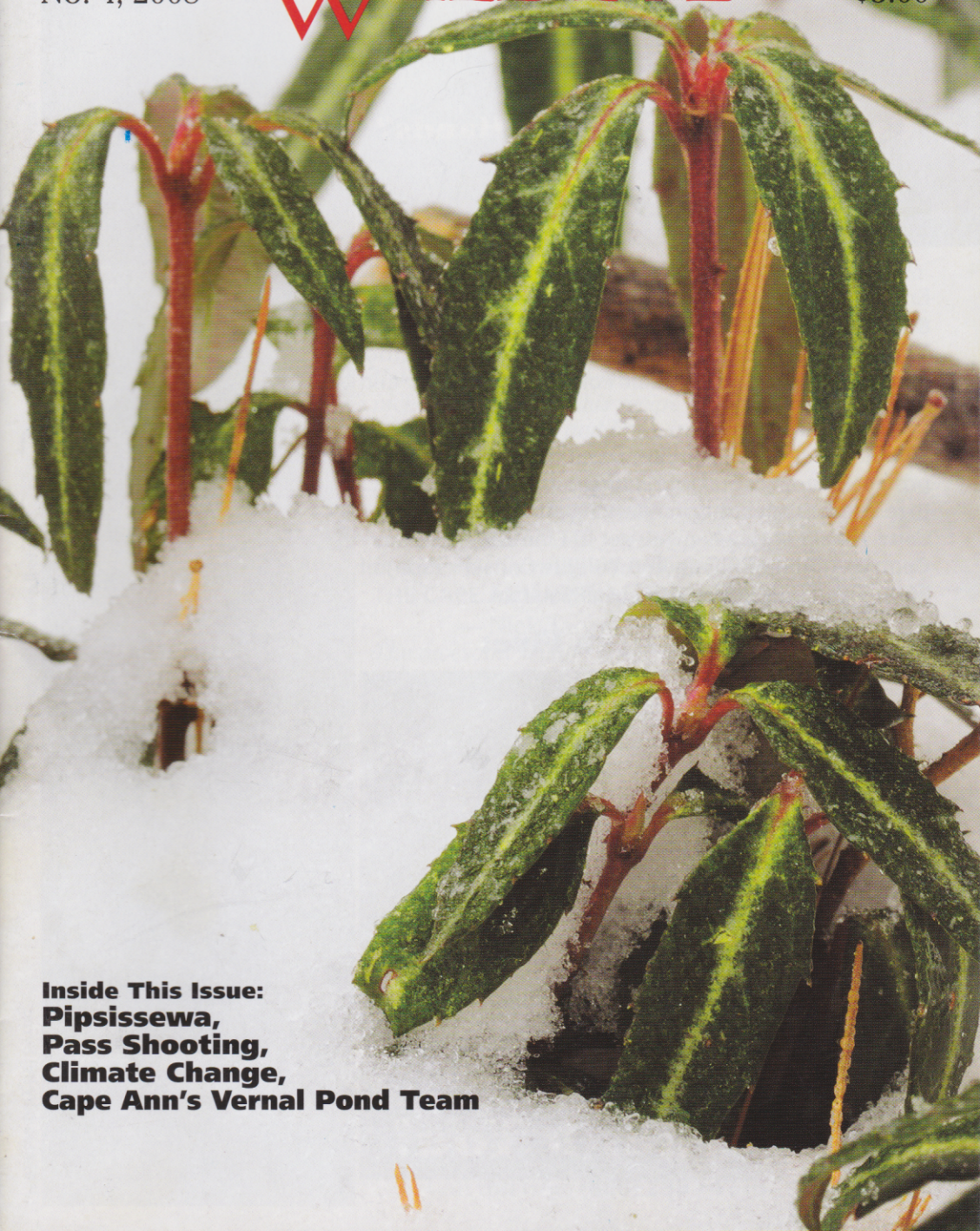


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# The Cape Ann Vernal Pond Team: Defending Vernal Ponds and Inspiring Community Action

by Nick Taormina

A small group of citizens with a shared interest in protecting their community's ephemeral wetland habitats serves as a shining example of how ordinary people can accomplish extraordinary feats in wildlife conservation...

I first learned of the Cape Ann Vernal Pond Team (CAVPT) six years ago while studying wetland habitat in Gloucester, Massachusetts. I was interested in vernal ponds (also known as spring or vernal pools) but didn't know where or what to look for. A friend put me in touch with Rick Roth, one of the founding members of a local conservation group, the Cape Ann Vernal Pond Team. After speaking to me briefly, he invited me along on a pond trip he and other members were leading that very night.

I met the team around 9:00 P.M. at the designated meeting area. Other "pond novices" like myself soon arrived. It was a cold, rainy night in late March and, I must admit, I wasn't really excited about going. "This is how we weed out the riffraff," said Rick, referring to the weather conditions. "But there might be some good action."

Rick introduced himself and other team members, and reviewed directions to the site we would visit. He mentioned some basic safety issues (primarily regarding the safety of the amphibians we might cross paths with), and made sure every-

one had a good flashlight. Off we went. I didn't know what to expect. Little did I know that I would witness some classic "big night" vernal pond activity.

As we approached the pond, the raucous chorus of Wood Frogs was almost deafening. While we slowly made our

way, a CAVPT team member reminded us to watch our step – literally. This was the height of the salamander migration; we didn't want to flatten anybody. When we arrived at the pool edge we saw salamanders everywhere. It was my first introduction to these nocturnal animals. I was amazed to see glistening, bright yellow-spotted salamanders emerging from

narrow crevices in granite outcroppings and crawling over the damp forest floor towards the pond. In the water, there were dense writhing clusters (called *congresses*) of them. The mass gathering of salamanders and the multitude of frogs calling for mates was incredible. CAVPT members pointed out other activity that we would otherwise have missed: The floor of the vernal pond was busy with







Photo courtesy CAVPT

*CAVPT president Rick Roth records data while surveying a vernal pond habitat. Certification requires locating the pond on a map and documenting the presence of vernal pool species.*

swimming and crawling invertebrates including caddisfly larvae, leeches, and isopods.

I was astonished. Although I'd considered myself a competent amateur naturalist, I was awed and inspired by the wildlife spectacle surrounding me that cold, wet night.

## What are Vernal Ponds?

Vernal ponds are temporary wetlands that support a diverse web of life. They form in confined basin depressions, usually in forested areas, and are filled by snowmelt and rainfall. Pools typically hold water for at least 2-3 months in the spring, and then usually dry out in the summer. Although this period of time is relatively brief, vernal ponds are ancestral breeding grounds for select organisms that rely exclusively on these isolated wetlands to reproduce. Obligate species (those that require a vernal pond to breed) such as the Wood Frog, *Lithobates sylvaticus*, and mole salamanders like the Spotted, *Ambystoma maculatum*, and Blue-spotted, *Ambystoma laterale*, migrate to these pools in the early spring to breed. Another obligate species that spends its entire life in vernal pools is

the Fairy Shrimp, *Eubranchipus vernalis*. Many other organisms rely on vernal pools as breeding habitats and for the abundant food resources they provide.

Another defining characteristic of a vernal pond is the absence of fish populations. Because of their temporary nature, low oxygen levels, isolation (lack of inlets and outlets) and relatively shallow depths (typically 3-4 feet), fish populations, even if introduced, cannot establish themselves in vernal ponds. Although isolated, however, vernal ponds are biologically connected to their surroundings by the organisms that use them. They are therefore a critical feature of the environment, recycling energy that would otherwise be lost back into the surrounding habitat in the form of amphibians, insects, mollusks, and a host of visiting predators.

The primary energy source in a vernal pond is provided by leaves shed from the plant life in and around the pond. This plant matter is the basis of the food web in a vernal pond. Leaf litter is broken down by bacteria and other microscopic organisms, and consumed by insects, snails, various species of worms, and amphibian larvae. These in turn support higher tro-





*The Spotted Salamander, **Ambystoma maculatum**, above, and the Wood Frog, **Lithobates sylvaticus**, below, are the two most common and iconic vertebrate species that require vernal pond habitats in which to breed and develop.*

phic (feeding) levels within and beyond the pool when they are consumed by amphibians (adults and larvae), turtles, snakes, birds, and mammals. Vegetation growing in the pond provides cover and concealment for nesting birds and predators, as well as a substrate (along with fallen tree branches) to which amphibians can attach their egg masses.

Amphibian egg masses are often deposited close to the surface of the water and in the sunniest parts of the pond because the solar heat accelerates development and hatching. In early summer, tadpoles and salamander larvae that survive and metamorphose into adults will emerge from the pool and move into the forest. Most of those that survive to maturity will return the following spring — and often for many springs to come — to find a mate and breed.

## The Early Years

In the early 1990s, people who had a shared interest in the wild areas of Cape Ann began venturing out on rainy nights in March and early April to observe the seasonal wildlife activity associated with vernal ponds. As they learned more about the many species of animals they observed in and around these tempo-

rary wetlands, they realized how little protection was afforded these ephemeral habitats. Several people attended vernal pond workshops offered by Mass Audubon and the Essex County Greenbelt Association. Over the years, CAVPT members have also attended workshops offered by Leo Kinney and Matt Burne, both leaders in vernal pond certification and education. Topics included the ecological significance that vernal ponds hold for forest wildlife communities and



Photo © by Don Slater





*Education and outreach are important parts of CAPVT's mission. This is a CAVPT display at an Earth Day Celebration, featuring volunteers Mason, Julia, and Ron Camille. Below, Cynthia Nichols shows a Bullsnake to the crowd at Halibut Point State Park during a "Snakes of Massachusetts and the World" program.*

the certification process that must be negotiated to provide the ponds with some degree of legal protection. Vernal ponds are certified by MassWildlife's Natural Heritage and Endangered Species Program (NHESP).

As their name clearly indicates, vernal pond habitats are seasonal in nature. A pond that is vibrant and full of life in April can appear to be a useless mud hole or even completely dry 3-4 months later. If an uncertified pond lies in an area ripe for development, it can very easily be filled and lost, dooming all the local, obligate wildlife populations dependant on its presence. Despite exhibiting characteristics of wetlands — including hydric soil, the presence of hydrophytes, and being covered with water during part of the growing season — vernal ponds are not protected by the Wetlands Protection Act. Only pools that have been properly documented and certified (visit [www.mass.gov/masswildlife](http://www.mass.gov/masswildlife) or call (508) 389-6000 to get the necessary paperwork) are protected.

Certification requirements for a vernal pond include marking its location on a U.S. Geological Survey topographic map, and also on an additional map or aerial photo. A GPS unit can make it much easier to locate remote ponds on your

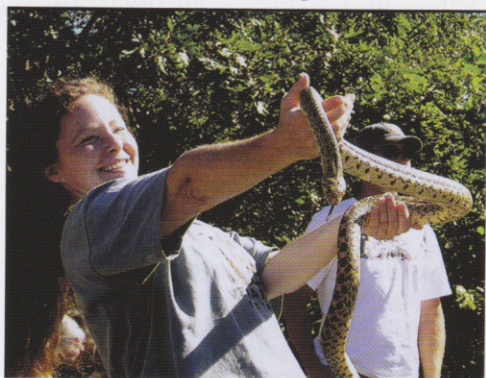


Photo © by S. Cohen

map(s). Evidence of breeding by obligate or facultative (capable of breeding in other types of wetlands) species in the pool must also be provided. (A photo of Spotted Salamander or Wood Frog egg masses in the pool works nicely). The forms provided by NHESP are legal documents and must be filled out and submitted for final approval.

## Creating Awareness

The CAPVT's initial actions as an organized group were to certify vernal ponds and lead pond trips for members of the community. As interest grew and requests to certify ponds for landowners increased, the team also began shifting its efforts to education and outreach. Cer-



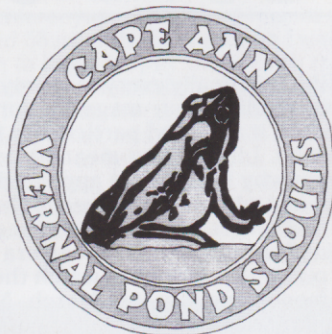
tification workshops are now sponsored seasonally to show citizens and groups how to certify vernal ponds on their own. This relationship between CAVPT and the community has furthered the organization's conservation efforts and raised awareness of the value of these wetlands.

In an effort to promote vernal pond and general ecology education, CAVPT members Jessica Kagle and Nathan Mineo founded Kestrel Educational Adventures (KEA), a non-profit environmental education organization. One of the programs KEA offers is "Ponds in the Classroom." Visiting over fifty classrooms each season, instructors provide creative, interactive games and activities, live animal visits, and field explorations to local ponds. The curriculum correlates with Massachusetts' Educational Frameworks, and is customized for each participating school.

As membership has increased since the inception of CAVPT more than 18 years ago, its role as an organization dedicated to vernal pond conservation and education has expanded. A variety of exhibits and programs are presented throughout the year and include live animals, question and answer sessions, displays, and the 15-minute video, *Vernal Ponds*, produced by CAVPT. The video was shot entirely on Cape Ann and won Merit Awards for Educational Value and Conservation Message and Photography at the International Wildlife Film Festival in Missoula, Montana in 2001. Over the years the Cape Ann Vernal Pond Team has become a permanent fixture at libraries, state parks, Earth Day celebrations and other conservation events. There is now a program for Girl and Boy Scouts to earn a Vernal Pond Scout Patch by meeting certain requirements. It was developed by team member Gloria Parsons and her Gloucester Troop 85 leader scouts. CAVPT also offers a special live animal program, "Snakes of Massachusetts and the World." Working on a shoestring budget, the team publishes an annual newsletter and maintains a web site, [www.capeannvernalpond.org](http://www.capeannvernalpond.org) and continues its conservation efforts.

CAVPT has been helped along the way by countless individuals and organizations who share its vision for conservation and education. Funding is primarily

*To view scout patch requirements please visit: [www.capeannvernalpond.org](http://www.capeannvernalpond.org) and click on the vernal pond patch link.*



through private donations and small grants from local institutions for various projects. An annual yard sale is held and, due to the support of many Cape Ann residents, is always successful. The organization has recently incorporated and gained non-profit status.

Through CAVPT's displays and workshops, the idea is emphasized that conservation and protection of vernal ponds lies in large part in the hands of individuals. The origin of the team was the result of people who came together with a common interest and felt that vernal ponds were worth the effort to preserve. They weren't experts then (and most of them would not claim to be experts now) but this small, dedicated group formed a thriving conservation organization that is now well known in the Cape Ann area and beyond.

As CAVPT President Rick Roth says: "The Cape Ann Vernal Pond Team mission statement is: We are dedicated to vernal pond conservation and education. Our focus is vernal ponds. The issue is the preservation of wildlife habitat, which is ultimately about the health of the planet. We have protected vernal ponds and created awareness in our community. If we can do it, you can do it."

Please look at our website at [www.capeannvernalpond.org](http://www.capeannvernalpond.org) for more information about the Scout program, vernal pond certification, events, our newsletter, and more.



*Nick Taormina contacted CAVPT while researching his thesis at Lesley University. He is a carpenter, a resident of Gloucester, and current President of the CAVPT Board.*