

# A NEWSLETTER

from the

## CAPE ANN VERNAL POND TEAM

Winter/Spring 2014

Website: [www.capeannvernalpond.org](http://www.capeannvernalpond.org)

Email: [cavpt@yahoo.com](mailto:cavpt@yahoo.com)

THE CAVPT IS A HOPELESSLY NON-PROFIT VOLUNTEER ORGANIZATION DEDICATED TO VERNAL POND CONSERVATION AND EDUCATION SINCE 1990.

## Volunteers Needed

By Nick Taormina

Over the past decade of my involvement with Cape Ann Vernal Pond Team, I have been amazed by the stream of individuals and families who have graciously shared their time with the organization. Along with our seasoned veterans, new faces come forward each year to fill the needs associated with this non-profit outfit. CAVPT relies on volunteers to assist with running programs, staffing displays, and sharing our love of wildlife and the natural habitats of Massachusetts.

I know what you're thinking...



...you  
want to volunteer for CAVPT

Photo by Colleen Anderson

We thank these people and their families for their generous support and presence. This call to duty goes out to the rest of you. Want to be part of something great? We're talking to you. CAVPT has been working to increase its membership and expand its role within the community, but to do this requires revenue and a lot of volunteers. That's why we need you. Do you enjoy spending time in the woods and wilds of Cape Ann? Then perhaps vernal pool certification is just your thing. Maybe you would like participating with field trips and presentations.

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## DID YOU KNOW...?

by Nathan Mineo

Did you know that spotted salamander embryos have a symbiotic relationship with algae? This isn't really breaking news; biologists have known of this relationship for quite some time. Victor Hutchison and Carl Hammen (1958) discovered that spotted salamander embryos obtain oxygen from the algae, *Oophila amblystomatis*, which grows within the gelatinous matrix of salamander egg masses. Most aquatic organisms' egg-bound embryos obtain oxygen from the surrounding water by diffusion. Salamander embryos are no different, but they get an added boost of oxygen from the photosynthesizing *O. amblystomatis*. Remember, vernal pools are very low in oxygen, so this added oxygen from the algae makes life a little easier for the salamander embryos. Hutchison and Hammen also found that something more than oxygen from the algae, a "growth-stimulating substance" perhaps, was responsible for the increased growth, increased hatching size, and increased survival of salamander larvae. But what...?



Fast forward to 2013, and we know A LOT more! Multiple studies have shown a number of benefits enjoyed by salamander embryos hosting this algae. For starters, it inhibits bacterial growth, which is a major killer of salamander embryos. Also, not only does the algae grow within the matrix of the egg mass, it surrounds and even penetrates the individual eggs. That alone is pretty amazing, but what about the "growth-stimulating substance"? To understand that, we need a quick biology refresher.

Carbon and nitrogen are excreted by animals (like salamander embryos) in the form of inorganic molecules. This carbon and nitrogen waste is used by algae and converted back into organic molecules (essentially food) that can be used again by animals. This is called fixation. We know the process of carbon fixation by the name photosynthesis, which also produces oxygen as a byproduct of carbon fixation.

Salamander embryos are animals and, in order to grow, need a supply of nutrients and must excrete waste. *O. amblystomatis* removes and uses the carbon and nitrogenous wastes excreted by the embryos. The inorganic carbon, in the form of carbon dioxide (what we animals exhale), is photosynthesized by this algae and turned into food and oxygen which is directly used by the salamander embryos. It's as though *O. amblystomatis* is feeding the live embryos while they are still in their eggs! This is how embryos in egg masses with the algae develop faster than embryos without it. It is very rare to find a salamander egg mass that does not have this particular algae. In fact, most embryos in masses lacking *O. amblystomatis* end up dying. The embryos are almost dependent on the algae for survival.

This type of symbiotic relationship is well known among invertebrates, but it was unheard of among vertebrates until recently. Erin Graham and colleagues were the first to publish a paper, in 2013, showing evidence of a symbiotic relationship where fixed carbon is directly transferred from a photosynthesizing organism to a vertebrate host. So next time you visit a vernal pool, take a look at the salamander egg masses. Chances are the eggs are tinted green with *O. amblystomatis*, and the embryos inside are receiving nutrients directly from the algae.



Are you technologically proficient? Well versed in the area of accounting and budgets? Or can you lick a stamp and stuff an envelope?

There is ample opportunity for anyone interested in volunteering. We need help with the newsletter and fundraising events. There are seats on the Board of Directors that may interest you and for which you may be qualified. And we always need more people who are comfortable handling animals when we work with education centers and schools to present our vernal pool and snake programs.

You may think you need to know all about vernal ponds in order to help out, but there are many tasks to be done – enthusiasm is all you need! If you have time to spare, even a small time commitment, please step forward and answer this call for a rewarding and super fun experience. We have a place for you.

Why do you need even more volunteers? CAVPT is hoping to grow and flourish as an organization, do better programs and offer more of them, and ultimately open a nature study center on Cape Ann.

Once again we thank those who have supported CAVPT. Here are some of the things we need additional help with:

- Shows and exhibits
- Newsletter contributions
- Field trips
- Mailings
- Fundraising events
- Critter care
- New programs
- Web updates

***We only have one earth, volunteer to save it.***

## ***Fourth Annual Benefit Concert and Silent Auction***

Everyone had a great time! *Entrain* revved up the house with their music and energy. Then there was wild raffle and auction action.

We'd like to thank everyone for their generosity and support, making this a successful and fun event.

Check the CAVPT website and our Facebook page for 2014 concert info.



***Our concerts  
have it all...***



## Music!

## Fun!



## Dancing!



### ***Special Thanks to Our Generous Sponsors***

Granite Savings Bank  
NE Herpetological Society  
Animal Crackers  
Geoffrey H. Richon Construction  
Rockport National Bank  
Landmark School  
Woodturning Online  
Wolf Hill Garden Center  
TD Bank  
Walker Creek Garden Design  
Cape Ann Savings Bank  
Woodman's of Essex



## Auction!



## Certification

It was another productive year on the certification front. CAVPT submitted vernal pool surveys for ten pools to the Natural Heritage and Endangered Species Program. And we're doing fieldwork on several others (another great volunteer opportunity!). Pools were found on Cape Ann and field work was done in the Braintree Conservation Area as well. Thanks to all the volunteers who helped in these efforts: Sam Bevins, Marla Brinn, Matt Burne, Joe Martinez, Richard Roth, Kurt Schatzl, and Nick Taormina. Funding was provided through the William P. Wharton Trust and the EnTrust Fund. We appreciate their generosity.

Vernal pond certification is a time-sensitive activity (documentation needs to occur when egg masses are present in early spring). If you know of any pools in or around Cape Ann, please contact us soon at [cavpt@yahoo.com](mailto:cavpt@yahoo.com).

## Field Trips

In the early spring CAVPT leads nighttime field trips to vernal ponds to see the breeding activity of spotted salamanders, wood frogs, and spring peepers. We often see other animals as well, including fairy shrimp, water bugs, leeches, newts, and other frog species. On daytime field trips we are usually in search of spotted salamander and wood frog egg masses and/or fairy shrimp to photograph for the purpose of vernal pond certification - the process by which these wetlands are protected.

CAVPT complements its late winter/early spring classic vernal pond field trip with a summertime foray. While it's always impressive to be out at night and see the spectacle of the breeding activity and animals on the move, it's equally impressive to see the results of this early season action as they emerge from the pool.

Last year we led two summertime field trips. Wood froglets often emerge from the pools by the hundreds in early summer. They are miniatures of the adult frogs that can fit on a thumbnail. At the same time we find larval spotted salamanders in the pools. They still have gills, which look kind of like bushy fern plants growing out of their necks. We often see other frogs, snakes, and other forest denizens at this time.



Photo by Rick Roth

In the late spring or early summer we took a trip to see the breeding activity of the ebony jewelwing, a beautiful damselfly with black wings and an iridescent blue-green body. (pictured above) We saw these damselflies feeding, breeding, and laying eggs. Not a vernal pond species (they need fast moving water to lay eggs in) but they're so cool we just want to give people an opportunity to see them anyway.

These field trips are a great way to witness how a food web works and how the productivity of vernal ponds play a significant role within the upland habitat.

## FEATURED CREATURE

### Eastern Ribbon Snake

**SCIENTIFIC NAME:** *Thamnophis sauritus sauritus*

**SIZE:** Adults: Two feet or more Record: 38"

**LIFESPAN:** Unknown

**RANGE:** Most of the Eastern US

**DIET:** 90% frogs, toads, and salamanders. Usually small or metamorphosing individuals.



Photo by Colleen Anderson

*The charming and vivacious ribbon snake*

#### DESCRIPTION:

- **Habitat:** Semi-aquatic, prefers areas with brushy vegetation at the edge of fresh water wetlands for concealment. One of the more common snakes found in and around our local vernal pools (all snakes can swim).
- **Abundance:** Generally common. Hibernate underground from October to March.
- **Breeding:** After emergence from hibernation. Young are born live from July to September.
- **Similar species:** Garter snake (also genus *Thamnophis*). Ribbons are more slender, have a bolder pattern, longer tails, and the lips are unpatterned.
- **Comments:** An agile, nervous snake, seldom wanders more than a few hundred feet from water. Fleeing ribbon snakes skirt shorelines, threading their way through vegetation, disappearing from sight with amazing speed.

References: *Peterson Field Guide to Reptiles and Amphibians-Eastern/Central North America*, Roger Conant. *Audubon Field Guide to New England*, Peter Alden & Brian Cassie. *Amphibians and Reptiles of New England, Habitats, and Natural History*, DeGraaf and Rudis.

### Maritime Gloucester

Maritime Gloucester is happy to support crepuscular and nocturnal vernal ponders through use of its bulk-mailing permit. Maritime Gloucester has something for everyone – maritime history, a locally-stocked aquarium, sails on the Schooner *Ardelle*, science education, beautiful views of the harbor, gorgeous museum shop, and more. Visit them Memorial Day through October at 23 Harbor Loop, Gloucester. [www.maritimegloucester.org](http://www.maritimegloucester.org)



**Don't miss any of our exciting upcoming events!**  
check out our website at:

[www.capeannvernalpond.org](http://www.capeannvernalpond.org)

and Like Us  on Facebook

## Ileen Graham

This newsletter is dedicated to Ileen Graham who passed away in July 2013. She was a force in the Cape Ann Vernal Pond Team for ten years until health issues curtailed her involvement. Ileen loved being involved in community activities and didn't limit her volunteerism to CAVPT.



Photo by Sharon Cohen

Inset Photo by Rick Roth

She worked to organize the opening of the Visitor Center at Stage Fort Park, the Maritime Heritage Trail, Gloucester Pride Stride and more. Her CAVPT activities included, but were not limited to, the newsletter, website creation, incorporation (which she basically did single-handedly), bookkeeping, field trips, and presentations. Ileen's energy and efforts helped CAVPT to grow substantially as an organization. She was a good friend to many team members and will be greatly missed.

## Rainy Nights and Flashlights

Every spring CAVPT members lead nighttime field trips to the ponds to see the amphibian-breeding activity. Check your flashlights, get new batteries, and put your rain gear on the hook by the door. To avoid habitat destruction and critter disturbance, we limit the number of participants on each trip. We also ask that you leave your dog at home. Interested? Email us at [cavpt@yahoo.com](mailto:cavpt@yahoo.com).

### Grants & Donations

#### In 2013 We Received Grants From:

- New England BioLabs Corporate Donations, \$1,000
- The EnTrust Fund, \$50,000 (no, that's not a misprint)
- The William P. Wharton Trust, \$2,000

Thanks to everyone who responded to our annual appeal with generous donations, and to those who donated throughout the year.

We are proud and oh so grateful to have over fifty volunteers generously donating their time and energy to make CAVPT grow and flourish.

The CAVPT newsletter committee is powered by

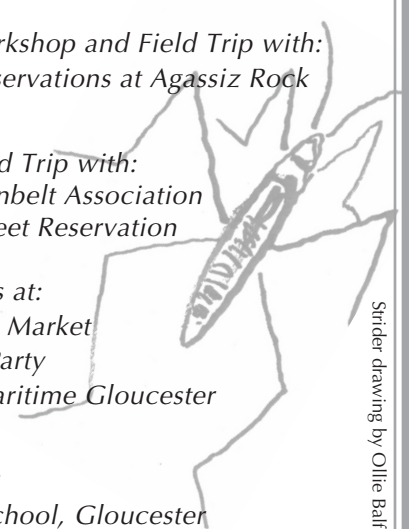


**Delaney's**  
PIZZA

332 Main St., Gloucester  
978-282-7878

## Last Year We...

- Led our usual nighttime vernal pond field trips
- Worked on vernal pond certification
- Presented "Intro to Vernal Ponds" at:  
Cape Ann Discovery Center at  
Ravenswood, Gloucester
- Presented "Snakes of New England and the World" at:  
EarthFest at Lynn Woods  
Halibut Point State Park, Rockport  
Harold Parker State Forest, Andover  
Pathways for Children, Gloucester  
Riverfest, Great Meadows, Sudbury  
Sawyer Free Library, Gloucester  
Townsend Public Library  
Wompatuck State Park, Hingham
- Presented Vernal Pond/Snake Exhibits at:  
Endicott College Earth Day Music Festival, Beverly  
Gloucester Pride Stride  
Gloucester Sidewalk Bazaar  
Magnolia Street Fair, Gloucester
- Held a Vernal Pond Workshop and Field Trip with:  
The Trustees of Reservations at Agassiz Rock
- Held a Vernal Pond Field Trip with:  
Essex County Greenbelt Association  
at the Thompson Street Reservation
- Presented Snake Exhibits at:  
Cape Ann Farmers' Market  
Gloucester Block Party  
Heritage Day at Maritime Gloucester
- Visiting Scientist Day at:  
O'Maley Middle School, Gloucester



Snake drawing by Ollie Balf

### We Want Your Stuff.

#### And your friends' stuff. And your relatives' stuff...

CAVPT and Kestrel have combined forces over the past three years to put on fabulous and profitable yard sales.

Fundraising is an ongoing project but an event such as this brings in money that is not earmarked for specific uses as are most grants. The money raised can go directly to overhead expenses like rent, insurance, and animal care.

Believe it or not, spring will come – clean out those closets, garages, storage units, and sheds. Drop your stuff off at St. Peter's Parking lot (Rogers Street, Gloucester) on Saturday May 24th between 7:00 and 9:00 A.M. Check emails, our website, and Facebook for further information (like a rain date).

Oh, and by the way, this is another great opportunity to volunteer!



# If we value wildlife, we must protect vernal ponds.....

## What a CAVPT membership offers:

- A really neat CAVPT car decal
- Subscription to our annual newsletter
- Email updates of vernal pond activities and events
- Guided field trips to local vernal ponds
- The satisfaction of knowing you are helping preserve these unique and vital habitats

## Our programs & activities include:

- Vernal pond certification
- Exhibits & presentations
- Daytime & nighttime field trips
- Certification workshops
- Posters
- "Vernal Ponds" video
- Website: [capeannvernalpond.org](http://capeannvernalpond.org)
- Scout patch program
- Snakes of New England & the World

Salamander linoleum cut by Isabel Natti

For school programs, including Ponds in the Classroom, contact our sister organization, Kestrel Educational Adventures: [www.kestreleducation.org](http://www.kestreleducation.org).



Photo by Vanessa Johnson

Checking out a wood frog egg mass on the Thompson Street Reservation field trip for Essex County Greenbelt Association.

## The funding for our programs is provided by:

- Corporate gifts
- Grants
- Sale of our merchandise
- Donations from community members like you
- Memberships

CAVPT thanks the following organizations and foundations for their generous support over the years:

The EnTrust Fund • The Norcross Wildlife Foundation • GoodSearch  
New England Herpetological Society • Sweetwater Trust • TD Bank  
Toad Hall Bookstore • Gloucester Cultural Council • Sam Park & Company  
New England BioLabs • The Bellevue Fund • The William P. Wharton Trust  
New England Grassroots Environment Fund

## Support the Cape Ann Vernal Pond Team. Become a member or renew today!

The Cape Ann Vernal Pond Team is a non-profit volunteer organization dedicated to vernal pond conservation and education since 1990. Our focus is vernal ponds. The issue is the preservation of wildlife habitat, which ultimately is about the health of the planet.



Photo by Lysa Leland

At the Cape Ann Farmers' Market everyone enjoyed meeting our live snakes and painting wooden ones with the crew from Cape Ann Art Haven.

CAVPT is a 501(c)(3) non-profit organization  
your contribution is tax deductible

[www.capeannvernalpond.org](http://www.capeannvernalpond.org)

Name \_\_\_\_\_

Street \_\_\_\_\_

City, State, Zip \_\_\_\_\_

(address required if paying by credit card)

Phone \_\_\_\_\_ Email \_\_\_\_\_

☐ Send me email updates about field trips and events

☐ Yes! I'd like to be a volunteer

☐ Lifetime Membership \$200

### Annual Membership

☐ Individual \$20 ☐ Family \$35 ☐ Junior (under 16) \$10

☐ Additional donation \$ \_\_\_\_\_

☐ Check enclosed: \$ \_\_\_\_\_ Payable to: Cape Ann Vernal Pond Team

☐ Charge my credit card (Visa, MC, Amex, Discover)

CC # \_\_\_\_\_

exp date \_\_\_\_/\_\_\_\_ CVV code (on back of card) \_\_\_\_\_

Signature \_\_\_\_\_

(required if paying by credit card)

Please detach this form and mail with your donation to:

Cape Ann Vernal Pond Team

P.O. Box 12, Rockport, MA 01966



Cape Ann Vernal Pond Team  
P.O. Box 12  
Rockport, MA 01966

Return Service Requested

Non-Profit Organization  
U.S. Postage  
**PAID**  
Gloucester, MA  
Permit No. 21



Block print by Isabel Natti

## ***The Need for Protection...***

The temporary nature of vernal ponds often belies their importance. Countless plants and animals live in vernal ponds. Insects, amphibians, reptiles, birds and mammals visit to drink, feed, breed and nest. Some species, such as spotted salamanders, wood frogs and fairy shrimp are totally dependent on this habitat.



Photo by Nathan Milne

Come see us this spring! CAVPT leads nighttime field trips to witness the annual migration and breeding of wood frogs and spotted salamanders...see inside, or our website, for more details.

## ***How to Protect...***

The best way to protect vernal ponds is to own the property. The next best way to protect them is to certify ponds with the Natural Heritage & Endangered Species Program. Certification application reports include photographs, maps and field observation forms. To learn more go to [www.capeannvernalpond.org](http://www.capeannvernalpond.org) or check out the Vernal Pool Association's website at [www.vernalpool.org](http://www.vernalpool.org)



Monarch print by Isabel Natti

