



Wetland Trumpeter

Newsletter - February 2018

Our Mission

Ohio Wetlands Association is dedicated to the protection, restoration and enjoyment of Ohio's wetlands and associated ecosystems through science-based programs, education and advocacy.

JOIN US!

VERNAL POOL WORKSHOPS

Saturday, March 17, 2018
9 a.m. - 4:30 p.m.

Stratford Ecology Center
3083 Liberty Road, Delaware, OH

Saturday, March 24, 2018
9 a.m. - 4:30 p.m.

Brukner Nature Center
5995 Horseshoe Bend Rd, Troy, OH

DISCOVERY DAYS

Saturday, April 7, 2018
10 a.m. - Noon

Dr. James K. Bissell Nature Center
Grand River Conservation Campus
Rock Creek, OH

Friday, June 1, 2018 at 1:30 p.m.
Saturday, June 2, 2018 at 9 a.m.

Coyote Run Farm
Pickerington, OH

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What is Biodiversity?

By Ray Stewart

The term biodiversity first appeared in a publication in 1988, when entomologist E. O. Wilson used it as a title. The word is a simple contraction of 'bio' meaning 'life' and 'diversity' the many different forms. Earth is host to a staggering array of life forms. Current estimates say that 8.7 million species exist: 2.2 million in the oceans and 6.5 million on land. Fewer than 2 million species have been well documented and described with scientific accuracy. The best known group of organisms are the chordates, animals with backbones. This includes the familiar mammals, birds, reptiles, amphibians and fishes. But the number of all these species combined is less than 100,000, with verifiable documentation closer to 65,000.

In the world of animals, the invertebrates dominate in both numbers and diversity. There are close to 1.4 million described species of invertebrates where the insects rank among the most diverse. Of the roughly 1 million recognized species of insects, beetles alone account for more than a third. Since invertebrates are small and reside in many hidden places, deep under water, between grains of sand and within the tissues of other living things, their numbers and diversity may be many times that which is known today. Some estimates predict that there are possibly five million kinds of insects, four times more unknown species than currently listed by scientists.

These numbers are not just tallies on a spreadsheet. None of these



Ailanthus Web Moth on Sedum sp

organisms lives in isolation. Each one contributes to a fabric of life in ways that science is only beginning to discover. Each living thing requires resources, energy, nutrition and gas exchange with its surroundings. Each one has an influence within its realm and alters the realm of other life forms. The web of life is complex, enumerating the magnitude of biological diversity is only the beginning.

Humans are a part of and dependent on this spectacular fabric of life. We can see quite clearly that we need agricultural products; corn, wheat, beans and the few dozen major food and fiber products that come from farms. It is not so easy to see our connection to beetles, copepods and fairy shrimp. It stretches our imagination to understand why we need so many small and distant creatures to assure our own well-being.

In the book *Biodiversity*, E.O. Wilson writes, "The drive toward perpetual expansion—or personal freedom—is basic to the human spirit. But to sustain it we need the most delicate, knowing

(Continued on page 3)

A Plant to Thrill: Virgin's Bower (*Clematis virginiana*)

By Mark Dilley

Editor's Note: Board Member Mark Dilley delivered a presentation at the 2016 Flora Quest conference with the title "Wetland Plants: Twenty to Thrill, Five to Kill." He will be sharing details of select plants from this talk in a series of articles for the OWA newsletter.

Virgin's Bower, Ohio's only existing native *Clematis*, is a member of the Buttercup Family (*Ranunculaceae*). Its relative, *Clematis occidentalis*, is presumed extirpated. This vining plant can cover large areas, blanketing other plants and producing an abundance of showy white flowers in mid- to late summer. Although not often recognized as a wetland plant, it is considered a facultative wetland species that often occurs sunny openings in Ohio floodplains. It also flourishes in sun-drenched areas with moist soil, conditions that are commonly found around the perimeter of deeper marsh areas that are too wet for trees.

Once the flowers go to seed, the appearance of the plant changes considerably, as a long pappus of branching hairs form



Virgin's bower in bloom.



Virgin's bower in seed.

atop each seed (similar in function to the familiar fluff of a Dandelion). The long, fuzzy seed structures have resulted in other unusual names for the plant, including Devil's Darning Needles, Prairie Smoke on a Rope, and Old Man's Beard.

This plant's abundant flowers attract bees and hummingbirds who serve to pollinate the flowers. As one might suspect from the dandelion analogy, Virgin's Bower's seeds are spread by wind. In addition, seeds can be spread by wildlife, which may get the long pappus caught in feathers or fur. These seeds eventually drop off the animal, aiding in the plant's re-distribution.

In addition to its beauty, this *Clematis* also has some interesting cultural connections. Anthropologists have learned that Native Americans, particularly the Iroquois, had some interesting medicinal uses for Virgin's Bower. An extract of the stems was used as a wash to induce strange (hallucinogenic) dreams and, in stark contrast to the plant's name that evokes a notion of chastity, an infusion of the plant's roots was also used to treat symptoms of venereal disease!

OWA BioBlitz 2018 @ Coyote Run Farm

Ohio Wetlands Association invites interested naturalists to join our second-round effort to observe, discover and report on the diversity of all living things on the Coyote Run Farm. The owners of this property are devoted to protecting and restoring the habitat where they live and the land around them in perpetuity. OWA strongly supports their efforts. Wetland restoration projects are currently underway. Add your interest and expertise to our project.

Save the dates! Friday June 1 and Saturday June 2, 2018 at Coyote Run Farm, 9270 Pickerington Road, Pickerington, Ohio.

Come for a short stint or hang out for the full two-day event. Early birding activities will begin at 6 am. After hours mothing, owling and {bat}ing will be supported by campfire. Bring a camper or tent and stay over Friday night if you like. Some food, drinks and snacks will be provided.

Registration is required, but FREE! Just sign up at <http://www.ohwetlands.org/bioblitz-2018.html>. You will be sent periodic updates. Participants are asked to use iNaturalist to report observations (alternate methods accepted). With our first-round bioblitz effort in 2017, we have over 1300 observations and 625 species. With your participation we will confirm and expand this dataset in 2018.

For specifics, see <https://www.inaturalist.org/projects/coyote-run-farm> or email Ray@OHwetlands.org

Join the OVPN fb Group

If amphibians and macroinvertebrates tempt you, stop by Facebook and join the banter - sometimes technical, other times poetic or even whimsical. To become an Ohio Vernal Pool Network (OVPN) group member on Facebook, just ask, then answer a couple simple questions.

OVPN exists to provide educational resources, opportunities and experiences to further the understanding, protection and enjoyment of Ohio's hidden wonders found in the precious seasonal wetlands we call Vernal Pools. Post your

questions and discoveries. Let's solve the mysteries together. Our team is here to assist OVPN affiliates and group members with any questions regarding Ohio vernal pools, workshops, discovery days, expeditions and how you can build your own capacity to teach others.

So, join the conversation. Share photographs. Ask questions. Solve mysteries. Spread your enthusiasm with others who recognize the hidden wonders that kick off the field season with a variety of life seen nowhere else.



What is Biodiversity ?

(Continued from page 1)

stewardship of the living world that can be devised." It's hard to know just how it would affect us when any given species becomes extinct.

Aren't we doing OK without passenger pigeons? It's hard to say. What happens to all those acorns that are no longer eaten by pigeons? How does that affect the mix of tree species in a hardwood forest a few hundred years down the road? What about the other creatures that feed on those acorns, will they expand out of proportion? Will there be fewer maple trees or beech trees when all those extra acorns sprout up and become giants themselves? What about the predators who took passenger

pigeons as prey? Do these things matter? Let's face it, we just don't know.

Until we can foresee how one thing leads to another it is prudent to act cautiously. Conservation of biodiversity is the wise path because, as humans, we may not be smart enough to fully understand the consequences of our actions. Wetlands are the most biodiverse habitats in Ohio and indeed in most of the temperate zone. You would have to look to tropical rain forests and coral reefs to find more diversity. Thank you for helping us at OWA champion the highest level of protection for wetlands and the rich biodiversity that they support.

The Ohio Vernal Pool Network has legs, so to speak, not unlike an amphibian maturing from its fish-like larval stage. The expansion of this program is now reaching beyond the spring workshops that our members and others have enjoyed for 15 years or more. Separate from the Ohio Wetlands Association social media and website we now have a new URL creatively crafted as:

www.ohiovernalpoolnetwork.org

Be sure to visit the other OVPN web platforms too:

iNaturalist - <https://www.inaturalist.org/projects/ohio-vernal-pool-network>

FB Group - <https://www.facebook.com/groups/283913335465992/>



Ohio Vernal Pool Network 2018

By Ray Stewart



The Ohio Vernal Pool Network (OVPN) (previously the Ohio Vernal Pool Partnership), is a collaborative effort organized by the Ohio Wetlands Association (OWA) and the Midwest Biodiversity Institute (MBI), with a growing network of affiliates. Its purpose is to provide educational resources, opportunities and experiences to further the understanding, protection and enjoyment of Ohio's hidden wonders found in the precious seasonal wetlands we call Vernal Pools.

The 2017 workshops were a great success, with record attendance of nearly 120 people overall. The follow-up expeditions were also well attended, and are a great way to see what is going on in the pools later in the season. The OVPN has two workshops in March of 2018 to provide an informative and enjoyable overview of these wetland gems within Ohio's landscapes.

2018 Vernal Pool Workshops – Registration is open!

Under the **EVENTS** tab see: www.ohwetlands.org/vernal-pool-workshops.html:

- March 17, 2018; Stratford Ecological Center, Delaware Ohio
- March 24, 2018; Brukner Nature Center, Troy Ohio

Discovery Expeditions are free and open to the public but registration is recommended.

2018 Vernal Pool Discovery Expeditions:

- April 7, 2018; Grand River Conservation Campus, Rock Creek, Ohio
- June 2, 2018; Coyote Run Farm, Pickerington, Ohio

What is a vernal pool?

Vernal pools are shallow, temporarily flooded, digressional forested or forest edge wetlands that are typically dry for most of the summer and fall. These wetlands are generally inundated in the late winter and spring when they are subject to a burst of biological activity, including amphibian breeding. Flooded vernal pools are often comprised of areas of open water or with dense shrubby pockets of buttonbush. They are fueled by accumulated leaf litter, tree limbs and other organic debris cumulatively referred to as detritus.

Interested in joining the OVPN?

We are expanding the program to reach more people each year. At the heart of this effort is the development of a train-the-trainer program. We are building a "tool kit" that will be offered to education network affiliates with everything needed to produce their own vernal pool workshops. The tool kit will include copies of the vernal pool field guide, Ohio's Hidden Wonders, and Vocal Calls of Ohio Frogs and Toads digital files. Under development are a series of PowerPoint presentations based on those offered at our workshops. OVPN will also help our partners with promotion and marketing. Contact: ovpn@ohiovernalpoolnetwork.org

The Ohio Vernal Pool Network would like to extend a special thank you to the Ohio Environmental Education Fund and the Columbus Zoo and Aquarium for their support.



Vernal Pool Discovery Day with the Nature Conservancy

In 2017 one of our vernal pool workshops was at the Grand River Conservation Campus in Ashtabula County. We had a record attendance and field trips into some of the richest vernal pool complexes in Ohio. We were delighted to work with The Nature Conservancy (TNC) and appreciate the use of their facilities.

More recently, TNC has opened the Dr. James K. Bissell Nature Center. The center features exhibits for both adults and children depicting the natural history of Morgan Swamp Preserve and the Grand State Wild & Scenic River. I encourage everyone with an interest in wetlands, nature and outdoor recreation to visit.

Closed for the winter, the Nature Center will reopen this spring on April 7, 2018. OWA will co-host this season opening by offering a public Vernal Pool Discovery Day at the conservation campus. Join Ray Stewart, from the Ohio Wetlands Association, to learn more about these special pools, and how you can help monitor pools in your neighborhood.

Location: Dr. James K. Bissell Nature Center at the Grand River Conservation Campus: 3973 Callender Road, Rock Creek, OH 44084.

Activities start at 9 a.m. and include vernal pool presentations, lunch on your own, exploring nearby vernal pools and a look at the creatures found in the pools. The day concludes at 3 p.m. with a family walk to visit a near by pool. Visit www.OhioVernalPoolNetwork.org for details.

Registration is required - please email us at bissellnaturecenter@tnc.org for more information or to register for this event. *Children 17 years or younger must be accompanied by an adult.

Dr. William Mitsch, OWA Director, Speaking in Ohio

March 22, 2018 at 4 p.m.

The role of Wetlands in Mitigating Pollutants in our Landscape and Globe

School of the Earth, Environment and Society (SEES)
Seminar Series

Bowling Green State University,
Room 123 Overman, Bowling Green, Ohio

April 6, 2018 at 11 a.m.

Sustainably Solving Legacy Phosphorus and Nitrogen in Landscapes with Wetlands and Wetlaculture

Appalachian Watershed Research Group
Ohio University, The Ridges BLDG 21 Leadership Room,
Athens, Ohio

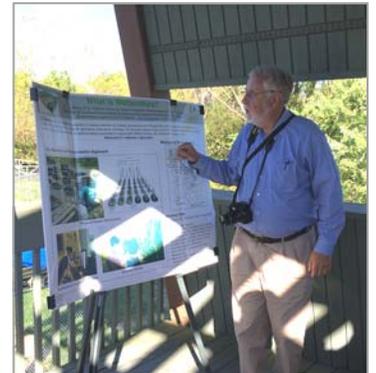
April 6, 2018 at 3 p.m.

Sustainably Solving Legacy Phosphorus and Nitrogen in Landscapes with Wetlands and Wetlaculture

Environmental Science Graduate
Program Lecture Series, 3150
Smith Lab, The Ohio State
University, Physics Research
Building, Smith Seminar Room,
Columbus, Ohio

May 10, 2018

Ohio Stormwater Conference
Kalahari Resort, Sandusky, Ohio



Arc of Appalachia 2018 Wildflower Pilgrimage



**Arc of
Appalachia**

April 13 – 15, 2018 Friday Evening – Sunday Afternoon

Ohio Wetlands Association is partnering with Arc of Appalachia on this major spring welcoming conference. The dual theme features wildflowers and amphibians, "Flowers & Phibs". The theme will highlight vernal pools where an amazing assortment of water sensitive spring wildflowers and highly focused amphibians come to breed and lay eggs in these seasonal wetlands.

The **Saturday Evening Presentation** is *"AMPHIBIANS: Mythbusting and True Facts"* with Doug Wechsler; **Including an introduction by Ohio Wetlands Association.**

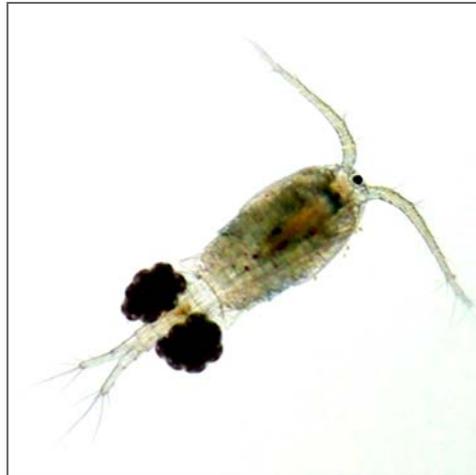
OWA directors, Mick Micacchion and Ray Stewart will be co-leading field trips to add their insights and knowledge to the occasion.

<http://arcofappalachia.org/wildflower-pilgrimage-schedule/>

Won't you join us for this celebration of spring's arrival to some of the richest habitats in southern Ohio!

Copepods Feed the World By Ray Stewart

Copepods are a large group of zooplankton macroinvertebrates commonly found in vernal pools. Actually, they are found in all freshwater and saltwater environments around the world. Copepods are thought to have roamed the oceans since early in the evolution of multi-celled life, perhaps splitting off from other arthropod kin half a billion years ago. Since the copepod branch of the tree of life sprouted, they have diversified into many shapes, pioneered complex metabolisms and discovered unique life-strategies in nearly all water based habitats. Science recognizes some 12,000 species under this sub-class. This group is so common, widespread and diverse that they outnumber all other multicellular animals on the planet. Without exaggerating, copepods sustain the world fisheries and in so doing, support and nourish human beings everywhere. Copepods are critical to all watery ecosystems and often indicate the health and functioning of those systems. They are quite abundant in Ohio's vernal pools.



Cyclopoid Copepod

Copepods are quite small. Their size, mostly under 3mm, belies their great importance. Their torpedo shaped bodies have antennae on the head end and a pair of setae on the other. They have swimming legs and a single eye. Females carry their eggs in external sacks.

The major branches (orders) found in Ohio's vernal pools are the Harpacticoida, Calanoida, Cyclopoida. The Harpacticoid Copepods are bottom filter feeders with very short antennae and 2 egg sacs. Usually less than 1 mm in size they are primary consumers

forming a major platform in the aquatic food pyramid. The Calanoid Copepods are also filter feeders with long antennae and a single egg sac. The Cyclopoid Copepods have a wedge body form with intermediate length antennae and double egg sacs. They can be filter feeders, but some are raptorial predators.

If you enjoy life on this planet, thank a copepod!

Where are Ohio's Vernal Pool Amphibians in Winter?

By Mick Micacchion



Ohio vernal pool. Photo by M. Micacchion

It is winter, very cold, snow covers the ground, and ice is on lakes, streams, ponds, and wetlands, including vernal pools. Amphibians are ectotherms and cannot regulate their body temperatures but are reliant on the temperatures of their environments. So how are the

vernal pool amphibians that

will be using wetlands as breeding sites within the next few months spending their winter?

Ohio vernal pool amphibians start breeding as early as late January to early February in some years in southern Ohio counties. However, we see most years that vernal pool amphibians in southern and central Ohio start their breeding in late February or March with populations in northern Ohio breeding in late March to early April. Where and how amphibians are able to survive the winter to make it to their late winter/spring breeding pools can vary by species. Many have developed unique adaptations to the demands presented by winters in Ohio.

Some amphibian species spend the winter underwater in vernal pools and other aquatic resources, below the surface ice. This is true for the leopard frog, *Lithobates pipiens*, American bullfrog, *L. catesbeianus*, and green frog, *L. clamitans*. Within these aquatic resources, they lie on top of the pool bottom or bury themselves partially in the substrates. In the case of the American bullfrog and green frog, this can include their tadpoles. While their metabolism slows down significantly, the frogs and tadpoles can be seen moving around at times even under the ice. These species are able to remove enough oxygen from the water through their skin to remain alive. Visit www.OhioVernalPoolNetwork.org for more . . .

Vernal Pool Monitoring; Night and Day By David Celebrezze



Spring Peeper on ice by D. Celebrezze

When is the best time to monitor a vernal pool? Anytime! A day or night traipse into a vernal pool can rejuvenate you and let you peer deep into another world. However, there are different benefits to monitoring during the day versus at night. Grab your waders (freshly cleaned with a bleach solution to avoid spreading pathogens) and observation tray and let's explore those benefits together!

Day

During the day you can plot your route. This is much safer than stumbling around in middle of the night when it is easy to get turned around in the woods. With daylight you can see--and mark--what path to take through the woods. Once you get to the pool, you can easily see how large it is and where there are any tripping hazards like fallen trees, branches, or the like. Likewise, when you wade into the pool during daylight, you can be aware of any submerged stumps or logs. Remember where these are so when you go back at nighttime you won't trip. Daylight provides better viewing of macroinvertebrates under magnification. This also allows easy photography using your cell phone or other camera. However,

nighttime monitoring provides a vivid look into our vernal pool realm. So let's go back at night.

Night

Nighttime provides protection for amphibians. Those fearful frogs that didn't call during daylight are now singing their hearts out at night. In fact, the spring peepers amass into deafening choruses. Their tiny eyes reflect the light from your flashlight and make them easy to spot. Likewise, the secretive salamanders are livelier. Their "spots" seem to glow a bit under water when they are hit with a beam of light.

Here is a cool fact about the friendly fairy shrimp. Shine your flashlight in the pool and wait a minute, they will be drawn to the light. This is an easy way to see if the pool has fairy shrimp and a good way to get photos or video of them. Other creatures will appear as well—ostracods, daphnia, water mites, water tigers (predaceous diving beetle larvae), chironomid midges, and copepods are much easier to see in the water at night time. Also, the amphibian egg masses and salamander spermatophores are easily seen in the beam of a flashlight. This is important because stepping on them will destroy them. In fact, even kicking up sediment can harm them.

During the day they are very hard to see. You'll also see more spiders at nighttime than during the day. Be careful where you step at nighttime since more creatures will be moving around. So, if you haven't been to a pool before, go during the day at first, then go back at nighttime. Sometimes I think that daytime monitoring is like trying to find Waldo, while nighttime monitoring has arrows pointing to all Waldos. Don't forget to log what you see into the iNaturalist project for Ohio's Vernal Pool Network when you get back to the car (if you didn't already).

Happy monitoring!



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Wetlands for a Better Ohio

February 2018 Issue



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