

# They're ALIVE!

## Vernal pools are springing back!

### What are vernal pools?

Vernal pools are more than just muddy puddles. They're a healthy part of many forest communities in Michigan. They're important as early spring breeding habitat for many amphibians. They're also critical watering holes and food sources for early wildlife when little else is around. The unique plants and animals found in vernal pools contribute to forest diversity!

### What will you learn?

After exploring this topic, you will learn how to...

- ...identify physical features that make up a vernal pool,
- ...describe the difference between a vernal pool and other types of wetlands,
- ...list some critters that are commonly found in vernal pools.
- ...explain why vernal pools are important,
- ...determine where a vernal pool might be located in your own community!

You can also volunteer to monitor these pools through the [Vernal Pool Patrol](#)!

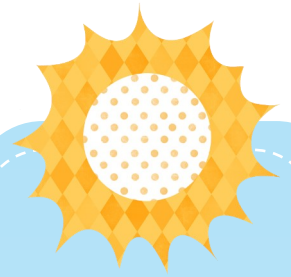
### Let's get started!

Visit the following link, and challenge yourself on your knowledge about vernal pools with some trivia questions:

<https://www.surveymonkey.com/r/vpools>

NEXT, To find the answers to the challenge questions, watch this **BeLEAF It or Not!** video:

<https://www.youtube.com/watch?v=syxEeFcmlVA&t=8s>



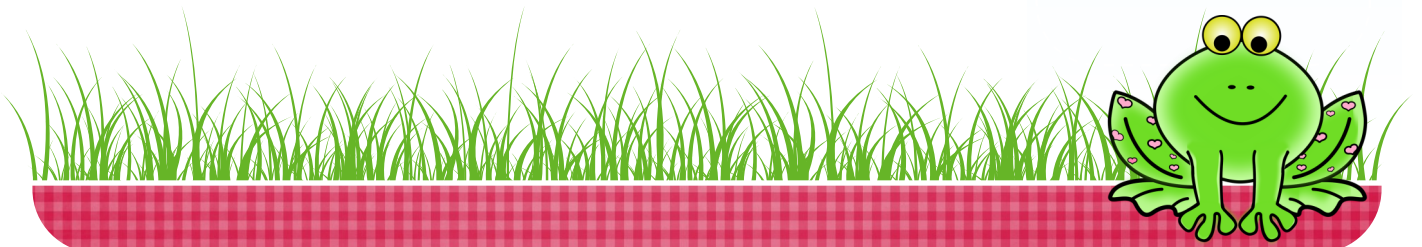
### What is this?

This lesson plan is designed to engage youth in understanding more about Lake States forests and forestry, using a series of YouTube videos titled [BeLEAF It or Not!](#)

Please visit our [channel](#) and subscribe to see the growing list of subjects we cover!

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### What makes them so special?

There are several special kinds of critters that you can find in vernal pools.

Because they're so small (usually less than an acre in size), and hard to detect when there is no water in them, they are often at risk of being drained, filled in, or destroyed by other types of development.

Biologists and other researchers don't even know where all of the vernal pools are located in the Great Lakes! This is why they need your help to identify and monitor these very special features through the [Vernal Pool Patrol!](#)



### More about vernal pools

Over 550 animal species have been documented in vernal pools in northeastern forests (Colburn 2004). Invertebrates comprise the majority of the animal species in vernal pools, with aquatic insects representing one of the largest groups. These include tiny crustaceans, fingernail clams, snails, flatworms, water mites, caddisflies, water beetles, damselflies, dragonflies, mayflies, springtails, mosquitoes, and other kinds of aquatic insects. A number of amphibian species also utilize vernal pools for part of their life cycle. Hundreds if not thousands of frogs and salamanders, such as wood frogs, spring peepers, gray treefrogs, chorus frogs, spotted salamanders, blue-spotted salamanders, and eastern tiger salamanders, migrate to and breed in some vernal pools in the spring.



Many of the animal species that live in vernal pools have developed special strategies or adaptations for dealing with the highly variable and seasonal nature of these wetlands, and for living in

both aquatic and terrestrial habitats. For example, many of the crustaceans and aquatic insects lay eggs that can tolerate drying and/or freezing. Some of these species also lay large numbers of eggs, and only a portion of these eggs hatch in a given year. Many of the invertebrates and amphibians that inhabit vernal pools breed and/or hatch in the pools early in the spring, and grow rapidly so that they can complete their development and/or leave the pools before they dry.

Colburn, E.A. 2004. Vernal Pools: Natural History and Conservation. The McDonald and Woodward Publishing Company, Granville, OH. 426 pp.



## A Cast of Characters

Here are just a few of the very special creatures that you may find in a vernal pool:

### Wood frog

<https://nhpbs.org/wild/woodfrog.asp>



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### Blue spotted salamander

[http://www.biokids.umich.edu/critters/Ambystoma\\_laterale/](http://www.biokids.umich.edu/critters/Ambystoma_laterale/)



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### Fairy shrimp

<https://www.inhs.illinois.edu/outreach/spotlight/fairy-shrimp/>



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### Spotted salamander

[http://www.biokids.umich.edu/critters/Pseudacris\\_crucifer/](http://www.biokids.umich.edu/critters/Pseudacris_crucifer/)



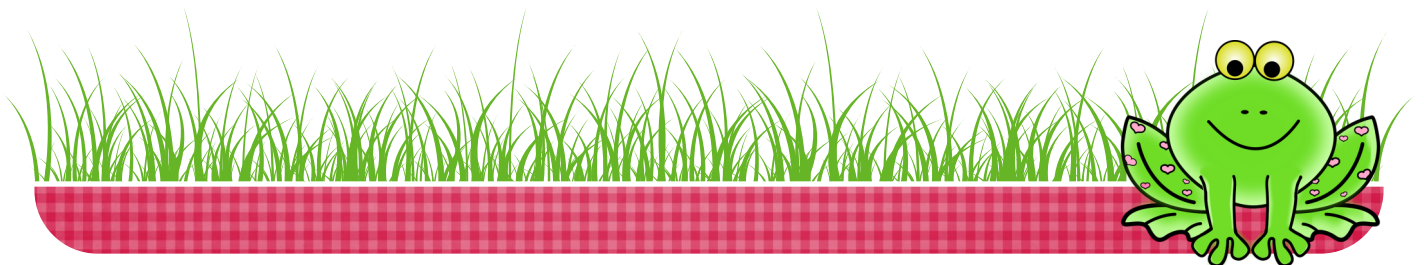
Photo credit: Yu Man Lee, Michigan Natural Features Inventory

## Words to Remember

**Vernal:** Refers to something that occurs in the spring, as in 'vernal pool' or 'vernal equinox.'

**Amphibian:** A vertebrate (animal with a backbone) that is cold-blooded and has an early, aquatic larval stage that breathes with gills, usually followed by a land-dwelling adult with lungs. These include critters like frogs, salamanders, and toads.

**Crustacean:** A class of animal with an exoskeleton (hard, segmented outer shell) that usually lives in the water. These include lobsters, crabs, water fleas, and shrimp—including fairy shrimp!



## Suggested activities

### **Activity 1: Construct your own vernal pool!**

Supplies needed:

Paper

Pencils, markers, crayons or other drawing tools

Create your own vernal pool! What does it look like? What trees grow around it? What kinds of leaves, twigs, logs and other woody material is there? What other plants might be there? What critters are living there?

### **Activity 2: Find a vernal pool!**

Take a look at the woodlands in your community. Take a little walk in them and keep your ears open! Do you hear frog sounds that might be like the species featured above? If so—with permission if necessary—get a little closer to those water bodies.

Suggested supplies: Waders or other waterproof boots, clear or white plastic containers, magnifying glass, small aquatic net

Identification guide (try this one:

<http://www.dnrec.delaware.gov/fw/Education/Documents/AREC/Wetland%20macroinvertebrate%20ID%20cards.pdf>)

Do you think your chosen area is a vernal pool? If so, please take the next step and contact [person at contact info] to let them know! You will be part of the ongoing effort to map the existing vernal pools in Michigan!

#### ***NOTE: Please respect our fellow creatures!***

Most of the amphibians (frogs, toads, salamanders and snakes) that live in or near the pool breathe through their skin. Be sure to wash your hands before visiting the pool and handling any of the creatures so that they don't become ill from hand lotions, sanitizers, etc.

To get a closer look at the creatures in the pool, you can use the net to catch them, and then place them in the plastic bin with some of the water from the pool. Once you are finished checking them out, please be sure you gently place them back in the pool without too much time passing. An easy way to dump what you've found is to lower one corner of the plastic bin into the water and gently pour the water and creatures back into the pool. They will thank you for allowing them to continue their life cycle in their natural habitat!

For more information on Vernal Pools in Michigan, visit the Michigan [Vernal Pool Partnership](#) (MVPP) website!

For even *more* details, the Michigan Natural Features Inventory has a printable document that describes our [Vernal Pools](#).

Enjoy the exploration!

