

For information about all our programs, or to arrange an educational program or group visit, connect with us at:

[www.calvin.edu/go/preserve](http://www.calvin.edu/go/preserve)  
 (616) 526-7600 | [preserve@calvin.edu](mailto:preserve@calvin.edu)

Walking trails are open to the public every day from dawn to dusk.

**Bunker Interpretive Center (BIC) Hours:**

*Academic Year:* M–F 9 a.m.–5 p.m.

*Summer:* M–F 8:30 a.m.–4:30 p.m.

Closed weekends and holidays

Admission to the trails and BIC is free.

Restrooms in the BIC vestibule are available everyday from dawn to dusk.

**Etiquette:**

To ensure your safety and the preservation of our plants and animals, please stay on the trails and respect these rules:



Development and continued support of the Calvin College Ecosystem Preserve was made possible through grants and generous donations.



1750 East Beltline Ave. SE  
 Grand Rapids, MI 49546

# CALVIN

## ECOSYSTEM PRESERVE

### TRAIL GUIDE

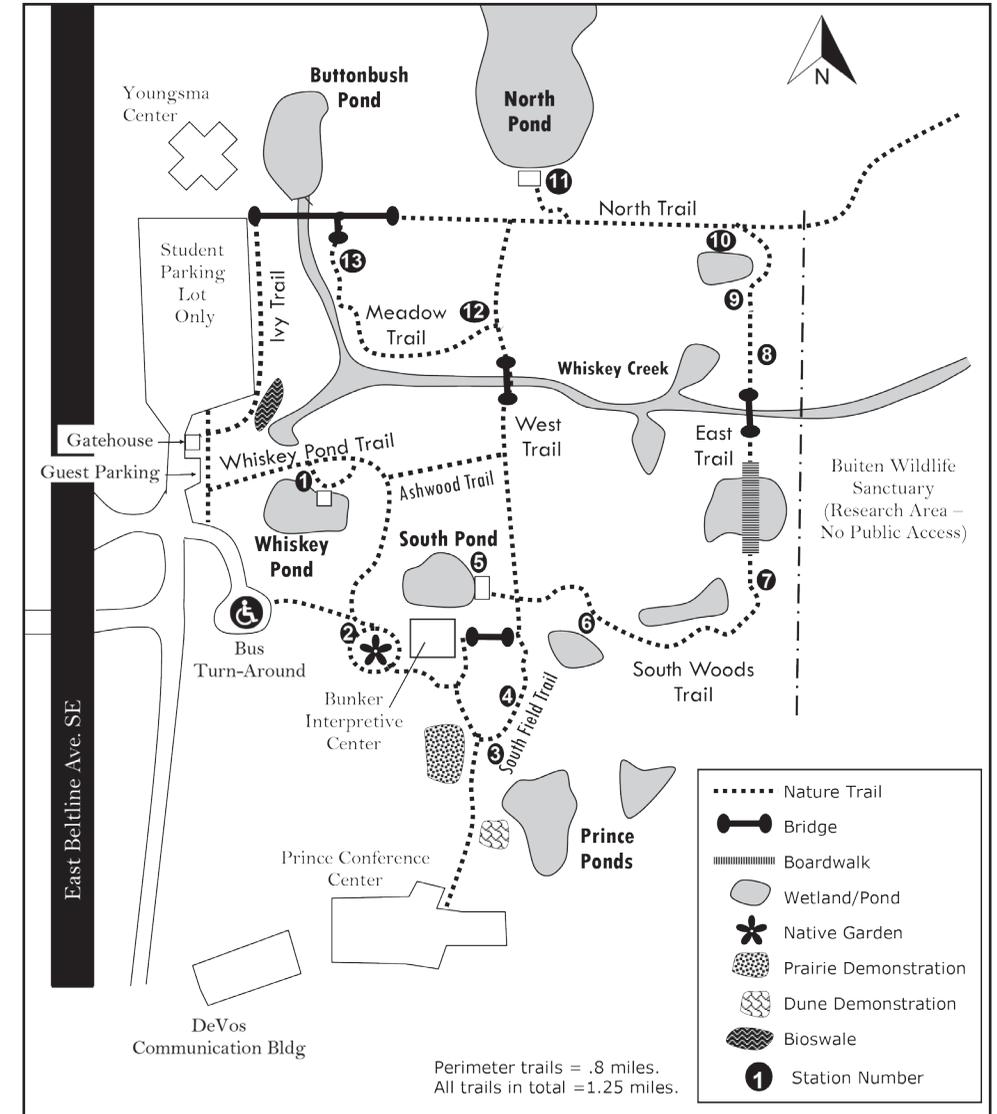


*Sarah Taylor '92*

Welcome to the Calvin College Ecosystem Preserve! The college set aside this area in 1985 to promote nature preservation, education and research. The preserve encompasses nearly 100 acres of forest, meadows and wetlands typical of the West Michigan area. Public access is provided to 40 acres of the preserve; the remaining 60 acres are maintained as a wildlife refuge and for scientific research.

As the preserve becomes increasingly isolated by urban development, the integrity of its biological communities grows more and more precarious. Please help us protect the area and its wildlife by treating it with care as you visit.

One mile of trails are available for wandering, taking in the beauty of each season, and discovering the flora and fauna of West Michigan. Trails are easy to hike and consist primarily of wood chip surfaces. Look for small, numbered station markers along the paths; information about each station is provided inside this guide.



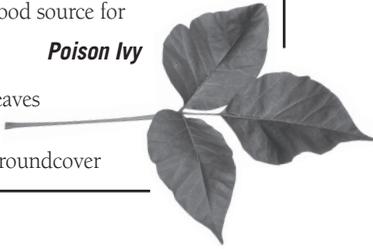
## Be Aware of Poison Ivy

Poison ivy (*Toxicodendron radicans*) grows in abundance on the Ecosystem Preserve. It grows along trail edges and on tree trunks, so avoid brushing up against the vegetation with skin or clothing. Although people are allergic to this plant, it is an important food source for many animals.

*Poison Ivy*

General characteristics:

- Three leaflets with shiny leaves
- Uneven leaf margins
- Three forms: vine, bush, groundcover



## 1 Whiskey Pond

This secluded pond is fed by a seep on the eastern edge. It is home to ducks, frogs, and plants like buttonbush, duckweed, and the tiniest vascular plant in Michigan, water meal.

## 2 Native Gardens

The Bunker Interpretive Center is surrounded by native gardens, featuring plants that have inhabited West Michigan since before European settlement. These flowers, grasses, and shrubs are better adapted to our environment than horticultural species. They do not require irrigation or fertilization; thus, they help conserve water and limit the use of chemical fertilizers and pesticides. Additionally, they are important sources of genetic diversity for wild populations of plants. Native plants also encourage animal biodiversity by providing food and shelter to birds and insects. In the spring and summer, butterflies, bees, and other pollinators can be seen sipping on the nectar of flowers. During the fall and winter, a variety of birds can be seen feeding on seed heads of plants throughout our gardens.

## 3 Water Retention and Land Restoration

Prior to the establishment of the preserve, this area was a dump site. What you see now is a wetland retention pond that was created in 2002 when the Prince Conference Center and DeVos Communication Center were under construction.

The purpose of this series of three ponds is to retain water and to allow time for sediments and contaminants to settle out of the water before the water enters the preserve.

This is important because the ponds in the preserve are breeding places for salamanders and frogs that are sensitive to pollution.

Just west of the ponds is a meadow area that now is being restored as a dune demonstration garden. You will find plants favoring sandy soil, such as wormwood, horsemint, and prickly pear cactus.

Farther west (just across the trail) the area is being restored as a dry prairie. Nonnative species such as sweet clover, Queen Anne's lace, spotted knapweed, and nonnative grasses are being replaced by native prairie plants like yellow and purple coneflower, prairie dock, black-eyed Susan, and a variety of native grasses.

## 4 Buckthorn

The woodland edge before you is composed primarily of glossy buckthorn. This nonnative (European) species is able to out-compete many native plants like sassafras, maple-leaved viburnum and dogwoods. Eventually, the large canopy trees will "shade out" the buckthorn, then maples, oaks, and beeches will fill this area.

## 5 South Pond

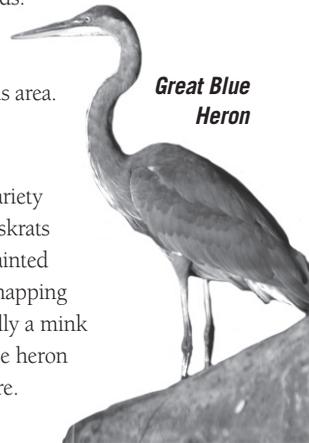
This is a favorite area for viewing a variety of wildlife. You might catch sight of muskrats collecting vegetation in the spring, painted turtles basking in the summer sun, snapping turtles looking for food, or occasionally a mink on the prowl. Watch for the great blue heron and mallard ducks that often feed here.

## 6 Clones

The beech tree demonstrates a novel means of reproducing, which can be seen here: new trees can arise from the roots of other trees. This group of beech trees was developed from the roots of one, now deceased, parent tree (the stump under the arrow). Because they were all developed from one parent, they are genetically identical and called a clone of beeches.

## 7 Tree ID

Leaf shape is not the only visible difference among trees; size, shape, and the color and texture of the bark are all



*Great Blue Heron*

good ways to identify tree species. Here we have a good example of different bark textures. From left to right, we have the dark scaly-barked wild black cherry, the smooth gray-barked beech, and the deeply furrowed gray-barked red oak.

Even though resident deer frequently eat the wildflowers in the preserve, around this area you may notice trillium, spring beauty, or mayapple blooming in springtime.

## 8 Crown Gap

In 1995, this large maple tree fell (now a decomposing log), removing branches from several neighboring trees. The result was a large hole in the canopy, or a crown gap. The gap allows more sunlight to reach the forest floor, encouraging growth of seedlings. Eventually one or two of the saplings you see now will out-compete the others and will fill the canopy gap.

## 9 Vernal Pools

To your right and left are vernal pools, also referred to as ephemeral wetlands. Vernal pools are depressions in the ground that temporarily hold water in the spring and early summer. They are usually found in hardwood forests after heavy rains. These wetlands slowly lose water as the summer goes on, sometimes completely drying out. They are isolated without a permanent inlet or outlet.

Vernal pools are an important part of our ecosystem, as they are home to obligate species (species that are completely dependent on vernal pools for parts of their life cycle), such as the blue spotted salamander. They are a safe place for reproduction of amphibians and invertebrate species. In the pools throughout the preserve, you might hear wood frogs calling in spring, see crayfish homes, or spot an occasional Blanding's turtle.

## 10 Forest Structure

As you look into the woodland you can see that the plant community has a three-layered appearance. The forest floor is covered by short plants: seedlings and spring wildflowers. The understory is made up of large shrubs like spicebrush and witch hazel, saplings, and ironwood trees. These trees do not reach the top of the woodland, the canopy. The canopy is composed of the largest trees in the woodlot, including mature maples, oaks, and beeches.

## 11 Glacial Ponds

Most of the ponds in the preserve, like the one in front of you, were created thousands of years ago by huge chunks of ice left buried underground by glaciers. As the ice slowly melted it left large, water-filled depressions called kettles.

This pond is actually two kettles, each originally 30 to 40 feet deep. Over the last 13,000 years sediment and debris have filled the pond, making the maximum depth today only six feet.

Why do you think there are so many dead trees around the outer edge of this pond? The pond level has risen over time and the soil has become too wet. The pond was drained by a small culvert when the area was used for agriculture, but now the drainpipe has filled in. When the pond overlook was built in 1985, the vertical posts were not in water.

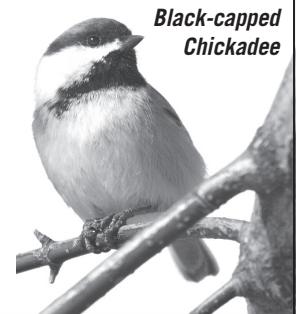
## 12 Old Forest Edge

As you walk down this hill, note the change in community structure to the right. You are moving from mature forest with large trees and a relatively open floor, to an old field with small trees and plants that are relatively near to the ground. Between the areas is the transition.

## 13 Old Field Succession

In the early 1960's this area was a hayfield. Once the cultivation ceased, a series of naturally occurring communities took over the site. Since that time, woody species (trees and shrubs) have become increasingly dominant. The plant growth is so thick and tangled in places that it is almost jungle-like.

As you walk through the preserve, look and listen for the variety of birds that live in the woodland. Year round, cardinals, blue jays and chickadees are often seen. In summer, the gray catbird and red-eyed vireos are often heard.



*Black-capped Chickadee*