For information and a list of our current programs and events please visit *www.calvin.edu/go/preserve*

To arrange a educational program or group visit please contact the program manager at 616-526-7601 or *preserve@calvin.edu*.

Location:
Calvin College Ecosystem Preserve
1750 East Beltline Ave SE
Grand Rapids, MI 49546

Trail Hours: 7 a.m. to Sunset

Bunker Interpretive Center Hours:
9 a.m. to 5 p.m. Monday to Friday
10 a.m. to 4 p.m. Saturday (School Year Only)
Closed Sundays and Major Holidays

Please help to protect this area and its wildlife by observing the following use guidelines:


No pets


No biking, running, skiing, snow-shoeing, fishing or ice skating


No smoking

No noise

Development of the Calvin College Ecosystem Preserve was made possible through a grant from the William R. Angell Foundation.

CALVIN
ECOSYSTEM PRESERVE

CALVIN
College

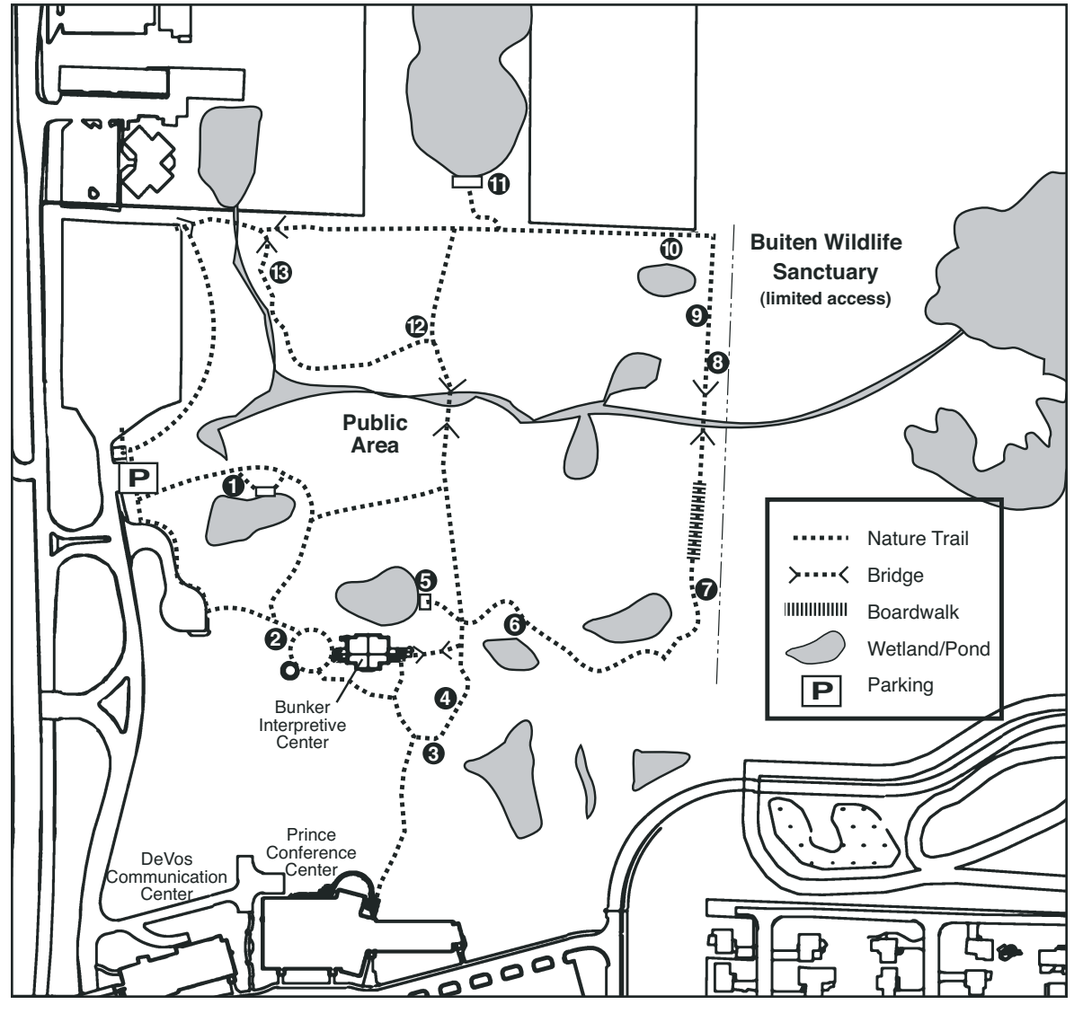

Sarah Taylor '92

Calvin College Ecosystem Preserve

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 along one mile of trails. 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.

Calvin College Ecosystem Preserve



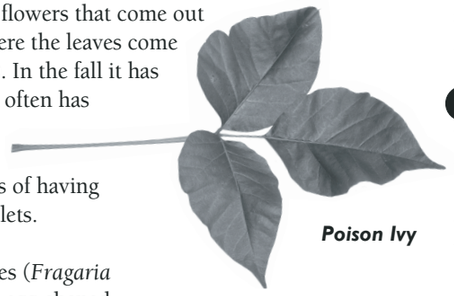
1 Whiskey Pond

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. Watch for the Great Blue Heron and Mallard Ducks that often feeds here.

Great Blue Heron

2 Poison Ivy and Other Three-Leaved Plants

"Leaves of three, let it be" is a good way to remember poison ivy. But not all three-leaved plants are poison ivy. In this area, wild strawberries and wild raspberries are growing with the poison ivy. Do you know the difference? Look at the outer margin of the leaves and the stems of the plants. Poison ivy (*Toxicodendron radicans*) has an irregular margin with a few, coarse teeth. Its flower is a branching cluster of green flowers that come out of the axils (where the leaves come out of the stem). In the fall it has white berries. It often has a reddish stem. Poison ivy also climbs by means of having hairy aerial rootlets.



Poison Ivy

Wild strawberries (*Fragaria virginiana*) have egg-shaped, coarsely-toothed leaves and white flowers in a small cluster. The fruits are red, roundish and juicy. Black raspberries (*Rubus occidentalis*) have leaflets with numerous teeth and prickly erect or arched stems. They have white flowers that bloom in late spring and early summer and the fruit is purple-black.

Another native ground cover Virginia Creeper (*Parthenocissus quinquefolia*) has leaves divided into five coarsely toothed leaflets. It bears small whitish or greenish flowers in branching clusters and a bluish-black berry in the summer. It has tendrils that help it grow up trees.

3 Prairie Restoration and Water Retention

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.

To the west of the ponds is a meadow area that 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

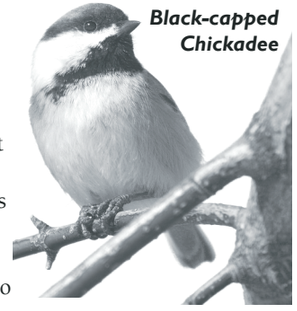
The woodland edge before you is composed primarily of Glossy Buckthorn. This nonnative (European) species is able to out-compete many native plants like Sassafras, Maple-Leaved Viburnum and Dogwoods. Eventually, the large canopy trees will "shade out" the Buckthorn and maples, oaks, and beeches will fill this area.

5 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*.

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 are called a clone of beeches.



Black-capped Chickadee

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 Vireo are often heard.

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 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.

8 Crown Gap

In 1995, this large maple tree fell, removing branches from several neighboring trees. The result was a large hole in the canopy (see #10), or a *crown gap*. The gap allows more sunlight to reach the forest floor, encouraging growth of seedlings. Eventually one or two of the seedlings you see now will out-compete the others and will fill the canopy gap.

9 Crown Gap

This crown gap was created in the mid 1970's. Notice the number and size of seedlings – how does this area compare to the gap at station 8?

10 Human Presence and Forest Structure

The bits of fence in the trees behind you indicate human presence in the preserve many years ago. The fence was once nailed to the tree, but the tree has now grown around it.

As you look into the woodland you can see that the plant community has a four-layered appearance. The *forest floor* is covered by short plants: Poison Ivy, Virginia Creeper, and wildflowers. Directly above the floor are the *woodland shrubs* like the Maple-Leaved Viburnum, Spicebush, and a variety of saplings. The *understory* is made up of large trees like the Flowering Dogwood and Hop Hornbeam. 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

The pond in front of you is actually two glacially formed *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 once drained by a small culvert when the area was used for agriculture, but now the drain-pipe has filled in. When the pond overlook was built in 1985, its support posts were not in water.

12 Old Forest Edge

As you walk this hill, note the change in community structure. You are moving between mature forest with large trees and a relatively open floor to and a secondary forest with small trees and plants that are relatively near to the ground. Between the two areas is the transition: the old forest edge. In the edge environment the plant growth is so thick and tangled in places that it is almost jungle-like.

13 Old Field Succession

In the early 1960's this area was a hay field. Once the cultivation ceased, a series of naturally occurring communities took over the site. The early stages of *succession* may have looked very much like the field around marker #3. Since that time woody species (trees and shrubs) have become increasingly dominant.