

8. The monarch butterfly is a favorite in Michigan. These butterflies migrate 2,000 miles to Central Mexico over winter, and return in the summer with females laying eggs along the way. The key to their success is milkweed, a native plant with purple flowers. It is highly nutritious for monarch larvae, and is easy to maintain for a butterfly garden! Butterfly gardens are an excellent way to promote pollinators in developed areas. Stop by our office and ask about resources and seeds to start your own.

9. Here you will see a variety of the native grasses and forbs that are so important to Michigan's ecosystem. Little bluestem, big bluestem, Indian grass, switch grass, and others all grow here, and provide food and habitat for wildlife as well as increasing drainage with their extensive root systems. Native plants have root systems that grow up to 25 feet into the ground!

10. The term "succession" refers to the predictable changes that occur in the plants and animals that live in an area over time. Northern Michigan was once covered by vast forests of white pine. When the timber was harvested it brought major changes to the ecosystem. Annual weeds, grasses, and wildflowers grew, creating habitat for mice, meadowlarks, and other open-field wildlife. Eventually, shrubs and small trees invaded the grasslands. As these new plants grew, they shaded out the grasses and created a new kind of habitat. Chipmunks and robins were among the species to colonize. Over time, pines and oak trees grew tall and shaded out the shrubs, creating a forest habitat that is ideal for squirrels and turkeys. Over time, beeches and maples grew up through holes in the canopy. In this example, the beech-maple forest is the "climax community," or an association of plants and animals that will remain stable until disturbed by an outside force such as fire, wind, disease, or humans. Biologists use the concept of succession to maintain different types of habitat. For example, prescribed burns are used to maintain young jack pine stands for Kirtland's warblers. As you walk through our trail, be sure to recognize the different plants and animals in the different areas.

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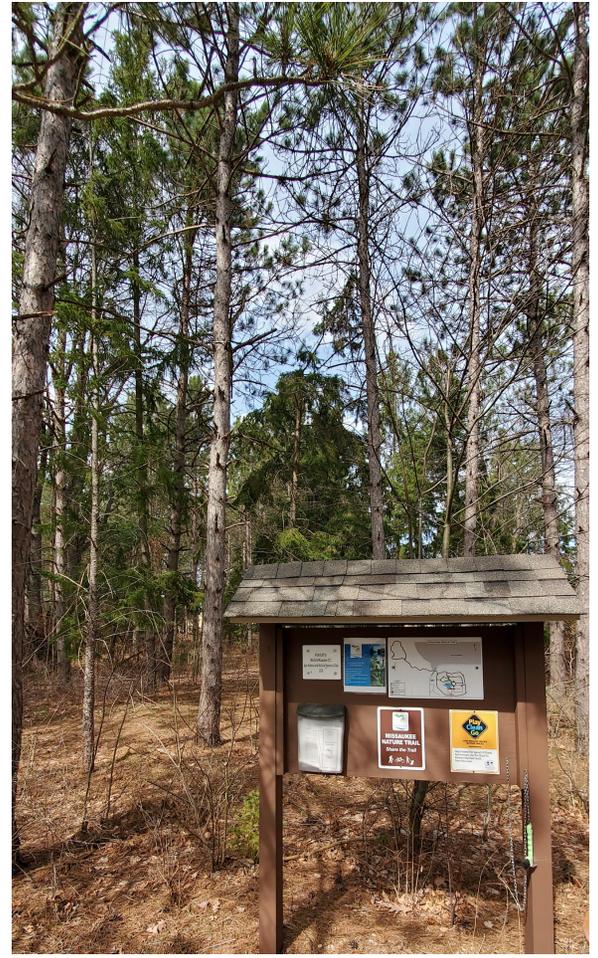


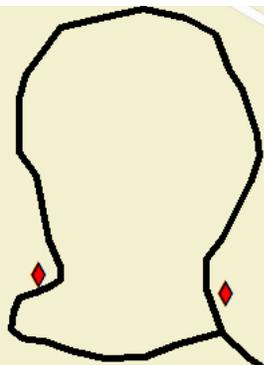
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by HPA member Graham Parks



Missaukee Nature Trail





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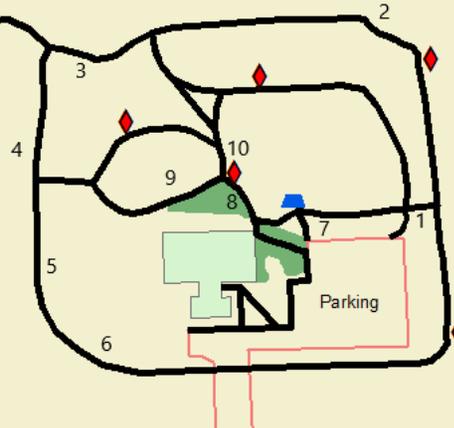


Legend

- Benches
- Foot Trail
- Parking
- County Offices
- Native Gardens
- Outdoor Classroom



0 125 250 500 Feet



4. Windbreaks are linear plantings of single or multiple rows of trees or shrubs established to control erosion, snow, plants, noise, energy costs, or to improve aesthetics. They also provide travel lanes, nesting sites, food, and escape cover for many wildlife species. Evergreens are preferred for windbreaks since they do not drop their foliage over winter.

5. Michigan was once home to wildlife-rich native grasslands. Prairie ecosystems that include native grasses and forbs offer some of the highest quality nesting habitat for birds. Native grasses grow several feet tall, providing excellent cover, and also provide seeds for native birds. Native grasses and forbs were also used by Native Americans in sacred ceremonies, for medicines, sugar, bowstrings, fishing line, and baskets. Missaukee Conservation District supports the control of invasives so that these natives can thrive.

6. Animals need cover, water, and food, such as the blueberries, strawberries, and raspberries you see before you. Unfortunately, to get from one location to the next animals must often cross roads like Sanborn behind you. roads fragment habitat, disrupt migration corridors, and expose wildlife to deadly hazards. While deer are the most common animal involved in Michigan in car-wildlife accidents, there are sensitive species that are also affected, such as the Blue-spotted salamander. Drive safe, and watch for wildlife!

7. Rain gardens are designed to collect water runoff from rain and snow melt. The standing water is able to drain into the ground, while native plants with deep root systems filter the water before it reaches lakes and rivers. The deep roots of our native plants hold soil in place and filter water, making them a necessary part of Michigan's hydrologic cycle.

There are two geocaches on our trail. Can you find them?

1. Ground-ivy (*Glechoma hederacea*), commonly known as Creeping Charlie, is an aggressive invasive species that is found in moist shady places and along paths. Though it was brought to America intentionally for its medicinal properties and high vitamin content, it has the potential to crowd out native species. It was used by early Saxons to clarify beer before hops!

2. Red pine (*Pinus resinosa*) is one of the most widely planted trees in Michigan. It is a native species and is long-lived, fast-growing, and thrives in Michigan's sandy soils. It can be identified by its red, flaky bark and needles in clusters of two. It is often grown for structural timber, but it provides excellent habitat and food for songbirds, mice, chipmunks, white-tailed deer, and snowshoe hare.

3. The genus *Quercus*, or the oaks, comprises over 400 trees and shrubs that range from boreal forests to the tropics. Oaks are divided into two groups: white oaks have leaves with rounded lobes and sweet acorns that mature in the autumn of the first season, while red oaks have leaves with tipped lobes and bitter acorns that mature in the second season. Twelve species are native to Michigan including this white oak (*Quercus alba*). Oaks are extremely popular due to their versatility. They can grow on dry, sandy upland sites that some other trees can't tolerate. They are frequently planted as lawn or shade trees because of their large crown. The wood is very heavy, strong, and close-grained, which makes it excellent for furniture, flooring, wine casks, interior trim, and barrels. Acorns are an important source of food for birds, squirrels, and other animals, but they were also extensively used by Native Americans for flour! Oaks are long-lived and can survive for 500-600 years.