



# *Priory Neighborhood Preserve*

## *Interpretive Trail Guide*



Maplewood Parks and Recreation  
City of Maplewood, MN



Printing of this brochure was funded by Friends of Maplewood Nature. To learn more about this dedicated group of volunteers, visit [www.ci.maplewood.mn.us/nc](http://www.ci.maplewood.mn.us/nc).



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# Welcome to Priory Neighborhood Preserve!

This site was set aside by the residents of Maplewood to preserve a bit of the wild in our city. It is a place to discover and enjoy nature. From the silver maple tree arching over the north entrance to the woods, prairie, and wetlands beyond, this 46-acre preserve is full of diversity. As you walk the trails, watch for the numbered posts that correspond to this guide. Twelve stations along the trail highlight the preserve's stories.

**Creating the Interpretive Trail:** The Priory Preserve Interpretive Trail was developed by volunteer Master Naturalist Janie O'Connor, with support from volunteer graphic designer Leslie Hawkes and staff member Ginny Gaynor. Photos were provided by Janie, Christa Rittberg, and city staff. *Thank you, volunteers!*

## Visiting the Site

The preserve is at the southwest corner of Century and Larpenteur. There is street parking on Larpenteur, near the site entrance.

- The preserve is open dawn to dusk.
- Please leave flowers, seeds, plants, and animals in place for all to enjoy.
- Pets must be leashed and owners must clean up after their pets.
- Bicycles are prohibited.
- No fires, camping, or motorized vehicles.

For more information on the Neighborhood Preserves see [www.ci.maplewood.mn.us/preserves](http://www.ci.maplewood.mn.us/preserves), or visit the Maplewood Nature Center.



## *Geology: Cool Beginnings*

Close your eyes and travel back in time 12,500 years. Imagine standing on a huge glacier, nearly a mile thick, that reaches down from Lake Superior. Can you feel the cold air brushing against your face? The glacier advances and recedes, picking up rocks and sediment as it grinds its way over the landscape. The climate warms and the glacier retreats north, depositing sand, gravel, debris, and sculpting the landscape we see today.

Sometimes ice blocks are trapped beneath glacial debris; when the ice melts a pot-hole wetland is formed. Watch for these depressions as you walk the preserve trails.

When the government surveyor tromped this area in 1847, he declared the land “2nd rate” for farming, however many of our native plants thrive on these soils. The varying terrain and soils at the preserve set the stage for a diversity of plant communities.

Along the trail, you’ll find large rocks deposited by the glacier called glacial “erratics.” Glaciers sometimes leave a footprint - lines etched into bedrock - that tells which way they traveled. There is no exposed bedrock in the preserve, but you can find these striations etched into a glacial erratic.



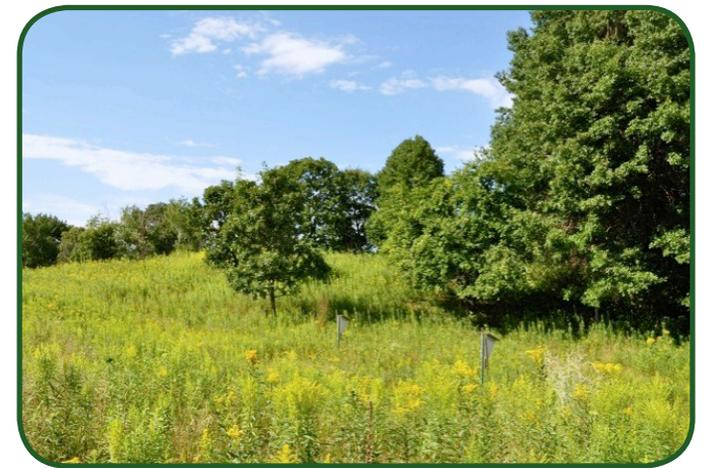
44° 59' 28.562" N 92° 59' 17.886" W

## *Where Habitats Meet*

Habitat is like a neighborhood for a particular group of plants and animals that have found a good home with the right mix of food, water, shelter and space. One neighborhood bumps up against the next. Do you see how the grassland runs right up to the woodland here? Scientists say that there is more species diversity at the meeting place than within either of the habitats.

Habitats at the preserve differ due to terrain, soil, microclimate and disturbances both natural and man-made. The transition area between grassland and woodland is ideal habitat for deer, turkey, red tailed hawks, rabbits and other creatures. During spring, you can hear the cheery call of cardinals as they build nests in the shrubs at the edge of the woodland.

As you continue your walk through the preserve, look for the areas where habitats meet. Why do you think the habitats differ? Do you think it’s a change in topography, soils, or disturbances?



44° 59' 29.600" N 92° 59' 20.855" W

## Wetlands: Soggy Soils

Let's say that "Wetland" is your family's last name. Your sisters and brothers are named: rich fen, wet prairie, wet meadow, cattail marsh, shrub swamp and wooded wetland. Each of your siblings has a different appearance and different attributes or talents. Some wetlands are deep, some are shallow. Some have areas of open water, some are fully vegetated. Some have water year-round, and some dry up after snow melt. What all the wetlands have in common is WATER, at least sometime during the year.

The wetland before you is a wet meadow. People affectionately call it the Fern Bog, because sensitive fern grows here. But it's not a true bog. Sensitive fern was given its name by early European settlers who noted that this fern's foliage was killed with the first frost of autumn.

Wetlands provide food, water and nesting sites for many types of animals. Some wetland creatures spend their whole life in the wetland, while others live part of their life on land. Turtles, for example, live in ponds or wetlands. But they venture out on land to lay their eggs and the newly hatched turtles must find their way back to the water.

In addition to providing habitat, wetlands serve as giant sponges and strainers. Stormwater from the landscape and surrounding development flows into the wetlands at the preserve. The wetland vegetation and soils help filter the polluted runoff. Some of the water soaks in and recharges groundwater. Some water flows southward to Beaver Creek, Beaver Lake and eventually into the Mississippi River.



44° 59' 27.937" N 92° 59' 22.903" W

## The Shredders and Decomposers

Imagine what your home would look like (and smell like!) if the garbage and recycling were left to pile up month after month.

In nature, rotting and decay are the norm and almost everything is recycled. The shredders and the decomposers are the garbage and recycling factories of the natural world. To these organisms, a dead plant or animal means time for lunch.



**The Shredders** are organisms that tear detritus (dead plants and animals) into smaller pieces. Creatures like beetles, millipedes, earthworms, or nematodes (roundworms) are shredders. As they search for food, they chew up organic matter and break it down into small enough pieces for the decomposers.

**The Decomposers**—fungi and bacteria—then go to work. Fungi produce enzymes that let them break down lignin and cellulose in plants, chitin in the shells of insects, and the bones of animals. Bacteria absorb tiny pieces of organic matter through their cell walls and enzymes break down the material. When the fungi or bacteria die, the nutrients in them are available to plants or animals.

No one fertilizes the forests or the grasslands. In their quest for food, the shredders and the decomposers work together to cycle nutrients through the system.

44° 59' 27.555" N 92° 59' 28.521" W

## Oak Woodland: Layered Living

This oak woodland is like a layered cake. The canopy is the umbrella-like top layer of mature trees, a mass of intertwined branches, twigs and leaves. This layer provides habitat for birds, like northern cardinal, red-bellied woodpecker and wood thrush.

The middle layer of shrubs and tree saplings has adapted to life in the shade. It provides habitat for birds, food for deer, and cover for other mammals.



The forest floor is carpeted with ferns, wildflowers, sedges and grasses. Some of the early wildflowers - the spring ephemerals - have to bloom, attract a pollinator, and set their seed, all within a few weeks before the canopy leafs out and shades the woodland floor.

Oaks produce acorns, a culinary highlight of the forest. With their high protein and high fat content, acorns are the main course meal for jays, squirrels, and turkeys. When a jay forgets where it buried or dropped the acorn (which happens often!), a new oak tree seedling starts life and the cycle starts all over again.

If you're here in spring, listen for the chorus of frogs rising from the wooded wetlands.

44° 59' 21.507" N 92° 59' 31.303" W

## The Changing Landscape

John, one of the long-time residents in this neighborhood, would tell you this preserve is forever changing. He's lived here long enough to see physical changes on the landscape. In recent times, disease and invasive species have made dramatic changes in this woodland.

Just 10 or 15 years ago, this knoll was shaded by a full canopy of oak trees. Then oak wilt, a fungal disease, came through and killed many of the northern pin oaks. Bright sunlight now streams onto the knoll, creating a completely new environment, where woodland plants can't survive. Will sun-loving species of the prairie and savanna find their way here? Or will acorns germinate, and eventually grow into trees that cast enough shade for a woodland?

In John's lifetime, buckthorn, a non-native shrub, invaded this woodland and changed the character of woods. Our native woodland shrubs—hazelnut, nannyberry, high bush American cranberry and others—could not compete and the shrub layer became a monoculture of buckthorn. Buckthorn's dense shade made it difficult for woodland sedges, ferns and wildflowers to thrive and the native groundcover declined in many parts of these woods. Hundreds of volunteers have removed buckthorn shrubs in recent years.



44° 59' 22.389" N 92° 59' 29.083" W

## *Wanted: Dead Trees*



Dead trees – standing or down – are important for a woodland. One estimate claims that two-thirds of all animal species depend on dead trees and/or downed wood at some point in their lives.

When a large tree dies it may be colonized by insects and other organisms before it falls. These in turn attract birds and other animals. They come not only for the meal, but dead trees make great houses for some birds and mammals.

If you hear a loud hammering in the woods, it may be a pileated woodpecker. Nearly as large as a crow, the pileated woodpecker is the largest woodpecker in North America. Its loud ringing call and huge, rectangular excavations in dead trees announce its presence in woodlands. If you're lucky you may see the pileated woodpecker that has been nesting in this woodland. Do you see any holes, high in the trees?

Once a tree falls to the ground, it can be home to a host of insects and animals. Peek under a log! What do you see? Ants, beetles, slugs, centipedes are busy foraging for food. If you're lucky, you may spot a salamander hiding out and enjoying the cool damp soil!

44° 59' 17.614" N 92° 59' 31.054" W

## *Oak Savanna: A Rare Landscape*

Pause a moment in the cool shade of this bur oak grove. You are in an oak savanna—a landscape with scattered oak trees and a ground cover of prairie grasses and flowers. When it has enough sun a bur oak grows wide and sprawling. It's stocky limbs might remind you of the Incredible Hulk.

The bur oak is the icon of the oak savanna. It has especially thick and corky bark, which protects it from prairie wildfires. Wildfires were essential to the savanna because they kept trees and brush from taking over the grassland. When settlers began controlling wildfires, savannas that weren't lost to development often transitioned into oak woods. Historically, oak savanna was the optimal habitat for deer, turkey, grouse and quail.

Much of Maplewood was once oak savanna. Today, savannas are one of rarest landscapes in America. Maplewood is fortunate to have two or three tiny examples remaining.

There are savannas throughout the world. Most people have seen pictures of the vast African savanna. It has the same structure as our oak savanna - scattered trees with grassy groundcover - but different plant species.



44° 59' 25.062" N 92° 59' 21.902" W

## *Lichen: Best Friends*

This pretty red rock has a couple of tattoos. The white/grey patch is actually lichen. This tough little life form is a relationship between two organisms – a fungus and an algae. Here's how it works:



- Both partners gather water and nutrients from the atmosphere;
- The algae performs photosynthesis, which produces food for the lichen;
- The fungus retains water and may help obtain nutrients for the lichen from the surface they live on.

Over many years, lichens can break down the substrate they live on and begin the process of creating soil. Eventually a seed may fall, germinate and grow, shading out the lichen and a plant may replace the lichen. Imagine living long enough to witness the whole process!

Lichens depend on rainwater for their minerals and most are very sensitive to air pollution. Some lichen are used as air quality indicators. There are lots of lichens at the Priory Preserve where air quality is good. How about your neighborhood? Are lichen present? Look on tree trunks and old fence posts.

## *Stewardship: Together We Can*

This urban nature preserve is too small and isolated to thrive on its own ecologically. Natural forces such as wildfire have been removed from the landscape. Pressures have been added such as pollution, invasive species, and altered waterways. Maplewood actively manages this site with the help of contractors and many volunteers.

The grassland area before you is slowly being converted to prairie. We began by conducting a prescribed burn to remove thatch and expose the soil and then volunteers sowed prairie seed. In the late summer and fall you can see stems of big bluestem and Indian grass from the seeding. Additional burning and overseeding will be done to help prairie species establish.

In the wetlands, naturalists have released a biological control agent to help control purple loosestrife, an invasive wetland plant. The biological control is a beetle species that feeds solely on purple loosestrife. This has been very successful and the beetles have brought this plant population down to levels that can be tolerated.

In the woodlands, contractors and volunteers have removed buckthorn. Once deer populations are under control, plans call for diversifying the woods by planting native trees, shrubs, ferns and wildflowers.



## Prairie Patches



A kaleidoscope of bright wildflowers blooms in this prairie grassland.

Prairie grasses and flowers are famous for their deep roots, which are often as long as the plant is tall! Try to visualize the prairie world under your feet. The fibrous root system of a tall prairie grass plant is like a shaggy head of hair, over four or five feet long. Roots for some prairie flowers have measured in at over 15 feet long! These tremendous roots enable prairie plants to find water deep in the soil and survive drought conditions.

In presettlement times, Maplewood didn't have vast prairies. It had small pocket prairies like this one, tucked in among the oak savannas, woodlands, and wetlands. Prairies depended on fire. Wildfires galloping across the prairie killed invading trees and reinvigorated the prairie. Native Americans set fire to prairies to encourage lush new growth that would attract bison and to control mosquitoes near their camps. Today we use carefully controlled prescribed burns to help manage the prairie.

Each year, part of the prairie root system dies and begins to decay, releasing nutrients and adding organic matter to the soil. This process creates the rich soil that was highly sought after by early settlers as farmland.

44° 59' 26.106" N 92° 59' 18.577" W

## Apple Trees: Snacktime

Johnny Appleseed probably never made it this far west, but his legacy of planting apples trees did. There are nearly 50 apple trees in the preserve. Many of them look like wrestlers with their powerful limbs intertwined.

Apple trees provide food, cover and resting space for many creatures. The fruits are enjoyed by many species of birds and mammals, including robins, flycatchers, orioles, deer, rabbits and squirrels.



How did the apple trees get here and why they are scattered? One theory is that they may have been planted in the old German tradition called **Streuobstwiese** or "Meadow Orchard" - scattered trees across the grassland.

Since some of the early settlers in this neighborhood were German, perhaps they continued their tradition on this land. Some trees may have been "planted" by birds or mammals through their droppings.

Johnny Appleseed's dream was for a land where apple trees were prolific and no one was hungry. So when they ripen, help yourself to one of these old varieties of apples.

44° 59' 27.216" N 92° 59' 20.064" W