

## Chicago Ridge Prairie Trail Notes

*The Chicago Ridge Prairie is an Illinois State Nature Preserve and is protected by law. All plants and animals are protected from removal or destruction. No taking of plants are allowed. No bikes or vehicles are allowed off the trails.*

For more information about Chicago Ridge Prairie, visit <http://www.chicagoridgeprairie.org>.

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*In all these notes, the narrative perspective is from the natural history of the site and its importance in the Chicago Wilderness region as calcareous outwash prairie on the Chicago lake plain.*



### 1. Importance & Type of Prairie

The Chicago Ridge Prairie is one of the only two remaining gravel prairies surviving on the old lake bottom (the other is Santa Fe prairie in Hodgkins). The Chicago Ridge Prairie is a special type of prairie called “calcareous prairie” which is mostly mesic (moderately moist). Due to its high plant and insect diversity (with many rare or unusual species for a site this small, the CRP has regional significance in the Chicago Wilderness area. Part of the reason for this are the soils. The pH of the soil is greater than 8.0 (or alkaline) which is uncommon for prairies in the Chicago area which are generally neutral or slightly acidic (pH < 7.0). The soils of this site developed under the post-glacial outwash plain of Stoney Creek near the edge of Worth “island.” As a result, the soils contain limestone gravel, large rocks and boulders which are visible throughout the site. Since the pH is rather high, the prairie contains

plant species which are adapted to this pH, such as *Valeriana ciliata* (Valerian), *Satureja arkansana* (Low Calamint), and the very threatened *Cypripedium candidum* (Small White Ladyslipper Orchid).

In 1994, all 12.9 acres of the CRP was designated an Illinois State Nature Preserve by the Illinois Nature Preserves Commission to recognize and protect this unique native prairie wetland. In 1979-80, the back 5 acres of the site was filled with soil from the adjacent apartment complex leaving about 7.9 acres of the site still natural prairie. In 2013 the woody vegetation was removed and the foreign soil excavated and hauled away. This exposed the underlying wetland soils as silty-clay loam (Peotone 330A series). The area was then graded close to the original soil grade and re-seeded with native species as part of its restoration.

## 2. Fire



The prairie here is fire adapted. In pre-settlement times, fire often raced through the tallgrass prairies, savannas and wetlands. These fires were seasonal and a regular feature of the landscape. Fire is an important component of the ecology of the prairie. Fire returns nutrients to the soil, improves ground solar reception and seed germination, and importantly inhibits the growth of large trees and woody plants which would increase shade. Fire also acts as a control on invasive non-native or exotic plant species which surround the prairie's urban setting. Non-native plants compete with the native plants for space, nutrients and light and are usually more aggressive than the prairie species. However, they are not fire-adapted and fire reduces their spread. At Chicago Ridge Prairie, about 50% of the site is carefully burned each year (conditions permitting). Grasses such as Big Blue Stem (*Andropogon gerardii*) and Prairie Dropseed (*Sporobolus heterolepis*) grow more vigorously as do most of the other wildflowers while maintaining species diversity.

## 3. Flora



Chicago Ridge Prairie is home to over 150 native species of plants including grasses, sedges, forbs (wildflowers) and small shrubs. Many of these plants are calciphile species and uncommon to very rare. The soil moisture-gradient is primarily wet-mesic but also includes mesic and dry-mesic soils. The dominant plants vary by each association type which contributes to the high diversity for this 12 acre site. When the water table fluctuates over time, the plant association may also change in composition. The mesic association has the highest diversity and a majority of the calcareous species. In spring and fall, there are massive displays of color throughout the prairie.

Within Chicago Ridge Prairie, there are two different areas: the natural area (about 7.9 acres) and the restored area (about 5 acres). Both areas are under management. The nature trails and shelter occur within the restored area. This area was seeded in late 2013 with species found in the original section. The rest of the prairie is natural and original -- similar to what first settlers in Worth Township found growing here. There is no evidence that this area was farmed (it was probably too wet a good portion of the year) but it did experience minor disturbances such as ATVs prior to being preserved.

The rich prairie flora growing here hosts a rich community of insects -- many of which are also dependent upon specific host plants.

Interesting forb plants in this prairie are:

1. Compass Plant (*Silphium laciniatum*)
2. Rattlesnake Master (*Eryngium yuccifolium*)
3. Stiff Gentian (*Gentiana quinquefolia occidentalis*)
4. Prairie Lily (*Lilium philadelphicum andinum*)
5. Small White Lady'slipper Orchid (*Cypripedium candidum*)
6. Shooting Stars (*Dodecatheon meadia*)
7. Golden Ragwort (*Senecio pauperculus balsamitae*)
8. Low Calamint (*Satureja arkansana*)
9. Marsh Blazing Star (*Liatris spicata*)
10. Sullivan's Milkweed (*Asclepias sullivantii*)

Interesting grasses and sedges are:

1. Big Blue Stem or Turkey Foot (*Andropogon gerardii*)
2. Switch Grass (*Panicum virgatum*)
3. Blue-Joint Grass (*Calamagrostis canadensis*)
4. Dark-Scaled Sedge (*Carex buxbaumii*)
5. Kalm's Prairie Brome Grass (*Bromus kalmii*)
6. Prairie Dropseed (*Sporobolus heterolepis*)

#### 4. Bugs / Birds / Animals

This prairie is home to several species of snakes, mammals, and birds as well as insects. High quality habitats, such as Chicago Ridge Prairie, are rated by the number of animals that feed, nest, and reproduce within it. Such habitats are considered “sustainable.”

The rich prairie flora growing here hosts a rich community of **insects** -- many of which are also dependent upon specific host plants. This site is remarkable to have so many rare and unusual species in relation to its relatively small size.

*Examples of these rare insects are:*



*Lethe eurydice* (Eyed Brown Butterfly)

Species feeds on sedges (*Carex* sp) which are growing in the lower wetter areas of the prairie.



*Neacoryphus bicrucis* (White Crossed Seed Bug)

This true bug feeds on Prairie Cord Grass which grows in the wetter areas of the prairie often along slopes.



*Okanagana balli* (Prairie Cicada)

This rare cicada only occurs at 3 sites in Cook County. The males sing for mates from the top of the vegetation and can be heard from 30 ft (10m) away.



*Diaperomera blatchleyi blatcheyi* (Prairie Walking Stick)

This walking stick has no wings and must roam using its legs. It is very rare and only occurs at 3 known sites in the Chicago area. This insect is “fire positive” and its population here depends on periodic fires for its life history.



*Prairiana kansana* (Kansas Leafhopper)

This leafhopper is another insect which is remnant-dependent and feeds on host grasses. It is very rare and this may be the only location in Illinois.

#### *Snakes:*

There are at least three species of native **snakes** living in the prairie: the plains garter, DeKay’s brown and the smooth green. They are generally secretive or camouflaged except on warm dry sunny days when might be seen basking in an open area or on the RR embankment. The snakes hibernate in the winter underground in burrows or under rocks.



*Opheodrys vernalis* (Smooth Green Snake)

The Smooth Green Snake, once abundant in the vacant fields of the southwest suburbs, is now very uncommon in entire Chicago area. These snakes are active during the day and live almost entirely on insects. They prefer the moist soils of this prairie. Their bite is nonvenomous.

The prairie is also home to many common **mammals** such as rabbits, raccoons, voles, and mice. Occasionally you may also see a coyote or red fox wander through it.

*Mammals:*



*Microtus pennsylvanicus* (meadow vole)

The most commonly observed mammal in the prairie is the rabbit. However the most abundant mammal is probably the meadow vole (a type of rodent). This vole is active day and night and builds raceways through the grass and underground trails. This activity also aerates the soil for the prairie plants. They are herbivores eating grasses and forbs. In a two-year study here, at least 3 separate communities of voles were found living in this prairie.

*Birds:*

Many **birds** visit this prairie but only a few common species nest here due to the relatively small size of the preserve and lack of “privacy.” Observed nesting birds are grassland sparrows, red-wing blackbirds, robins, and an occasional mallard duck or Canadian goose. Migrating birds are often seen in early spring and fall especially the warblers. The most common bird of prey is the red-tail hawk which is often seen perched high on the dead cottonwood in the prairie watching for a meadow vole or mouse.

## 5. Wetlands and Bio-Swales

Fifty years ago, this site was mapped as wetlands where waterfowl rested and occasionally nested. Today the site is much less wet as the surrounding urban development has reduced the flow of water to the site. Also storm sewers carry some of the water away from the site that would otherwise flow into the site. Still the entire site is considered a jurisdictional wetland by the USACE (US Army Corps of Engineers). Large fluctuations in the water table will be affect the composition of the plant community. Mesic and dry-mesic species will increase and wet-mesic species will decrease. To better understand these changes, a hydrology monitoring system is planned for the site. Such a system will install piezometers in both the natural and restored areas of the prairie to monitor the depth of the water table and how it changes through the seasons.

In the restored unit of the prairie, bioswales were created and designed to collect and hold water for the wet-mesic plant species planted within them. Here a bioswale is a shallow depression populated with wet-mesic prairie species to act as a filter to protect the restoration from any pollutants that might run off from the trail or shelter area.

## 6. Solar Power & Rain Gardens

The new trails in the restoration area include a shelter with lights powered by solar energy. The rain barrels also collect the run-off from the roof of the shelter. This slows the run-off in the prairie and the water can be used as a controlled source of water as needed for the restoration.

### NOTES ON STEP-IN DECKS:

#### EAST DECK:

From this view of the landscape we see both the wet-mesic and mesic plant communities present.

- Near the northeast corner of the prairie, this area of the prairie is recovering from minor past disturbances. As a result woody species, such as cottonwoods, sumac, and gray dogwood are attempting to invade the prairie. Annual stewardship is needed to control these woody species which shade the grasses and forbs.
- You can observe tall prairie grasses here, purple prairie clover, wild geranium, false-white indigo, rattlesnake master, tall thimbleweed, hoary puccoon, and stiff gentian seasonally.
- The dead tall cottonwood, just to the left center of the deck, provides a perch for birds of prey while not shading any prairie below.

#### WEST DECK:

From this view of the landscape we see both the wet-mesic and dry-mesic plant communities present.

- Cottonwoods, buckthorn and dogwood were removed from areas close to the deck and the now open areas are recovering with seeds from the surrounding prairie
- The area to the south and west is drier than the rest of the prairie. You can observe plants such as prairie panic grass, butterfly weed, rough blazingstar, lead plant, wild quinine, prairie coreopsis, stiff aster and the rare Riddell's goldenrod.
- Near the deck is a weedy stand of tall goldenrod which is a native weed but too aggressive to co-exist with prairie species.