

## A View from the Valley Grove Prairie by Gary Wagenbach



On the left is the view I had when out on the Valley Grove oak savanna on a nice day in July cutting some of the invasive plants such as sweet clover. The bonus for the day was seeing threatened monarch butterflies and wild bees finding seasonal Valley Grove prairie flowers to their liking. You will be happy to know we have abundant patches of common milkweed, a key food plant for the monarchs.

White wild indigo (*baptisia alba*), shown in the middle image, is a dramatic addition to the midsummer prairie flowers. There are many more kinds blooming during July and August. Come out and walk the trails and see for yourself.

Often asked questions about the big bur oak on the southwest corner of the cemetery grounds include: How old? When does it produce acorns? How does it produce acorns? Are the young oaks just to the south offspring from the tree?

My answers: Age approximated is likely in the range of 200-250 years. Acorn production occurs some years, not every year, when the female flowers are fertilized by pollen from male flowers, i.e., both male and female on one tree (“one house” or “monecious” if you like the Latin/Greek label). Pollen from adjacent trees is the usual source of pollination. Self-pollination is said not to occur because pollen and female flowers mature at different times. We do think the nearby young oaks are offspring of the big tree.

### Prairie Notes by Myles Bakke

A friend planted a small prairie patch along the boulevard strip between his sidewalk and street. It is a diminutive prairie, but with a richness of forbs and grasses that creates a discontinuity in the block-long stretch of Kentucky-bluegrass boulevard; a riotous non-sequitur of color and form offending the collective aesthetic of block after block of manicured turf. The neighbors, for the most part, were tolerant and polite, but at least one couldn't resist a head-shaking disapproval and the derisive query, “Attracted any buffalo yet?”

Our own restoration (approximately 49 acres) has not proven to be a bison magnet either, but, like the little sidewalk prairie, it has a certain draw that other species find alluring. For the little prairie, it's mostly pollinators like bees and butterflies, but other insects, spiders, and birds as well, are attracted to that tiny island of diversity.

Valley Grove's scaled-up version is home to a large array of insects, spiders, reptiles, grassland birds, and mammals. To paraphrase W. P. Kinsella and the 1989 movie, *Field of Dreams*, “If you build it, they will come.” Bison will not show up, nor is our restoration large enough to support even a small herd. Prairie grass evolved being heavily grazed by herds moving continuously over large expanses, so some grazing is actually beneficial to native grasslands, but introducing grazing on small acreages is challenging. White-tail deer do graze some grasses and forbs on our prairie, but also browse woodland plants. They subsist on twig-browse for nearly five months in winter, so, compared to the year-round, grass-grazing specialist bison, their impact on prairie grasses is paltry. Deer disconcertingly mostly eat grass when the shoots are young and tender, shifting their attention to prairie wildflowers, particularly legumes, when the grasses mature.

So in the absence of large grass grazing herbivores, who does eat the grass? If it's not the two thousand pounders, they must be smaller.

They are: meadow voles weigh about an ounce and a half, and grasshoppers weigh . . . well, a lot less. There are many other organisms that eat some grass, of course, but voles and grasshoppers account for, by far, the greatest share.

These herbivores make up for their size with great numbers. Voles belong to a large family of rodents known as Arvicolines, which also includes lemmings and muskrats. There are at least 25 species of North American voles alone. The meadow vole,

*Microtus pennsylvanicus*, is our common species. Although the prairie vole, *Microtus ochrogaster*, is better adapted to prairie, it is uncommon due to lack of habitat.

The meadow vole is Minnesota's largest vole and the most utilized of prey species. Predators may include everything from the smaller but venomous short-tailed shrew, up to and including the larger canids such as coyotes and wolves.

Avian predators include shrikes, hawks, owls, and even crows.<sup>1</sup> Some snakes, of course, prey on them heavily, as well.

There are several reasons why they are such popular prey items. First, they are easy to catch, since they lack speed and good eyesight, depending largely on cover for protection. Second, they are prolific, so there are lots of them. Litter size is about six pups. A female is capable of reproducing when she is only 25 days old, although, in the wild, females are usually a month or more old before they breed.

Still, with only a three-week gestation period, it's possible to go from one generation to the next in fewer than seven weeks. Add to that an extended breeding season that, even in Minnesota excludes only a few of the coldest months of winter, and they are simply able to outbreed their predation rate.

A third reason is their dependability as a prey species throughout the year. They do not hibernate, so they are active and available in the winter. They depend on snow for cover and insulation, living in what biologists call "subnival" (beneath snow) conditions. Snow cover does not impede some predators. Weasels are adept at burrowing into the vole runs. Owls, fox, and coyotes can hear them moving in their runs beneath the snow and, by diving or pouncing through its depths, make a kill sight-unseen.

A final reason voles appear on so many menus has to do with their diet. Because they eat largely low-calorie green vegetation, they feed during activity periods both day and night; both nocturnal and diurnal predators are supported by this accessibility.

Meadow vole sign is easily found and is especially apparent in the densest grass stands, which they favor. Vole runs or trails crisscross their territories and are kept open by frequent grazing. Small piles of clippings or haystacks are common along the runs. The animals create these haystacks by cutting lengths of grass stalks into sections, in order to lower the seed heads to the ground without risking exposure. In any case, meadow voles are not climbers, preferring to stay close to the ground. Latrine areas with neatly piled, greenish scat are also found along the runs of this orderly little creature.

Voles build grass-thatch nests above ground, but also are known to build shallow below-ground nests. The above-ground shelters seem to be preferred, and the underground nests may be a fallback position for those mid-winter melts, when the snow cover is lost; grass houses are little protection from the cold of winter without an insulating layer of snow. Several times, while hiking across snowfields in alpine meadows early in summer, I noticed isolated holes in the snow. The melting snow had collapsed the roofs of snow-cover over vole nests. In the nests I found dead voles, presumably victims of cold nighttime temperatures.

Most people give little thought to the significance of this tiny animal. They certainly lack the size, charisma, and iconic stature of bison, but they are not without their admirers. Admittedly, I am one. The other members of the fan-club are mostly the profusion of predators that voles inadvertently support.

A small sidewalk prairie also may seem insignificant, but we should never assess significance by size alone. The nearly complete destruction of tall-grass prairie in Minnesota took place largely during my grandfather's lifetime, and we will never see its return to original form or size. But since the 1970s, the idea of restoring prairies big and small has taken hold. I am optimistic that they will continue to proliferate and, like the voles, make up for size and charisma with great numbers.

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<sup>1</sup>On occasion, I have found vole skulls in crow pellets and puzzled over them, as crows do not possess much in the way of hunting prowess. The mystery resolved one day while I was mowing a first-year prairie planting with a brush hog behind my tractor. Several crows watched from a tree line and, with the grass canopy cut, it was possible for the opportunistic and canny crows to succeed. They caught three while I watched. Whenever cover is removed by mowing or burning, voles are extremely vulnerable.