

Enter Orchis

News from Faville Grove Sanctuary

Madison Audubon Society

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May Day MAYDAY!

With burn season behind us, we'll put out one last mayday to our many volunteers before heading into summer.

The emergency? Garlic mustard, what else? So join us for a May Day garlic mustard pull as we continue our quest to eradicate this invader from Faville Woods. We will meet this Saturday, May 1, from 9:30 a.m. to noon [along Highway 89 between Woodland and North Shore roads](#). Bring work gloves and a trowel



Trilliums in Faville Woods

or dandelion-digger if you have one. We should see many native spring ephemerals in the woods; the warblers may be starting to come through; and, if you're lucky, you might even find morels to take home and enjoy. In any case, it promises to be a fun spring morning in the woods.

Regular Wednesday work parties will continue through May 19. Our summer intern crew starts May 24. If you would like to join the crew any weekday during the summer to help out and meet some enthusiastic young outdoorsmen and women, contact Lars (favillegrove@live.com or 608-220-9563).

1st Quarter Report

We've always promised that this newsletter would appear sporadically, and we're making good on that promise! Much has happened in the sanctuary since the last issue came out in January, so consider this more or less our first quarter report.

Many volunteers kept up the work in the Lake Mills Ledge Savanna south of Prairie Lane and it now looks like a new place, with open-grown oaks spreading over the quartzite outcroppings. We have done some herbiciding of brambles to prevent them from overtaking the savanna floor now that



Volunteers Matt Weber (2009 summer intern) and Judd Lefeber rolling a large log.

they will receive more sunlight. We have spread more seed of native savanna forbs and grasses that were collected last fall. We've planted 50 hazelnut seedlings near the driplines of some of the oaks where they would have grown naturally and where they will help to slow future fires before they hit the trees. And we have burned at least the parts of the savanna north and south of Prairie Lane where there were enough oak leaves to carry a fire. We plan to collect much more savanna seed this fall, and to continue cutting next winter, especially of the remaining, overcrowded firewood sized trees.

We have also done a lot of cutting in two fencerows—one

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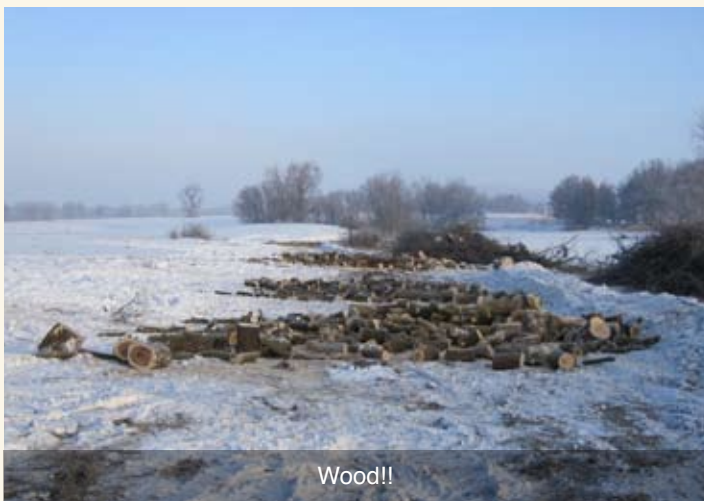
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along Prairie Lane, and the other along the west edge of Paradise Pond and the old fenceline to the north (see the photos on this page and the following two pages). Unlike the savanna projects, where equip-



Wood.

ment tires could damage the roots of the oaks that we are trying to preserve, we have been able to have volunteers with skid steers come in and make much more rapid progress in these fencerows. In two long weekends with only a modicum of help from other



Wood!!

volunteers, neighbors Don Horack and Tim Schroeder removed about 40 cords of mostly softwood firewood from the Paradise Pond fenceline and mechanically stacked most of the brush. We were then able to stack the remaining brush by hand in a single Saturday morning volunteer party. This spring we have seen three pairs of meadowlarks singing and carrying on in the area around Paradise Pond, where in recent years we have seen none.

Along Prairie Lane west of the savanna, another neighbor, Paul Keller, cleared a fencerow of mostly black locust trees and made lots of beautiful firewood

of the thorny tangle. Paul also planted several home-grown, six-foot tall bur oaks near the Prairie Lane parking area in exchange for cherry firewood that other volunteers removed from the savanna, so your hard work pays off in multiple ways. And for the first time, we have a woodcock performing every evening along upper Prairie Lane near the cleared area.

Burn season was a challenge once again, with more south winds than we needed, more high winds and low humidities than we needed, and with the prairie plants developing about two weeks ahead of schedule. We nonetheless managed 8 burns covering about 225



Wood!

acres, knocking back lots of brush, and stimulating growth of the native prairie and savanna plants.

And once again, it looks like we have a terrific summer intern crew lined up. With more than 100 applicants, it's as wonderful to see so many young people interested in helping to restore our natural world as it is difficult to turn down all but five. We're looking forward to sharing the sanctuary with those talented, enthusiastic, and lucky five this summer.



And still more wood!!!

Peat, pollen, snipe, and the future of oak ecosystems

Last November at Faville Grove Sanctuary we filled in a series of drainage ditches stretching three-quarters of a mile in the Ledge Lowlands along Prairie Lane. With nowhere to go, groundwater and precipitation began to collect, pooling up and re-saturating the peaty soil of the former wetland. Within only a few days, a tiny bubbling spring began to emerge from the earth, sending a trickle of water into the seeded bare soil. Weeks later, all laid dormant under a blanket of deep white snow with the exception of the tiny spring as the ground continued to release a gentle rivulet of earth-warmed water. For most of the winter, the spring remained visible as the seeping waters exposed the naked black soil against the white backdrop of the landscape.

Now the snow has soaked into the earth and spring rains and a steady influx of groundwater puddle in our recovering wetland, where last year and for decades prior, water was quickly shunted off to a series of drainage ditches and dumped into the Crawfish River. Taking advantage of the waterlogged fields, the Wilson's snipe has arrived in small flocks from their wintering grounds and descended upon the newly created wetland, where they probe the peaty soil for small invertebrates.

By April, the haunting winnow of the snipe, produced not by song but by the open fan of the tail feathers, could be heard in the twilight hours as the first arriving males spar for prime mating territory throughout the floodplain.

Naturalists will often track the progression of natural phenomenon as spring events unfold: the date of first open water on a local lake, the arrival of bluebirds to freshly cleaned nest boxes, and the emergence of the first pasque flower through warming, rocky soils. For a winter-weary naturalist, recording these events is valuable not only to boost the spirits, but also holds scientific and practical significance. Nature is also a dutiful record keeper, with a library of notes that span to the end of the Pleistocene, when life returned to colonize the raw landscape—a clean slate following

the retreat of the last glaciers. In less disturbed locations, if you follow the bill of the snipe deeper into the peat you may find layer upon microscopic layer of pollen deposits, preserved in an oxygen-free environment. Under careful examination, scientists can identify the type of pollen in the various layers and begin to understand changes in the local vegetation since the end of the last ice age. In southern Wisconsin, the deepest, and therefore oldest, layers of pollen are largely from spruce and fir when the climate was still cool and conducive to the growth of conifers. As you rise higher in the peat to more recent deposits, pollen composition shifts to oaks and hardwoods, indicating



Saturated soils greeted returning snipe below the Lake Mills Ledge Savanna.

a major vegetation change in response to the powerful forces of a warming climate.

While walking under a canopy of oaks on a cool April morning it's easy to appreciate these stately giants with their flowers (called catkins) dangling in the breeze, budding twigs beginning to shield the last clear view of their massive outstretched arms, perhaps the very same limbs that supported roosting flocks of passenger pigeons, fattened on abundant acorns, over a century ago. An oak can live to be well over 300 years old, and during that time it leaves its signature in every patch of peaty soil when rains of pollen are carried by spring winds and deposited in the archives of our landscape.

Oaks leave their mark on us as well. Memories of

(Continued on page 4)

(Continued from page 3)

this magnificent tree have warmed our hearts and bodies for generations. Despite our fondness for this signature tree of the southern Wisconsin landscape, the future of oak ecosystems throughout the state remains uncertain. With the cessation of cleansing fire and the encroachment of exotic brush, dense shade prevents the next generation of oak seedlings from taking root. Look for young oaks in any local woodlot and the you might find only a few gaunt individuals, desperately reaching for light, with few remaining leaves and lower branches already lost to the shade. The outstretched limbs on the lower branches of mature oaks face a similar fate as they are overtaken by invading, shade-tolerant trees. The future of the oak in southern Wisconsin, like so many other features of our natural landscape, depends on our active management. Thinning trees and brush (including some native species) and reintroducing the healing quality of prescribed fire will go a long way to insure that the oak remains the flagship tree of southern Wisconsin. When the last pre-European settlement trees have fallen to the earth, the record of our stewardship will remain for the scientist and the snipe.



This sturdy, young bur oak at Faville Grove is faring better than most of its classmates across southern Wisconsin.



Thanks!

Thanks to Jae Ames of Bedrock Hay and Landscaping in Fort Atkinson for a great job rebuilding the stone retaining walls at Audubon's Prairie Lane House—at a discounted price. Local quartzite boulders replaced flagstone in the upper walls.

Many Happy Returns!

A pair of whooping cranes recently returned from Florida spent a couple of days poking around the edges of the eastern part of the sanctuary. Several birds were spotted in the general vicinity last spring as well. As their numbers increase and we create more and better habitat at Faville Grove, we hope to see many more of the magnificent birds in the future!

Deciding what to restore

Habitat is in the eye of the beholder: A brown creeper's heaven is a bobolink's hell. As ecological restorationists, we inevitably find ourselves taking sides, creating habitat that favors one group of species over another. How do we decide what sort of habitat is most appropriate to restore in any given location?

The goals of ecological restoration are the subject of endless debate in the ecological literature. Ecological systems are far more complex than we will ever understand, let alone be able to design. An undisturbed prairie, for instance, may be composed of dozens of vertebrate species, hundreds of plants, thousands of invertebrates, and tens of thousands of microbial species, all enmeshed in a web of interactions. Ecological systems are also highly adapted to location: to soils, slope, hydrological conditions, climate, and other local conditions, so existing models tend not to translate well from one area to another.

Given this complexity, in order to find a model of a

stable, functioning ecosystem to guide our restoration efforts, we generally turn to the past and try to discern what habitats existed at a particular spot historically, and the usual point in time that restorationists in North America look to is the period immediately before European settlement of the continent.

Even before Europeans arrived on the scene, humans had an outsized effect on natural systems here: More likely than not, they played a large role in the extinction of the Pleistocene megafauna in North America; they were highly mobile, carrying plants, animals and microbes with them as they traveled; they set fires that dramatically altered ecosystems on large scales; they hunted and fished; they gathered plants for food, fiber and medicine; and they farmed large areas. But despite their impacts, Native Americans lived in a world that fundamentally remained diverse, that functioned in ways that could be sustained over time, and that maintained its ability to evolve and adapt as conditions (physical, biological and cultural) changed.

Changes in ecological conditions since European settlement have outpaced ecosystem evolution, leading to a general breakdown in ecosystem function and stability. Along the way, these changes have favored some species and seriously harmed (and in a few cases, eliminated) others. By restoring an area to pre-European conditions, we tend to reverse these biases, improving habitat for the most threatened species, even if, at times, it comes at the expense of more common ones. It is no coincidence then that this model for

(Continued on page 6)



Paradise Pond as the cutting began.



Paradise Pond after the cutting was done—black oaks and a few willows remain.

(Continued from page 5)

restoration dovetails nicely with our near-term goal to protect threatened and endangered species, but it also addresses a longer-term need.

As restorationists, our ultimate goal is not so much to establish outdoor museums of past ecosystems, as fascinating as those museums might be. We are not trying to set back the clock, as the saying goes, but rather to rewind the clock; to reset the stage of a functioning ecosystem where evolution can act out once again, maintaining a balance this time around in the face of ongoing, and we hope not too abrupt, change. Viewed in this context, it only makes sense to return the system as best we are able to its most recent, fully functioning state, which is to say, to pre-European settlement conditions, rather than to some earlier, perhaps pre-human, state.

This also happens to be the state about which we have the best information in the form of historical records and remnant ecological communities. At Faville Grove, pre-European conditions included a wide variety of habitats, much as we see today, but habitat types existed in much larger, unbroken blocks in the

past. The extent of habitat loss and fragmentation during European settlement is apparent from two maps of Faville Grove that were drawn by Art Hawkins when he was a graduate student of Aldo Leopold (see the following pages). One map shows the area as Art saw it in 1938, and the other as the area appeared in 1838, as best he could determine through his ecological studies and extensive discussions with long-time area residents. The trends he documented continued after 1938, especially in the large Crawfish Prairie area in the northeast corner of the maps, only beginning to reverse with the initiation of restoration efforts at Faville Grove Sanctuary in the 1990s.

We are fortunate at Faville Grove to have both detailed historical information about past conditions, as well as a number of high-quality remnant natural areas within the borders of the sanctuary and nearby to inform our restoration efforts. This information is not always complete, clear and unambiguous, but it nonetheless provides as sound a basis as we can reasonably expect for our restoration decisions, and together with the singing of meadowlarks and other recovering species in the sanctuary, gives us confidence that we are making the right trade-offs along the way.



Resculpting a masterpiece

Not only did the landscape inhabited by the Native Americans function well, it undoubtedly was sublimely beautiful as well. Our efforts to restore the landscape at Faville Grove to pre-European settlement conditions are beginning to reveal the beauty of the landforms that has been all but lost behind straight tree lines and solid masses of brush. We don't realize the full extent of the aesthetic loss until we experience the shock that comes with seeing the brushy screens removed and the fragments of the landscape connected again—a refreshing, exhilarating, even titillating shock. Suddenly the eye is free to follow the full, soft, sensuous curves of the land; to explore layer upon layer until earth meets sky; to run to the far horizon of the level floodplain and back in a flash. We no longer walk through the unfettered landscape; we float, the vistas changing constantly as we move. The mind opens to the depth of geologic time that constructed this masterpiece. We are lost, disoriented, liberated. Imagine how the land feels!

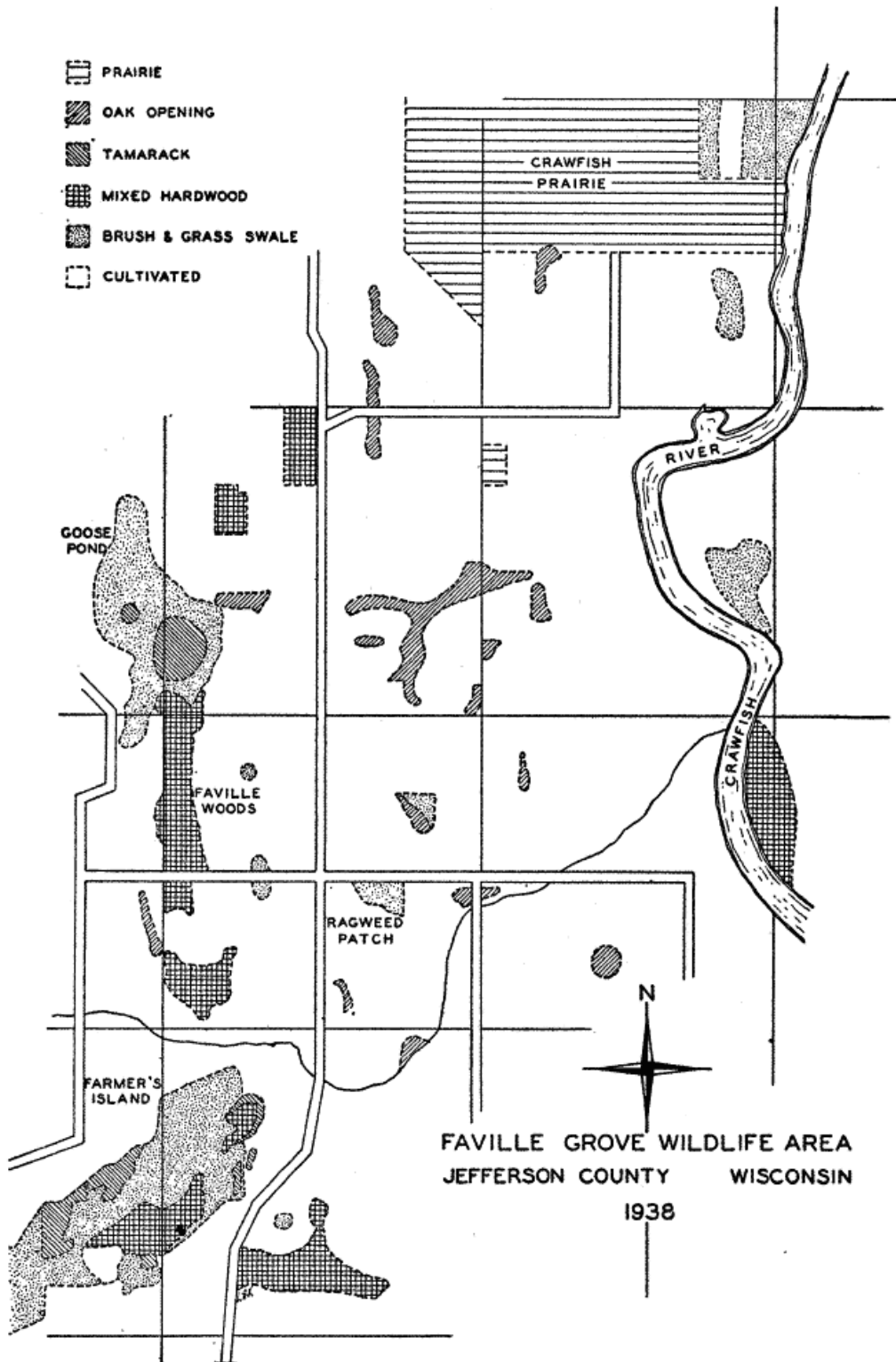


FIG. 2. The Faville Grove landscape as it appears today, the result of a century of agricultural development.

From Arthur S. Hawkins, A Wildlife History of Faville Grove, Wisconsin, *Transactions of the Wisconsin Academy of Sciences, Arts and Letters*, v. xxxii, 1940, pp. 29-65.

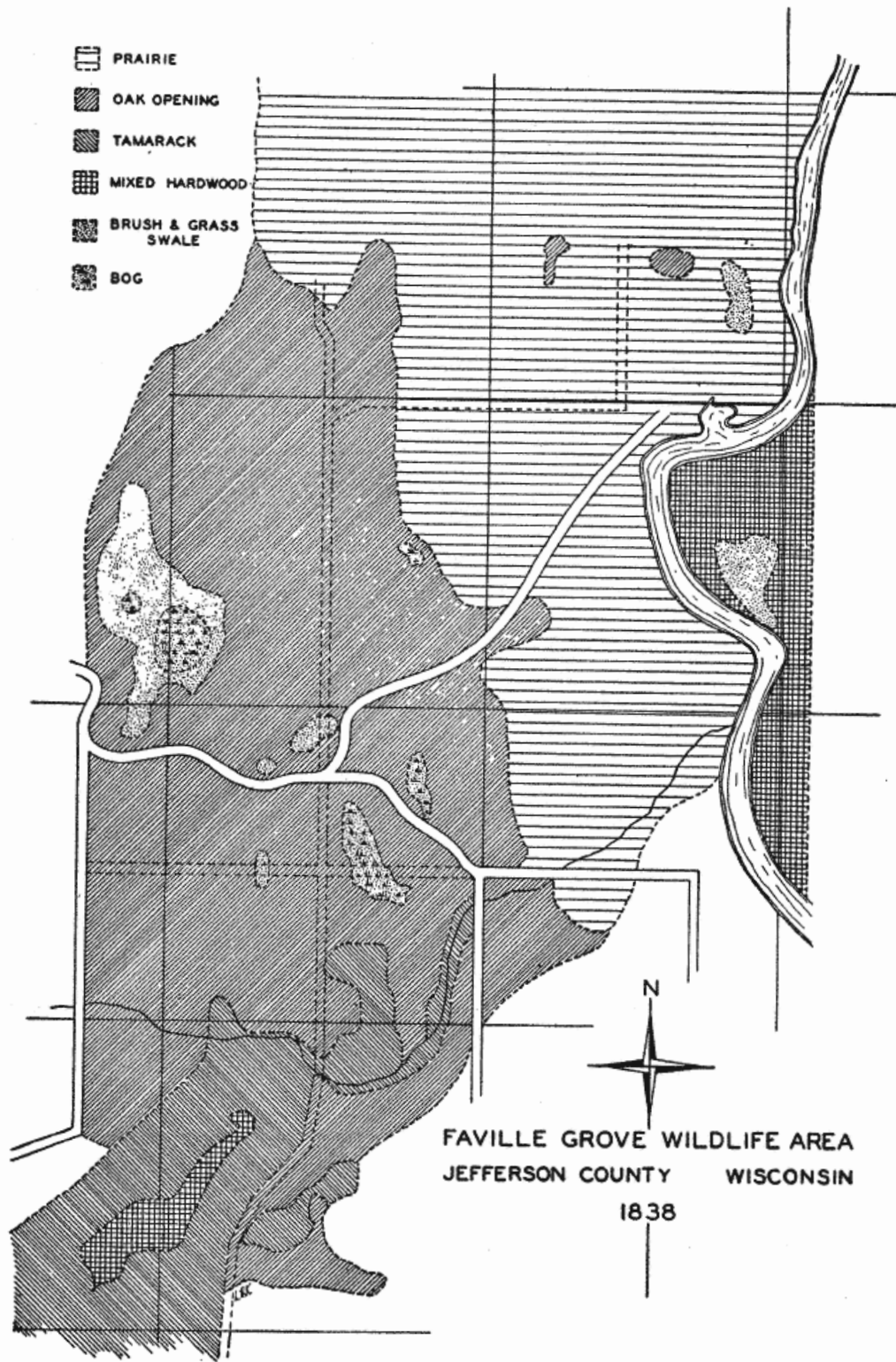


FIG. 1. The Faville Grove landscape as it appeared to the first white settlers when they arrived a century ago.

From Arthur S. Hawkins, A Wildlife History of Faville Grove, Wisconsin, *Transactions of the Wisconsin Academy of Sciences, Arts and Letters*, v. xxxii, 1940, pp. 29-65.

Recent sightings at Faville Grove



After a long day clearing and burning brush in the Lake Mills Ledge Savanna.

In 1940, Aldo Leopold wrote his most melancholy essay, *Exit Orchis*, published as cows were about to be turned out to pasture on the Faville Grove Prairie. Today at Madison Audubon Society's [Faville Grove Sanctuary](#), we are working to increase habitat for orchids and all their ecological associates. *Enter Orchis* is published sporadically and distributed electronically to friends of the sanctuary. The newsletter is a collaborative effort by Roger Packard (rpackard@uwalumni.com) and David Musolf (dmusolf@uwalumni.com), volunteer sanctuary managers and Lars Higdon (favillegrove@live.com), restoration ecologist and land steward. Please pass it along to anyone you think may be interested. We welcome pictures, articles, and other contributions, as well as comments and address updates. And we encourage you to stop out for a visit soon!