

Natural Area Preservation News

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Winter 1996

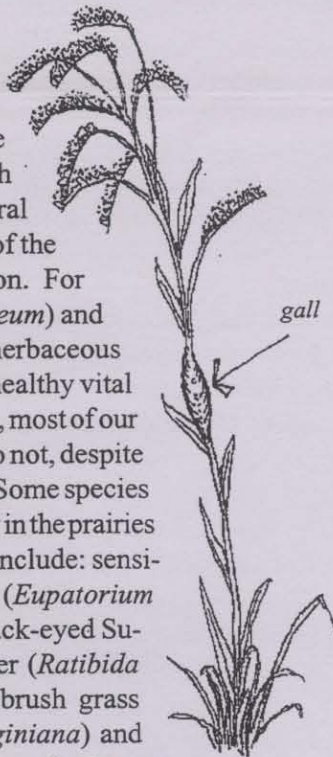
The mission of the Natural Area Preservation Division is to preserve, protect, and care for the natural areas of Ann Arbor, especially those in the City's park and recreation system.

Reflections From the Field: Walking in a Winter Wonder-land

by Cara Rockwell

Some people might find it ironic that the author of this article is a displaced Southerner. I admit that writing about nature in winter intimidated me at first, considering that I have only one Michigan winter's experience to draw from, but I discovered from my reading and outdoor excursions that there are many unsung pleasures of winter walks.

Perhaps the most noticeable seasonal changes occur in plants, from the beautiful arrangements of bare branches in the deciduous trees to the dried silhouettes of native flowers. And although these sights might lead one to think that the natural landscape is desolate and devoid of life, much of the vegetation is in a continual state of regeneration. For example, prairie dock (*Silphium terebinthinaceum*) and big bluestem (*Andropogon gerardii*) are both herbaceous members of the prairie community that retain healthy vital roots throughout the bitter temperatures. In fact, most of our native prairie plants are indeed perennial and do not, despite all appearances, die after the onset of winter. Some species to look for, with distinctive winter forms not only in the prairies but also in the savannas, forests, and wetlands include: sensitive fern (*Onoclea sensibilis*), Joe-pye weed (*Eupatorium maculatum*), beebalm (*Monarda fistulosa*), black-eyed Susan (*Rudbeckia hirta*), grey-headed coneflower (*Ratibida pinnata*), milkweeds (*Asclepias spp.*), bottlebrush grass (*Hystrix patula*), thimbleweed (*Anemone virginiana*) and vervains (*Verbena spp.*). A special treat that is prevalent among the goldenrods (*Solidago spp.*) is the formation of galls. The gall is a swollen section of the stalk, which is the site of a physical or chemical irritation around which the plant grows a deformity. These oddities are caused by insects, which use them for food and shelter while the insects are still developing. Many galls are in existence during the other seasons, but are much more recognizable in the winter.



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Parks & Recreation
CITY OF ANN ARBOR

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Natural Area Preservation is funded by the Ann Arbor Department of Parks and Recreation's voter approved 1993-1998 Park Maintenance and Repair Millage.

Natural Area Preservation has a corps of volunteers who assist us with stewardship activities. From March through November we hold volunteer stewardship workdays on weekends each month. In spring and summer we conduct inventories of nesting birds, butterflies, frogs and toads. We welcome your participation.

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Winter Wonder-land

As for the trees, which gave us such a spectacular display of color earlier this year, they have already formed next year's leaves and flowers. The next time you are standing next to a bitternut hickory (*Carya cordiformis*), check out its distinctive sulfur-colored end buds as well as its shield-shaped leaf scars, which are common to many of the Hickory species. Winter is also an excellent time to brush up on bark identification skills. Some common tree species that are easily distinguished by their bark are the shagbark hickory (*Carya ovata*), American beech (*Fagus grandifolia*), black cherry (*Prunus serotina*), red oak (*Quercus rubra*), and the black willow (*Salix nigra*). Try tasting the bark, too! The spicy flavor of a sassafras (*Sassafras albidum*) is

Coordinator's Corner: Giving Thanks and Planning for the Future

Here in the Midwest, as the landscape changes from green to brown to white, this is a season of giving thanks for the harvest, reflecting on the past year, and planning for the next.

If you missed the Volunteer Appreciation Potluck in November, you missed what one of the 50 attendees dubbed "the best potluck in Ann Arbor." Besides the good food, the evening gave NAP the opportunity to thank all the people who have given of their time and energy to help inventory and restore the natural ecosystems of the parks.

It has been a tremendous year for NAP, thanks to generous volunteers and dedicated staff. In addition to their field work (workdays, prescribed burns, seed collections, inventories, trail work, etc...), staff have found time to publish this newsletter and also produce a major document entitled, A Guide to the Natural Communities of the Huron River Corridor. (Look for it next spring.)

As the field work tapers off and we close the door on the outdoor season, the office work picks up, we open the door on next year: repairing equipment, compiling inventory data, developing stewardship plans and burn prescriptions, drawing maps, writing grant proposals, budgeting, and preparing training sessions for next spring.

To all the NAP staff and volunteers who made 1996 so great - Thank you. We hope to see you back in 1997!

A special thanks to Zingermans Bakehouse for supplying the wonderful and tasty desserts for the Volunteer Appreciation Potluck. Thanks for your support!

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unmistakable. And if the characteristics of the buds and bark still elude identification, look at the formation of the tree itself. The American elm (*Ulmus americana*) is noted for its large, majestic arching branches, something that can be appreciated more easily after its leaves fall off.

Winter, because of the snow it brings to our Midwestern climate, allows us a glimpse into the secret movements of our local fauna. Tracks in the snow are an exciting record of a particular animal's steps. Some common tracks to look for in the Ann Arbor area are white-tailed deer, rabbit, raccoon, opossum, and striped skunk, as well as various species of squirrels, mice, and shrews. And not all birds head south for the winter -- blue jays, cardinals, black-capped chickadees, and nuthatches are just a few of our year-round residents. Winter is a good time to spot raptors, too. One of their favorite prey items, the cottontail rabbit, is more exposed in an open setting while it forages for food, attracting the predatory birds.

There are so many great things to see and do this time of year that it's easy to leave out other enjoyable activities or species that are worth identifying. In that case, it's best just to get outside and start looking around. Any of Ann Arbor's parks are wonderful for "winter wondering". *Check out the Winter Reading list on page 5 for guides to identifying the winter wonders you will see.*

Park Focus: Barton Park

This article is taken from the upcoming publication: *A Guide to the Natural Communities of the Huron River Corridor*. This publication was written by Natural Area Preservation staff. We hope to get the guide published in the near future.

The oxbow area in Barton Park is a patchwork of natural communities, including: old field, dry prairie, wet meadow, wet shrubland, emergent marsh, and mesic forest. In the 1994-1996 plant inventory, 309 species of plants were recorded here, 228 of them native.

The majority of the oxbow area is classified as old field. Clues from remnant plants suggest that it used to be prairie, but became an old field after being abandoned as farmland. Still, there are many native wildflowers to enjoy. The large blue-pink flowers of robin's plantain (*Erigeron pulchellus*) are especially striking in the early spring. The fragrant flowers of bee-balm (*Monarda fistulosa*), the bright yellow flowers of black-eyed Susan (*Rudbeckia hirta*), and the white flushed with violet flowers of hairy beard-tongue (*Penstemon hirsutus*) highlight the summer. In the fall, the brilliant yellow color of showy goldenrod (*Solidago speciosa*) lights up the landscape.

In spring 1996, NAP staff burned 37 acres of this park to drive back the hawthorn (*Crataegus*), buckthorn (*Rhamnus*), and honeysuckle (*Lonicera*) shrubs which were closing in on these sun-loving wildflowers. Well into the future, the effect of this and future burns will be apparent in the field of dead, or at least charred, shrubs visible from the main trail.

Closer to the railroad, the old field has recovered to what can once again be called dry prairie. The main distinction here is the thick stand of big bluestem grass (*Andropogon gerardii*) which dominates in patches. This is the densest stand of this six-foot high grass that you will find in any city park. Big bluestem is probably the most widespread of all the tall prairie grasses. It was once quite abundant in the tall-grass prairies which stretched for hundreds of miles across the Midwest. Catch it at its peak of color and height in September and October. The proximity of this prairie remnant to the railroad tracks is not mere chance. Sparks thrown from passing trains would have ensured that this area historically burned with enough regularity to keep out the encroaching shrubs.

As the river worked its way out to its current path with ever-widening swaths, it left behind a few former channels that are slightly lower and wetter than the old field and dry prairie. Here the wet meadow community dominates. These rich areas are home to many birds and butterflies, as well as numerous moisture-loving plants such as sneezeweed (*Helenium autumnale*), the pale pink, flat topped flowers of Joe-pye weed (*Eupatorium maculatum*), and numerous sedges (*Carex*). Also look for the less common tufted loosestrife (*Lysimachia thyrsiflora*) and the yellowish flowers of swamp-betony (*Pedicularis lanceolata*).

Like prairies, wet meadows are also maintained by fires. Where no fires have occurred recently, the wet meadows have been invaded by shrubs to the point where they are now classified as wet shrubland. Red-osier dogwood (*Cornus stolonifera*), elderberry (*Sambucus canadensis*), and willow (*Salix*) are the most common native shrubs here. Identify red-osier dogwood by its bright red stems. This is also the only known site in Ann Arbor



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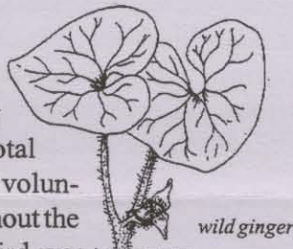
1996 Inventory Highlights

by David Borneman

The 1996 plant and animal inventories are officially finished, but the data compilation is not. If you helped us survey plants, butterflies, frogs and toads, or breeding birds this past year, PLEASE send in your data as soon as possible so we can wrap up this effort. A few preliminary findings:

About 20 new species of plants were located in this third year of looking. They include grass-of-Parnassus (*Parnassia glauca*) at the sedge meadow in the Foster section of Barton Park, wood violet (*Viola palmata*) at Black Pond Woods, and several unusual grasses and sedges identified by the keen eyes of our main botanist, Bev Walters. This brings our total known plant diversity in the natural areas of Ann Arbor to about 950 species, including 15 which are endangered, threatened, or special concern in Michigan. In addition to these 20 species new to the city, many were seen for the first time at a particular park. For example, wild ginger (*Asarum canadense*) and wood anemone (*Anemone quinquefolia*) showed up at South Pond following our prescribed burn there this spring. Butterfly milkweed (*Asclepias tuberosa*) returned to a savanna in Black Pond Woods, and false Solomon's seal (*Smilacina racemosa*) came back to Bandemer following successful spring burns in both of these parks.

Regarding the animal inventories, there were no new frog species found, but we already have 8 of the 11 species found in southern Michigan and it is unlikely we'll find any more. We did, however, double our total number of sites inventoried, thanks to the efforts of 30 volunteers who adopted a group of wetlands to monitor throughout the spring and summer. One new species of breeding bird was confirmed this year, namely the Green Herons nesting near Lakewood Park. Other bird and butterfly species may turn up after we get everyone's data. A big thank you to everyone who participated this year. Watch the spring newsletter for dates to kick-off the 1997 inventory effort.



wild ginger

Management Issues

by Catriona Mortell

The Cook County Forest Preserve and The Illinois Chapter of The Nature Conservancy have a working partnership to manage some of the Forest Preserve land holdings. This partnership includes a large volunteer stewardship network that works to restore areas of the forest preserves back to native oak woodlands and prairies. This working relationship was thought to be going quite well, until recently. It seems not all the Forest Preserve Board members were up-to-date on the management of the sites. When the public questioned and criticized the restoration activities, board members found they didn't have all the answers. Disagreements as to how the urban natural areas should be managed have brought ecological restoration to public hearings/meetings and brought a stop to many stewardship activities.

The stewardship activities in Chicago, as mentioned above, are to restore native oak woodland and prairies. The stewards believe ecological restoration is the process of returning an area to a viable, diverse and healthy natural community.

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Volunteer Stewardship - 1996 Highlights

by Catriona Mortell

With the 1996 volunteer field season all but completed, we've been looking back at our year's work. Enthusiasm, skill and time volunteers put into to the program has contributed over 1,000 hours and lots of energy into the NAP program. As with donated dollars to a cause, in restoration it is the donated hours that count. Park natural areas are dependent on hours of labor and love in order to re-establish viable native communities.

We had a busy spring season and kept on working throughout summer and fall. For 1996 we had a total of 690 hours at stewardship workdays, plus 228 and 1/2 hours from the volunteer burn crew, with the contribution the inventory volunteers the total is over 1,000 hours! Three hundred and twenty four volunteers participated in our events this year; many are repeat volunteers. We'd like to continue to have more repeat participation. NAP plans to offer specialized steward training next year to volunteers who can contribute between five and ten hours each month to the stewardship program. If you would like to learn more about volunteering as a steward please contact Catriona at 996-3266.

We'd like to involve more local businesses and community groups in our stewardship activities, so please help to spread the word of volunteer stewardship. Tell your friends and neighbors about the program, and help us to make the '97 season even stronger with volunteer participation.

Local Stewardship

Although NAP has not yet scheduled weekend workdays for the winter, try a Nature Conservancy workday at a local preserve. Work sessions will be held at the Ives Road Fen near Tecumseh in December and January. At the Hillside Prairie near Ypsilanti in January and February. Finally at the Nan Weston Preserve at Sharon Hollow near Manchester in February. Contact Liesl Kardatske at the Michigan Chapter office at 517-332-1741 for more information.

Winter Nature Reading

By Malin Ely

Nationwide, land managers have practiced ecological restoration in their natural areas, reacting to the rapid changes human activity has placed on natural systems. Much like the decline in tropical rainforests, US natural areas are also imperiling unique biological systems. Those working in the Cook County Forest Preserves believe their work to be a positive one to both human and natural communities.

While there wasn't wholesale opposition to restoration, there was opposition to specific practices:

- The biggest opposition was to the removal of trees and shrubs. Some restoration activities in the Cook county area have been to restore areas back to prairie, and open oak woods. Much of the forest preserves has become thickets of shrub and a variety of tree types. People were at odds as to how removal of trees in a forest preserve could be called restoration. Others could understand the removal of some types of invasive trees and shrubs, but opposed the removal of native species, anticipating a creation of an "oak monoculture."

- Another area of opposition was the use of herbicides. In the stewardship activities herbicides are used to treat cut stumps in order to discourage resprouting. Opponents questioned how, when and at what strength they were being applied and who was applying the herbicide. See our summer newsletter issue for information on herbicide use in restoration.

- Deer are a tremendous problem in the forest preserves, and many have been removed over the last years. Within the islands of forest preserves the deer population gets so large that starvation is rampant. Most of the opposition to deer removal stems from the methods of removal.

Paul H. Gobster, a research Social Scientist with the USDA Forest Service in

Winter is upon us here in southeast Michigan. The leaves have fallen, the herbaceous plants have dried up, the ground is frozen, and the days are short. Now is the perfect time to curl up with good books, but it is also a great time to get out and explore natural areas around Ann Arbor. What follows is a list of several excellent winter field guides which will help you become a winter naturalist. For curling up with a book indoors, we have included several reading recommendations on natural area preservation and natural history in our region.

The most basic of winter field guides is The Winter Tree Finder, by May Theilgaard Watts and Tom Watts (Nature Study Guild, 1970). This pocket-sized book will show you how to "key out" deciduous trees (trees that lose their leaves at the end of the growing season) in winter using identifying characteristics such as buds, leaf scars, twigs and overall tree shape. The format uses drawings and pictorial keys - it is surprisingly easy to use and will fit in the pocket of your coat when you go out for walks. Lauren Brown's Weeds in Winter (W.W. Norton & Co., 1976) will help identify many local herbaceous plants as they appear in winter - dried out on their stalks. This book also includes many of our local exotic species, as well as some inappropriate planting recommendations using species which are problem invasives in southeast Michigan (so use this as a field guide, not as a planting guide!). Donald W. Stokes has written a wonderful book called A Guide to Nature in Winter (Little, Brown and Co., 1976). This guide, part of the Stokes Nature Guides series, includes eight sections, each one covering a different aspect of nature in winter: winter weeds, snow, wintering trees, evidence of insects, winter birds and abandoned nests, mushrooms in winter, tracks in snow, and woodland evergreen plants. Stokes includes vivid descriptions and lots of small illustrations (the guide looks a little like those old copies of Winnie the Pooh with little pictures of Pooh and Piglet in the forest!). For more on recognizing and interpreting wildlife clues in winter, check out Richard P. Smith's Animal Tracks and Signs of North America (Stackpole Books, 1982). This guide includes drawings and photographs of the tracks of most of our local wildlife species, many of them illustrated in winter on snow. It also includes information on animal scat and other winter clues to the presence of wildlife.

A non-field guide recommendation is Miracle Under the Oaks: A Revival of Nature in America by William K. Stevens. This book tells the story of, as a NY Times review described, "more than 3,000 volunteers, working weekend after weekend in the forest preserves of metropolitan Chicago to restore 100,000 degraded, trash-strewn, buckthorn-infested acres to the magnificent prairies and oak-shaded savannas that once grew there." Does this sound familiar? This book chronicles a prairie restoration similar to the ones NAP is performing here in Ann Arbor, complete with prescribed burns, invasives species control, and a whole lot of help from volunteers! This book is an inspiration to all of us working to do ecological restoration. Next time you wonder about all of that



buckthorn you have been grubbing out during a NAP workday, you can read the words of Walt Fauerso, a volunteer on the Chicago project: "We defy our aches and pains, we defy the aging process and we're going to keep going as long as we can. So in a symbolic way, we create our own immortality. That, I think, is the ultimate thing that brings us back to the

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Restoration Technique: Conservation Evaluation and Planning

by David Mindell

As winter descends upon Ann Arbor parks, active restoration activities begin to taper off. This change of gears offers a great opportunity to assess this year's successes and failures, to take stock of what we were able to complete and what is yet to be done, and to begin to plan for next year's projects.



In evaluating our completed projects, we examine the varying degrees of stewardship employed at the many sites targeted and look at the effectiveness of that stewardship. Some areas such as Furstenberg, Black Pond Woods, and Foster Parks were sites of intensive clearing by NAP's conservation crew. Each of these areas had become thickly overgrown with shrubs, making it impossible for fire to carry through the sites. The crew cleared many of these thickets, radically changing the character of the site. Barton, Bird Hills, Bandemer, Gallup, and Brown Parks are all examples of sites where NAP continued smaller scale work in areas that were targeted last year. These projects typically included trail construction or restoration. Still a third category could be classified as neighborhood workday sites where stewardship activities were either continued from previous seasons or initiated with a new group of volunteers. For each site we must ask whether the energy invested there was appropriate given our limited staff resources.

We must also consider the effectiveness of our work. Did we meet our management objectives at the different sites? Did we have the right objectives? Were the areas that were cleared as large as we expected or hoped? Did we implement the proper removal technique for that site (i.e., grubbing vs. herbicide use vs. fire, etc.) considering ecological conditions, ease of implementing the technique, safety, and cost effectiveness? Were we able to safely and effectively use prescribed fire on the units that had been identified for burning? If not, was it because of inclement weather, poor planning, or lack of equipment? Using the answers to these questions and the lessons learned through one more year of experience, we can begin to think of the most viable approaches for our next round of priority sites.

How do we determine what those sites will be? Numerous considerations go into answering this question. We now have several years of plant inventory data for most of the parks in the city. Using this information we are able to rank the parks according to their "floristic quality," with priority given to sites with species that suggest that the site was not too disturbed and to those with high plant diversity. We also try to establish "geographic parity," working in parks in all parts of the city. Our plant, butterfly, bird, and frog experts all make suggestions as to where specifically within parks work should take place. Finally, much of the determination can be based on the "gestalt" of the site, or a "sense" of its quality based on what we see there in total—plants, animals, soil conditions, light availability, park users, slopes, and many other seemingly intangible criteria.

Once sites are identified, we begin to develop management plans to minimize the numbers of non-native species, enhance the natives growing there, and guide the

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Management

Evanston, Illinois, did an initial analysis of the situation and had this to say: "...opponents and proponents have much more common ground than one might initially think. Both share a strong concern for the protection of nature in the forest preserves, and even the most vocal opponents have an appreciation for biologically diverse ecosystems and see the need for some types of management. Their opposition as such is not so much 'whether or not' restoration should proceed, but rather 'how, where, and to what extent.'" Gobster suggests ways of addressing opponents' concerns by promoting better lines of communication, and to put into practice aesthetic conventions in the design of restoration sites. He also states "Other ideas, such as incorporating landscape planning techniques and public involvement, could very well shift the scale, intensity, and location of restoration activities as they are currently practiced. Will this compromise biodiversity goals as now envisioned by public agencies and private restoration groups? It could, but in doing so it might also open up new avenues and new ways of thinking of how to accomplish these goals, such as greater emphasis on partnerships for the restoration of private lands."

What does all this mean for Natural Area Preservation staff and volunteers? Staff are certainly following the Cook County discussion closely. We hope that our own network of volunteers will help us to educate the rest of public about ecological restoration



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earth and fields, a feeling of worthiness and doing something that in a way is eternal.”

Finally, the Ann Arbor Public Library has an out-of-print copy of James Fenimore Cooper's Oak Openings (or) The Bee-Hunter. Despite out-dated language, this 1843 novel includes many rich descriptions of the 19th century natural landscape of southern Michigan, especially in the region around Kalamazoo. Pristine oak savannas and prairies are at the heart of the story: "...the even and verdant sward, that was spread like a vast carpet, sprinkled with flowers...There were glades, vistas, irregular lawns, and woods, shaped with the pleasing outlines of the free hand of nature, as if consummate art had been endeavoring to imitate our great mistress in one of her most graceful moods." For a flavor of the Michigan landscape before European settlement, look into this lesser-known of Cooper's works in the archive section of the Ann Arbor Public Library.

We NAP staff are always on the lookout for good field guides and nature reading - if you have some favorites to recommend, please let us know. In the meantime, happy reading!

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Restoration

site towards a closer approximation of what historical records suggest that it used to be like. We create maps outlining the project locations, goals, and restoration approaches. All phases of the stewardship process—project identification (what do we have?), plan design (what do we want and how?), and restoration (getting there)—require continual reevaluation to ensure that our goals are appropriate and if so, that we are achieving those goals.

The slowed pace dictated by winter offers the perfect opportunity to work on these first two phases. Then, when the skunk cabbage begins to emerge from its long slumber, we are ready to once again begin the process of changing the landscape.

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for another interesting plant, wild senna (*Cassia hebecarpa*). This tall, striking plant grows to 5 feet in height, and is topped with a large cluster of bright yellow butterfly-like flowers.

Woody plants draw moisture out of the soil and release it to the atmosphere as they “breathe.” This can have the effect of drying the soil and lowering the water table. This may be what has allowed a patch of mesic forest to replace the wet meadows and wet shrublands in part of the oxbow area. Tall agrimony (*Agrimonia gryposepala*), enchanter's nightshade (*Circaea lutetiana*) and Jack-in-the-pulpit (*Arisaema triphyllum*) are some of the wildflowers which can be found beneath basswood (*Tilia americana*) and American elm (*Ulmus americana*) trees.

A separate strip of rich mesic forest runs along Huron River Drive on the other side of the river. Look for the tall, straight cottonwood (*Populus deltoides*) trees in this stretch. Two of the common low-growing spring wildflowers here are spring cress (*Cardamine*) and wild ginger (*Asarum canadense*).

At the edge of the river, along the backwater of several small bays, an emergent marsh can be found. In the spring, canoeists may spot blue flag iris (*Iris virginiana*), water smartweed (*Polygonum amphibium*) or marsh marigold (*Caltha palustris*). Enjoy them while you can; this area is showing signs of an infestation of purple loosestrife (*Lythrum salicaria*), which threatens the diversity of the natural area.

Plant life is also present underneath the surface of the water at the river's edge. Canoeists can feel these submerged plants with their paddles and look down to see coontail (*Ceratophyllum*), pondweed (*Potamogeton*), great bladderwort (*Utricularia vulgaris*), and water-milfoil (*Myriophyllum*) growing there.

The oxbow area of Barton Park is home to several butterflies that are uncommon in the area. American and Bronze Coppers are found in the open fields, while the state-threatened Wild Indigo Duskywing can be seen at patches of crown vetch (*Coronilla varia*). Recently, the Little Sulphur and Orange Sulphur, both southern species, have been located in the park.

The brushy thickets adjacent to the prairie and old field are home to the Brown Thrasher, an otherwise rare breeding bird in the Ann Arbor area. According to The Birds of Washtenaw County, Michigan, “This is also one of the few county locations for overwintering robins.” Canada geese, various ducks, and great blue herons are often visible from the southern bridge.



red oak twig



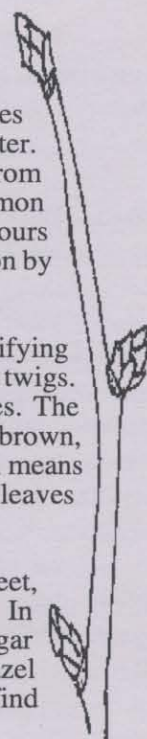
Native Species Challenge: Musclewood (*Carpinus caroliniana*)

by Deb Paxton

As you wander through the woods this winter being overwhelmed by the unrecognizable, leafless trees waving their buds forty feet above your head, rest assured that one tree will always be identifiable in the winter. The bark of the musclewood tree (*Carpinus caroliniana*) is so distinctive that the trees can be spotted from a distance. While sometimes called blue-beech or American hornbeam, the musclewood gets this common name from the bark, which is smooth in texture, yet forms rounded ridges and valleys resembling the contours of a well-muscled arm. The coloring of the bark creates vertical striations that enhance the muscle-illusion by mimicking cord-like muscle tissue.

The bark of a musclewood, while the most outstanding characteristic of the plant, is not the only identifying characteristic. Another noticeable trait of musclewoods is the cluster of seeds growing on the ends of twigs. Each seed is cupped by a light-weight bract designed to catch the wind and carry the seed to new territories. The clusters of these seeds can be spotted from even farther away than the bark. The new twigs are reddish brown, with winter buds being hairy and white edged. The leaves grow alternate and are doubly serrate, which means the teeth have teeth. During the seasons that the tree bears leaves, the combination of the doubly serrate leaves and muscular bark is unmistakable as musclewood.

Musclewood is an understory tree which is slow-growing and short-lived. They get no bigger than 30 feet, and the diameter stays under 30 inches. They can be found in moist upland woods, or in lowland woods. In lowlands, they are found along streams or the edges of swamps. They usually grow alongside black and sugar maples (*Acer nigrum* and *A. saccharum*), basswood (*Tilia americana*), elms (*Ulmus spp.*), and witch-hazel (*Hamamelis virginiana*). Take a walk in Black Pond Woods, Bird Hills, Brown, or Dhu Varren Park to find musclewood.



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