a voice for the natural landscaping movement

Wild Ones
NATIVE PLANTS, NATURAL LANDSCAPES

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inside

Working toward our next 25 years restoring native plants and natural landscapes.

Garlic Mustard: Odiferous Invader

What You Need to Know

Looks like mustard, doesn't it? Crush the leaves and it smells like garlic. Now you know where the name comes from – read on to find out why you don't want it around.

By Maryann Whitman

Garlic mustard *(Alliaria petiolata)*, is an obligate biennial herb of the mustard family *(Brassicaceae)*. Seedlings emerge in spring and form basal rosettes by midsummer. Immature plants overwinter as basal rosettes that stay green and continue to grow during snow-free periods when temperatures are above freezing. All plants that survive the winter produce flowers in their second year, regardless of size, and subsequently die. An average plant produces 400-500 seeds that germinate readily. Maximum production on one plant with 12 stems is estimated at 7,900 seeds. Once dormancy has been broken, seeds will germinate in both light and dark.

Garlic mustard invades forested communities and edge habitat. A native of Europe, the plant has no known natural enemies in North America, is self-fertile and is very difficult to eradicate once established. Thus the best and most effective control method for garlic mustard is to prevent its initial establishment.

Garlic mustard has spread at a nightmarish pace throughout the Northeast, and has now been seen in Oregon. It's important to recognize it at various life stages. *Photo by Betty Czarapata.*

Methods of dealing with Garlic Mustard

In shaded and partially shaded communities lacking garlic mustard, the preferred method is to monitor annually, and remove all plants prior to seed production. Once it is established, the management goal is to *prevent seed production* until the seed bank is depleted, potentially two to five years. *Cutting of flowering stems at ground level* provides the most effective control with minimal or no side effects, but has a high labor cost. Burning and herbicide application both provide control at a lower labor cost, but each has potential drawbacks: fire without sufficient fuel may be too cool to have an effect and may actually increase total presence of garlic mustard, fire that is too hot may alter ground-layer composition; and herbicides may have a negative impact on some native ground-layer species. The method of choice depends on the size of infestation, the type of community invaded, and the work force available. In all cases, control must be continued annually until the seed bank is exhausted.

CONTINUED ON PAGE 4

CONFERENCE & ANNUAL MEETING JULY 14-16, 2006

Wild Ones
NATIVE PLANTS, NATURAL LANDSCAPES

If you have not yet registered for the Wild Ones Conference and Annual Meeting, being hosted by the Greater DuPage (IL) Chapter, in Naperville, Illinois, you can do it on our web site at www.for-wild.org/2006Annual.

You can also choose your tours and day trips, see the schedule of events that have been planned, and find out where to stay. Take care of everything online, or mail in your registration form and fees. We even take credit cards and PayPal! If you have questions or just enjoy hearing a human voice, call Marie Herman at 630-551-4998.

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Big Blue Stem
Andropogon gecardi
Drawing by Pat Armstrong

Wild Ones: Native Plants, Natural Landscapes promotes environmentally sound landscaping practices to encourage biodiversity through the preservation, restoration, and establishment of native plant communities. Wild Ones is a not-for-profit, environmental, educational, and advocacy organization.

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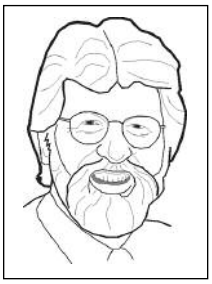
NOTES FROM THE PRESIDENT

The New Wild Ones HQ: A Necessary Starting Point for the Future of Wild Ones



At our recent Q2 Board Meeting it was reported that our income is up while our membership is down (2700+). The reason for this dichotomy is that members are renewing at a higher level than the basic membership. The Board and I thank all those members for giving at the higher levels, and for their vote of confidence in Wild Ones, and the direction that we are moving. I would invite others to follow the example of these committed members and raise your level of membership commitment as a demonstration of your support for what Wild Ones has been, is and can become.

The second part of my message is directly related to the visible support being shown by hundreds of members as mentioned above. As has been previously reported here, Wild Ones National is in the process of assuming ownership of a building and land to be utilized as a national headquarters. If we are successful in our grant requests, I will be strongly and unequivocally advocating to the Board of Directors to accept the grants to acquire the property.

Ten years ago at our annual meeting hosted by Milwaukee-North Chapter, Wild Ones committed to a national organization in lieu of a loose confederation of related Wild Ones chapters. In those 10 years we have increased the number of states with chapters, the number of chapters, and the number of members. We have hired an Executive Director, expanded programs, expanded the membership base, and increased our exposure at the national level of the environmental movement.

In those 10 years National has experienced a number of years of funding shortfalls, as has been pointed out by several members objecting to our acquisition of the property in Appleton. Their concern is the potential for increased membership dues, reduced support to the chapters, or reduced *Journal* issues in order to support the operational costs of the new facility. Historically, National has used these methods to control the bottom line of the business element of the organization.

At this time, I cannot say that there will not be further dues increases, adjustments to chapter support, or reductions in the number of *Journal* issues. What I can state unequivocally is that the members of the National Board do not and will not take these actions lightly. (It should be mentioned that at the end of 2006 the chapters had reported bank account balances of over $150,000. With the exception of new and smaller chapters, the argument for chapter support is losing credibility as the balances continue to rise.)

Our fiduciary responsibility to the membership is to operate the national organization in a positive cash-flow basis. It is also our representative responsibility to support the operations of the chapters, to produce a regular newsletter with relevant information to all of our expanded membership, to provide expanded program activities for members who have moved beyond the beginner phase of their native landscaping experience, to educate our youth about the importance of native landscaping to our environment, and to advocate native landscaping through increased involvement in the national environmental movement.

All this requires an increasing effort by the National Office and by our Executive Director. We are moving beyond the ability to operate out of someone's house (currently our Executive Director's) and need something more than a post offic box for an address. As I stated in earlier "Notes," some day we will need to look at replacing our Executive Director and adding staff. Our ability to function as a volunteer organization at the national level is steadily decreasing as we expand our responsibilities and initiatives. We have a rare opportunity to acquire a facility of our own, one with room to expand, and at little or no initial cost to the organization. It would be irresponsible for the National Board not to consider and act upon this opportunity to lay the groundwork for the future of the organization.

Yes, there will be operational and maintenance costs associated with the assumption of the property. We are attempting to address those costs by developing tenants for unused office, meeting, and lab space. And yes, the assumption of the property will not directly resolve the continuing struggle we have to maintain a positive budget. The property does have the potential to add to our budgetary burden. But the possible benefits of having a National Office and a million-dollar asset represent a new level of potential growth that will be necessary for our next 10 years of growth. We cannot say no!

So I ask all of our members to share the vision demonstrated by those members 10 years ago in Milwaukee, and support the National Board in taking advantage of this opportunity. •

Joe Powelka, Wild Ones National President
president@for-wild.org

Wild Ones Ecoscaper Program

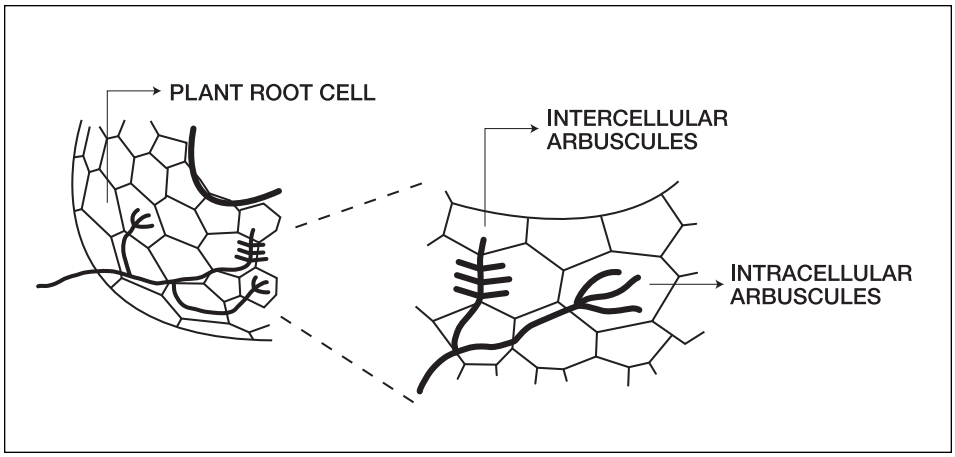
Somewhere between a prairie and a formal planting lies the fertile potential of native plants in an ornamental design, the domain of the Ecoscaper – which is a brilliant synthesis in language of the two concepts, landscaper and ecologist. Getting the name right is the first step in defining and shaping an understanding of what you want to accomplish. The term "Ecoscaper" was coined to refer to the concept and practice of ecological landscaping. We have developed the Ecoscaper Certification Program which will allow Wild Ones members to both enhance their knowledge and receive credit for their accomplishments. For more information or to enroll go to www.for-wild.org/land/ecoscaper/ or contact the National Office.

CONTINUED FROM PAGE 1

Toward exhausting the seed bank, *corn gluten* may be considered for some situations. The herbicidal action of corn gluten does not prevent germination, so the seed bank does suffer depletion. The presence of corn gluten prevents the establishment of secondary roots on seedlings which then die from lack of moisture and nutrients.

Another method of dealing with garlic mustard being discussed by members of the Iowa Native Plant Society involves intensive over-planting of moderately infested areas with shade-tolerant, fast-growing native plants. Jesse Bennett, of Driftless Land Stewardship in Glen Haven, Wisconsin, has submitted a most extensive list. Jewelweed *(Impatiens capensis* and *I. pallida)*, wood nettle *(Laportea canadensis)*, stinging nettle *(Urtica dioica)*, galiums (especially *aparine, asperullum, triflorum*) compete nicely against it she says. Yellow and wood violets *(Viola pubescens* and *V. papilionacea)*, white vervain *(Verbena urticifolia)*, sweet cicely *(Myrrhis odorata)*, stickseed *(Hackelia virginiana)*, and waterleaf *(hydrophyllum virginicum)* all hold their own rather well.

She also suggests lopseed *(Phryma leptostachya)*, jumpseed *(Polygonum virginianum)*, honewort *(Cryptotaenia canadensis)*, cow parsnip *(Heracleum maximum)*, green headed coneflower *(Rudbeckia laciniata)*, and native ferns, especially ostrich *(Matteuccia struthiopteris)*, interrupted *(Osmunda claytoniana)*, lady *(Athyrium filix-foemina)*. *Carex grisea, C. blanda, C. rosea,* and *C. pensylvanica,* and grasses *Elymus virginiana, E. riparius, E. villosus* and *E. hystrix* and again the ferns, especially interrupted *(O. claytoniana)* will contribute to the fuel bank for a hotter burn.



Drawing of a cross-section of a plant root, showing invasion of mycorrhizal hyphae between or into root cells. See sidebar on page 6 for more information.

Biological control for this species is in development. Berndt Blossey of Cornell is coordinating a project in Europe that started by testing 69 weevils that feed on various parts of the garlic mustard plant. The search has been narrowed to four weevils that appear to feed only on garlic mustard. Once their feeding habits are determined and USDA standards are met they will be introduced into the United States for continued testing.

Whether you pull it, cut it, burn it, or use a herbicide, each action that you take must be understood and carefully timed. Garlic mustard is not a plant that easily gives up the ghost. In any control efforts, several critical idiosyncrasies of the plant must be kept in mind for efficiency's sake:

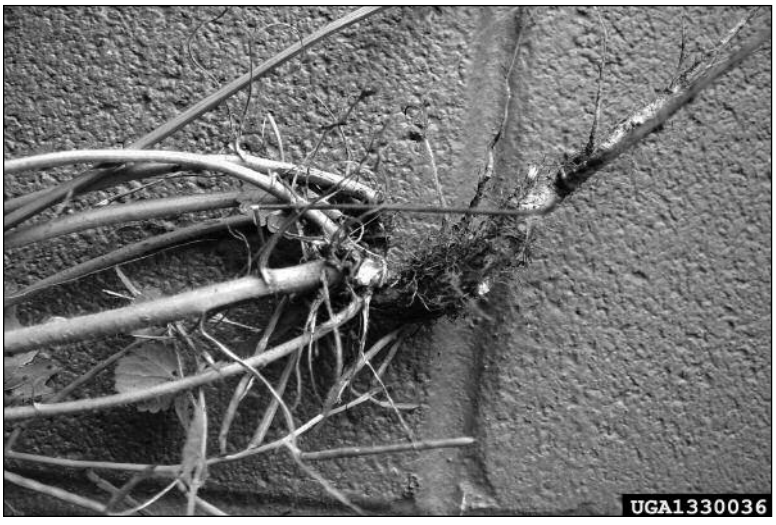
· The ground level area of the *S-shaped section of the taproot* must be removed in its entirety, or the plant will resprout from this section. Any damage to the primary flower stem stimulates growth of additional stems from axillary buds at the stem base and along the root crown. So just picking off the flowers to prevent seed set is not enough.

· *Once the flowers have opened the plant no longer needs to be attached to the root in order to set seeds.* As long as the flowers have access to sugars stored in the stem they can continue to achieve their goals. Therefore it is imperative to bag and send the pulled plants to the landfill. Most compost piles do not heat up enough to kill the seeds.

· Individual plants can continue producing flowers at leaf axils into August. Because of this long blooming time, constant monitoring is necessary.

· An infestation of garlic mustard spreads out from the core through multiple small populations. When a choice must be made whether to attack the core group or the outlying small numbers, most experienced stewards say "go for the outliers" and try to limit the spread.

Vigilance. There is no other way to say it. Keep checking back when you think you are rid of it.



Close examination of the root and crown reveals an S-shaped section that lies both above and slightly below ground, from which all stems emerge. *Photo by Chris Evans, The University of Georgia, www.forestryimages.org.*

Impacts of Garlic Mustard

Garlic mustard displaces native species of plants by several means. Several compounds isolated from garlic mustard have been shown to depress growth of both grasses and forbs in laboratory experiments. Researchers concluded that release of these phytotoxic compounds from garlic mustard root systems might account for its dominance in forest ecosystems.

In a May 2006 peer-reviewed publication, researchers report that garlic mustard interrupts the mutually beneficial relationships that many forest trees have with

The leaves of the first-year rosettes that last into the spring of the plant's second year, look quite different from the leaves of a mature flowering plant, as seen on page 1. *Photo by Betty Czarapata.*

specifically arbuscular mycorrhizal fungi (AMF) [*see sidebar*] by interfering with germination of fungal spores. Tree seedlings depend strongly on AMF. The researchers comment: "By killing off native soil fungi, the appearance of this weed in an intact forest could stifle the next generation of dominant canopy trees. It could also invite other native and non-native weedy plants that currently grow in low-AMF habitats, such as those disturbed by logging or development."

The researchers plan to study which phytochemicals in garlic mustard may kill AMF, how these chemicals interact with other beneficial soil microbes, and how plants and fungi in garlic mustard's native European habitat coexist with the noxious species. •

CONTINUED ON PAGE 6

References

http://tncweeds.ucdavis.edu/esadocs/allipeti.html
An extensive summary of information about garlic mustard. The Nature Conservancy also has information on many other invasive plants.

http://tncweeds.ucdavis.edu/esadocs/documnts/allipet.rtf
Element Stewardship Abstract on garlic mustard, by Victoria Nuzzo

Stinson KA, Campbell SA, Powell JR, Wolfe BE, Callaway RM, et al. (2006) Invasive plant suppresses the growth of native tree seedlings by disrupting belowground mutualisms.
PLoS Biol 4(5): e140. DOI: 10.1371/journal.pbio.0040140

Garlic Mustard, Butterflies, and Other Fauna

Mariette Nowak

Before the 1860s, the mustard white *(Pieris napi oleraceae)* was one of the most common native butterflies. But when the cabbage butterfly arrived from Europe, possibly as larvae or pupae on cabbages brought in with the early settlers, the mustard white was forced to retreat to shaded forests, and the cabbage took over the meadows and open country it preferred. Today another alien – this time a plant, garlic mustard – is threatening the mustard white in its woodland refuge.

The mustard white, as well as the endangered Virginia white butterfly, use several native wildflowers in the mustard family, the toothworts *(Dentaria laciniata* and *Dentaria diphylla)*, as food plants during the caterpillar stage. The toothworts produce a chemical (sinigrin) which attracts the butterflies, an attractant also found in garlic mustard. When garlic mustard displaces the toothworts, or grows taller than the toothworts in mixed stands, the butterflies resort to laying their eggs on garlic mustard. Chemicals in the garlic mustard appear to be toxic to the butterflies. The eggs of the Virginia white die, while those of the mustard white hatch, but the caterpillars soon die.

The mustard white is apparently already extirpated in Illinois. In southern Wisconsin, the butterfly survives at The Nature Conservancy's Lulu Lake Preserve, where garlic mustard has been kept in check. However, in nearby areas where garlic mustard thrives, the butterfly has lost out.

Garlic mustard also adversely affects habitat for several species of salamanders and mollusks through changes in forest litter layer depth and composition. The impact of garlic mustard on other animals has not been studied, but is likely to affect other insects, as well as ground-foraging birds, amphibians, and reptiles, due to a reduction in the abundance and diversity of native plants used by these animals for their foliage, pollen, nectar, seeds, and roots. •

The tiny seeds of garlic mustard form in long, cylindrical pods called siliques. The pods dry and split open – dehisce, spreading the seed over many square feet. *Photo by Chris Evans, The University of Georgia, www.forestryimages.org.*

CONTINUED FROM PAGE 4

Mycorrhiza: What Is It?

Mycorrhiza (plural, -zae or zas) refers to an association, or symbiosis, between plants and the fungi that colonize the cortical tissue of roots during periods of active plant growth. The association is characterized by movement of: plant produced carbon to the fungus; fungal acquired nutrients to the plant.

The mycorrhizal fungi form a critical linkage between plant roots and the soil. The fungi usually proliferate both in the root and in the soil. The soil-borne, or *extramatrical hyphae* are able to extend significantly farther into the soil environment and interact with this environment differently than do plant root hairs. The hyphae take up nutrients from the soil solution and transport them to the root. By this mechanism, mycorrhizae increase the absorptive surface area of the plant.

Mycorrhizal associations vary widely in structure and function. In a very broad generalization about groupings of mycorrhizal types it can be said that there are *ectomycorrhizae* and *endomycorrhizae*. Ectomycorrhizae occupy the spaces between the plant root cells – endomycorrhizae actually appear to enter the plant root cell in many-branched, or arbuscular structures. The "entry" is only apparent – neither the fungal cell wall nor the host cell membrane is breached.

Most vascular plants form mycorrhizal associations with arbuscular mycorrhizal fungi (AMF), with variable dependency on this association for their growth and survival. Woody perennials and other plants found in late-successional communities are particularly dependent. Naturalized exotic plants have been found to be poorer hosts and depend less on native AMF than native plants. They often colonize areas that have been disturbed, and disturbances to soil have been shown to negatively affect AMF functioning. •

THE NEXT GENERATION

Measuring Mayapples

By Barbara Bray

Packed as tightly and efficiently in its protective capsule as any parachute, the emerging mayapple plantlet looks nothing like the large, open, multi-segmented mature plant. *All photos this page by Geoff Mehl.*

Once it has emerged from the ground and no longer needs protection, the leaf unfurls quickly.

Children like riddles. One day in late March I enticed my daughter to come outside with me. We walked across the grass to the small trail heading under the maple and pine trees in our yard. We stopped for a moment and I asked her if she could see the wildflowers. She gazed at the decomposing fallen leaves on the ground and responded that all she could see were dead plants.

I took her by the hand and led her off my trail and we squatted down by some sticks poking up out of the ground. The sticks marked a special spot. Using my hands, I gently pulled back the layer of dead leaves and pine needles to expose the ground's surface. When I asked her again if she saw anything, she still saw nothing.

Then she noticed several small white pegs barely sticking up from the dirt. She pointed at them and asked what they were. Imagine her surprise when I told her that they were mayapples. How could these small pegs be mayapples? The leaves, stems, and flowers weren't even there. Touching the top of the pegs with our finger tips, we discovered that the pegs were sharply pointed.

Two weeks later, on a sunny morning in early April, with temperatures flirting with the 60 degree mark, Brenna and I revisited the mayapples. The whitish pegs were still there, but they had split open slightly to reveal something greenish gray inside. This new inner growth was quite soft. Brenna guessed it might be a folded-up leaf, but she wasn't quite sure. We talked about how it might be much easier for the plant to use a sharp point to push up through the soil. The stiff pointed peg, or sheathe, protects the delicate stem and leaves. It would be almost impossible for the soft leaves to push up through the heavy dirt by themselves. What a great plant adaptation!

As I write this in early May, the weather warms, and the mayapples continue to rise out of their protective sheaths. At first, the green, umbrella-like leaves are tightly furled around the stems. The mayapples look a little bit like skinny green mushrooms at this stage. Touch the leaves and they feel moist. If you look closely at the leaf edges, you will see they are pubescent. Within a couple of days, however, the furled leaves open, and soon are shading the ground around them. This is a plant you can almost *see* growing. On very warm days, the mayapples may grow anywhere from 1/2-inch to two inches in height. On cooler days they slow down a bit.

My daughter and I head back into the house, content to know that the mayapples are growing even if we can't watch them every minute of the day. Soon they will flower and we will walk down the trail again to peek under their leaves. Will all our mayapples flower, or will only a few? We will just have to wait and see. •

Hidden beneath the umbrella of the leaf, the elegant blossom of the mayapple is easily missed.

Cornfield of Dreams

Former cornfield, in neat-as-a-pin subdivision, becomes a native-plant landscape.

By Mandy Ploch

Not long ago. my husband and I downsized to a 6-year-old house in a small rural subdivision of about 50 homes built on a former cornfield. This was a case of finding everything we wanted in the house itself. The existing landscape was antithetic to me as a long-time Wild Ones member and landscape designer, but I knew that making a change would be an enjoyable project. I knew I wanted to reduce the turf grass area by adding large planting islands and borders. Using native plants was a given, but I also wanted to start with a more controlled look, as a nod to neighborhood sensibilities. Time and additions would effect changes in a gradual way.

All the properties have neat-as-a-pin lawns and minimal to nonexistent landscape plantings. I must be the first Wild Ones member here! Our half-acre landscape consisted of one large berm planted with three blue spruces and two cut-leaf sumacs, a few arborvitae foundation plants, and some pitiful perennials planted 1 inch away from the foundation. I must admit though, the first thing that caught my eye was the river rock mulch covering the berm and borders, neatly outlined with boulder necklaces.

In 2005, our first summer of occupancy, I planted many trees and shrubs – the perennials would come later. The beds close to the house that will be intensively planted are currently covered with shredded hardwood mulch. Three outlying islands comprise a total of 3,250 square feet. An additional 700 square feet will be planted as dry prairie in the future. To save expense and future maintenance in these last two areas, instead of organic mulch, I seeded with no-mow grass – a blend of non-native fine fescues that grows only 8 to 12 inches high. I also placed drifts of those reclaimed boulders in these areas. A lot of the small stone mulch went to a grateful neighbor to use under his new deck.

After the no-mow was up and growing well, I realized the existing bluegrass, which spreads rapidly by rhizomes,

would quickly run into the no-mow area and spoil the lumpy-green-blanket effect that I like. Therefore, I added an almost invisible fiberglass grass barrier (FiberEdge™) around the islands. The added cost will be well worth it in the long run. Because the fescues are clump forming grasses, it will be easy to find openings to add forbs and other grasses. This clumping quality will also provide openings for all the plants to self-seed.

The subdivision does not have curb and gutter, only swales on either side of the roadbed. The lack of unmowed turf was an immediate problem when we moved in, because our dog, Ace, only relieves himself in long grass – a true Wild One. For Ace's benefit and to slow runoff I mow the grass on both sides of the swale and let the sides and bottom grow in turf grass. My property is the only one with unmowed swales, but twice a summer the township mower has trimmed it down. It's always a surprise when it happens, but it does look tidier each time, so I don't mind. However, this practice does preclude my planned wetland plantings in the swale.

The house has buried downspout extensions which lead to the swale. While this is fine for sidewalk areas where ice would form in winter, I plan to unleash one downspout that serves a long gutter run, to feed a rain garden. In hindsight,

I was fortunate not to have started a rain garden in 2005 since we had a severe drought. As it was, there was enough to do to keep the new plantings watered. Most survived, warranties will replace the few that did not.

This year, the no-mow was up 12 inches by mid-May, taller than it had grown all last year. I have now added native forbs and grasses to the no-mow areas. Many of them are divisions from friends with whom I had previously shared the plants. That is one of the lovely ties of friendships and gardens. •

Cornfield of Dreams Plant List

TREES

Amelanchier laevis, Serviceberry
Celtis occidentalis, Hackberry
Cercis canadensis, Northern Redbud
Gymnocladus dioicus, Kentucky Coffee Tree
Ostrya virginiana, Hop Hornbeam

SHRUBS

Corylus americana, American hazelnut
Juniper virginiana, Red Cedar
Physocarpus opulifolius, Ninebark
Rhus aromatica, Fragrant Sumac
Viburnum dentatum, Arrowwood

FORBS

Aster ptarmicoides, Upland White Aster
Baptisia australis, False Indigo
Echinacea pallida, Pale Purple Coneflower
E. purpurea, Purple Coneflower
Erynguim yuccifolium, Rattlesnake Master
Euphorbia corollata, Flowering Spurge
Ratibida pinnata, Yellow Coneflower
Silphium terebinthinaceum, Prairie Dock
Solidago speciosa, Showy Goldenrod

GRASSES

Schizachyrium scoparium, Little Bluestem
Sporabolus heterolepis, Prairie Dropseed

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Green Bay (WI) Chapter

WILD ONES LIBRARY

Got books, articles, or maybe even some posters you think would be of interest to others? Want to share them with other Wild Ones members? Make these items available to others through the Wild Ones Library. Just contact the National Office for more information.

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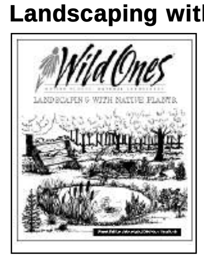

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Grapevine By Maryann Whitman

Does early interaction with nature help kids think and cope better? And if you don't like poison ivy now, wait until you hear what happens when it grows in a "greenhouse."

Nature Nurtures

Karen Wells, an assistant professor in Cornell's College of Human Ecology, has published a number of papers over the past few years that reflect on the beneficial effects of "nature" on children.

In 2000, Wells conducted a study that found that being close to nature helps boost a child's attention span. "When children's cognitive functioning was compared before and after they moved from concrete surroundings to housing that had more green spaces around, profound differences emerged in their attention capacities, even when the effects of the improved housing were taken into account," said Wells. Other studies, she notes, also support the theory that green spaces might help restore children's ability to focus their attention, thereby bolstering their cognitive resources by allowing neural inhibitory mechanisms to rest and recover from use. "By bolstering children's attentional resources, green spaces may enable children to think more clearly and cope more effectively with life stress," Wells said.

In 2003 she showed empirically that nature in or around the home appears to be a significant factor in protecting the psychological well-being of children in rural areas. "Our study finds that life's stressful events appear not to cause as much psychological distress in children who live in high-nature conditions compared with children who live in low-nature conditions. And the protective impact of nearby nature is strongest for the most vulnerable children – those experiencing the highest levels of stressful life events."

Further research published in 2005 expanded on this line of reasoning: "Our study indicates that participating in wild nature activities before age 11 is a particularly potent pathway toward shaping both environmental attitudes and behaviors in adulthood," said Wells. "When children become truly engaged with the natural world at a young age, the experience is likely to stay with them in a powerful way – shaping their subsequent environmental path," she added.

Interestingly, participating in Scouting or other forms of environmental education programs had no effect on adult attitudes toward the environment.

"Participating in nature-related activities that are mandatory evidently does not have the same effects as free play in nature, which doesn't have demands or distractions imposed by others, and may be particularly critical in influencing long-term environmentalism," Wells said.

An interesting (maybe itchy) future?

Plants function as carbon "sinks," storing carbon when they break down carbon dioxide (CO_2) during photosynthesis. A carbon pool, such as a well-managed, old growth forest, has more carbon flowing into it than flowing out.

Carbon dioxide (CO_2) emissions increase the concentration of this gas in the Earth's atmosphere. CO_2 has become the most common greenhouse gas. Major sources of CO_2 emissions include the burning of fossil fuels for energy and transportation, and the destruction of forests. Numerous reports (World Meteorological Organization, Laboratory for Applied Biotelemetry & Biotechnology at Texas A&M) have shown that human activity has contributed to increased atmospheric CO_2. Prior to the start of the Industrial Revolution (circa 1850), atmospheric CO_2 concentrations were about 280 parts per million by volume (ppmv). Current levels are about 370 ppmv.

Biologists have wondered whether this carbon boost might work as aerial fertilizer for plants. The plant-world beneficiaries might surprise you.

Researchers from Duke University (North Carolina), over a period of five years, monitored the plants growing in a confined area while exposed to levels of approximately 560 ppmv CO_2 – a 50% increase over current CO_2 levels.

Poison ivy vines, in particular thrived in this environment, showing extra photosynthesis and more efficient water use. The chemical composition of urushiol, the oil that poison ivy produces, became more toxic. While the concentration produced by the plants remained the same, much more of the unsaturated form was produced. This is the form that is more likely to produce painful skin reactions in people.

Other studies have suggested that vines may be big winners in a high-carbon-dioxide future. Experiments at Oak Ridge National Laboratory in Tennessee showed that forest honeysuckle vines increased their growth.

Vines don't spend much of their carbon harvest on trunks or other supports, so the carbon windfall can go directly into new leaves, which collect yet more carbon and sunlight. An increased abundance of vines, which can choke out trees, could change forest dynamics.

Bigger, more-toxic poison ivy is a serious concern, says a researcher from Macquarie University in Australia. It's another factor to add to his tally of the extra misery that climate change might bring to people with allergies. For example, certain pollen counts are likely to go up, so allergy seasons could become more serious events, he says. •

The Marsh
Nature's Water Purifier

Turtles are cold-blooded (poikilothermic), and enjoy lying in the sun to raise their core body temperatures. Marshes and other wetlands are a favored habitat.

By Tom Schneider

Often overlooked, marshes are an important part of the ecosphere – and the proposed Wild Ones HQ property has a great marsh remnant that we can help preserve.

Wild Ones' opportunity to create the West Shore Preserves Environmental Center on the shore of Little Lake Butte des Morts, could not only provide a unique home for Wild Ones, but also protect one of nature's great assets. The marshes surrounding the center are reported to be some of the last remnants of what was once a large marsh complex within the Lower Fox River corridor. Marshes play a special role in the larger ecosystem, providing services locally, continentally, and globally.

One of the most famous and formerly world's largest marshland system, the Mesopotamian Marshes, is a mere glimmer of its former self in modern-day Iraq. This marsh complex, which some biblical scholars speculate might have been the "Garden of Eden," cleansed pollutants from the waters of the Tigris and Euphrates rivers as they entered the Persian Gulf.

The Wetlands

Marshes are what most people envision when they hear the word wetland. Marshes are wetlands that are frequently or continuously covered with water. They are frequently found along the outer edges of open water, extending into the water to the point where sunlight can no longer reach the bottom and support plant growth – less than three feet, depending on the turbidity and solutes in the water. These wetlands exist in both fresh- and salt-water systems. They are made up of emergent or soft-stemmed vegetation, which grows out of the water – dominant plants in marshes include cattails, reeds, grasses and bulrushes. Other familiar plants such as arrowheads, smartweeds, and sedges contribute to the plant community. Purple loosestrife *(Lythrum salicaria)* and *Phragmites australis*, the common reed, are the most bothersome invasive species that specialize in establishing in marsh habitats and present a serious threat to native systems. Some would add canary reed grass *(Phalaris arundinacea)*.

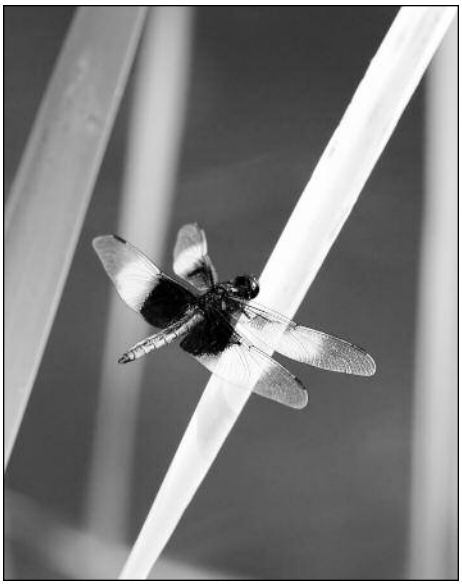
Marshes and Swamps

Marshes differ from swamps, another major continuously inundated wetland, by virtue of the primary vegetation types. Swamps are dominated by woody vegetation, and often have several vegetative layers including canopy, sub-canopy, and herbaceous. Swamps are generally associated with riverine systems. Northerneastern swamps are forested by trees such as swamp white oak *(Quercus alba)*, and eastern white cedar *(Thuja occidentalis)*, while southern swamps can be dominated by cypress or even mangrove. The ivory-billed woodpecker was recently rediscovered in the bottomland hardwood swamps of Arkansas after having been thought to be extinct for more than 60 years.

Natural Purification Systems

Wetlands in general, and marshes specifically, are often referred to as "nature's water purifiers." This designation is based upon the filtering and nutrient-removal functions that marshes perform so well for adjacent surface waters and even ground water. The vegetation and associated microorganisms work to remove sediment, nitrogen, and phosphorus from water flowing through the marsh. Pollutants such as nitrogen and phosphorus are either taken up by plants for growth or metabolized by bacteria into less soluble compounds which precipitate. Marshes filter the water of an ecosystem, removing

With the acquisition of the 12 acres at Butte des Morts, Wild Ones will be able to participate in the preservation of an important patch of ancient marsh.



Dragonflies and damselflies are part of the intricate food chain of a marsh, feeding on living prey.

Many birds find shelter and nesting sites to raise their young in marshlands. Food – both animal and vegetable — is close by.

impurities and passing cleaner water downstream.

Flood Control

Flood protection is another service of marshes and other types of wetlands. A marsh can act as a large sponge, storing flows of rain water and slowly releasing it over time, removing much of the energy and pollution from the initial surge. As more and more impervious surfaces such as pavements, roofs, and even lawns are implemented, storm water runoff is becoming a bigger problem, and flooding is becoming more prevalent in some areas because of the speed at which water runs off these surfaces and into streams. Not only can marshes reduce storm-water flooding, but they also reduce the impacts of drought, as they help to regulate the flow of water into streams and lakes by retaining water for later, more continuous release.

Similarly, marshes aid in erosion control by reducing the rate of water flow from the inland, and dissipating the energy of waves and storm surges from the open-water bodies. Marshes are very effective in attenuating natural events and helping to mitigate their impacts. We've all heard the stories of the historic losses of the marshes that once surrounded New Orleans, and the impact these losses had on allowing a large storm surge to hit the city. On a much smaller scale, marshes around the country protect stream and lake banks from erosion caused by flooding or storm surges.

If all goes well, Wild Ones may soon be in the most fortunate position of participating in preserving a section of Fox River marsh that looks a lot like this one – an emergent stand of cattails, reeds, rushes, and sedges, with open water in the distance. *Photo by Tom Schneider.*

Home for Plants and Animals

These wetlands not only provide environmental services in terms of water quality and erosion control, but they also provide an important environment in the life cycle of many organisms. They are breeding grounds, nurseries, resting spots, feeding areas, and homes to a variety of organisms. In salt-water systems, marshes are often the nurseries for most of the seafood we all enjoy. Fish, from the mud minnow to the northern pike, make marshes their home. Many frogs and turtles call marshes home for at least part of their life cycle. Mammals such as muskrat and mink inhabit these wetlands. Flying predators, ranging from the twelve-spotted dragonfly to the bald eagle find productive hunting in marshes.

Marshes are most apparent during the spring season of the year. The *konk-ker-ee* song of the red-winged blackbird that nests among the cattails is as unmistakable as the bird itself. And waterfowl are highly dependent on marshes. Black ducks, green-winged teal, mallards, and other ducks rely on marshes for breeding and rearing their young. Ducks, geese, egrets, herons, cranes, and others use marshes as resting and feeding points along their amazing journeys from one end of the continent to the other.

The opportunity presented to Wild Ones – to participate in the preservation and restoration of a patch of ancient marshland, is invaluable. If our grant request is met with success we will become part of something much larger and more important than we have been before. These are exciting times! •

Chapter Notes

Central Upper Peninsula (MI) Chapter uses the term "work bee" for project oriented meetings such as buckthorn removal, planting new seedlings, stream clean-up, etc. It even *sounds* environmental.

From the **Mid-Missouri (MO) Chapter** year-end report, we read, "The highlight of 2005 for the Mid-MO chapter was the digging, mulching, planting, and filling of a rain garden at Rockbridge Elementary School. We had 40 volunteers accomplish this activity in an hour and a half. We also had an equal number of volunteers assist in the "Landscape Challenge," in which we partnered with our state conservation department and department of agriculture to redesign the landscaping of two residences with native plants."

Fox Valley Area (WI) Chapter has a similarly creative project which they call "Extreme Yard Make-Over." Chapter members submit a brief narrative describing why their yard needs to be made over, and the winning entry gets a free native-landscape make-over (within certain financial limits, of course). Chapter members then get a guided tour of the completed yard.

Also from the year-end reports, **Oakland (MI) Chapter** participated in the Lake Orion Flower and Garden Fair. One member offered a tent canopy to shade the volunteers from the sun on the first day and provide protection from rain on the second. **Barb Bray**, chapter president wrote, "We talked to many people and I believe I stopped one gentleman from going out into the wild to dig wildflowers to sell. We spoke for about a half hour about the difference between essentially poaching plants from the wild and selling seed-propagated wildflowers. I also gave two talks on native plants by way of loudspeaker. This was interesting to say the least. My impressions of the general public from this event are that they have heard something about native plants from newspapers or magazines or TV shows. Many people came up to our table to find out what exactly was so special about native plants. We sent them away with armloads of information."

Many of the chapters participate in such events throughout the year and talk to lots of people and hand out lots of Wild Ones brochures and pamphlets. A special "thanks" to all the volunteers who help with these events to spread the word about natural landscaping with native plants. *Thank you all!*

Wild Ones Member Wins Herb Kohl Fellowship

Jean Horst, Fox Valley Area (WI) Chapter, was recently chosen as one of a hundred teachers in the state to receive the Herb Kohl Fellowship. As a recipient, she received $1,000, and her school, Edison Elementary, received the same amount. After meeting with both **Donna VanBuecken** and **Karen Syverson** at Edison about the school prairie and woodland gardens, she accepted their suggestion to use some of the money to increase the diversity of the school gardens. Jean bought plants and ferns from the **Fox Valley Area (WI) Chapter** spring plant sale to add to Edison's landscape. She also plans to have a sign made to promote understanding of the prairie project.

Jean also says she will use some of the money to put together a book about the plants in the garden and to create labels for the plants.

Jean has been nominated for the **Educator of the Year** award funded by the **Mielke Family Foundation**, which recognizes outstanding contributions to the educational program of the Appleton Area School District by a teacher or professional educator from each of the levels, elementary, middle school, and high school.

An ancillary purpose, though equally important, is to increase community awareness of the achievements and accomplishments of the public schools, thus heightening respect for the teaching profession as a whole. Winners will be notified in August. Let's wish Jean the best of luck. •

Happy Birthday, Lorrie!

❖ ❖ ❖

Last year we established a Seeds for Education fundraising initiative in honor of Lorrie Otto's birthday. Her birthday is in September, and she will be 87. Please send your gifts by September 5th so we can get your cards and letters to Lorrie in time for her birthday. You can download a special birthday card for Lorrie at **www.for-wild.org/download/bd/lorriebirthday.html**

BOOK REVIEW

Native Landscaping for Wildlife and People

Dave Tylka
Copyright 2002 by the Conservation Commission of the State of Missouri
ISNB 1-887247-3430000
Missouri Department of Conservation, P.O. Box 180, Jefferson City, MO 65102

Review by Janice Cook

Help support Wild Ones by getting this book through the Wild Ones Bookstore.

When I get a book for review I like to flip through it – partly to see how it is organized, partly to see how it is supported. I look for pictures, maps, diagrams, charts, lists, appendices, and the like. In this case I found a very usable index and a table of contents with subheadings, making it easy to mine the resources in the book. The book ends with a sources list containing titles of books and brochures, and a native plant nurseries list, all very helpful for a serious gardener.

While flipping, I was impressed by the beauty of the book. If, as Marshall McLuhan said, "The medium is the message," this book in and of itself states that native landscaping is esthetically pleasing. The graphics, the layout, and the photography are first rate, supporting the prose and lists in explaining and illustrating the processes and pleasures of natural landscaping and wildlife.

Even the charts and lists, and there are many, are beautiful – trimmed or accented with color and design. When you get to nectar plants you will find that they are cross-referenced to the plant description pages. I appreciated the fact that the lists did not neglect the larva stages of the butterflies. Both resident and migratory bird needs are considered as well as those of mammals. The natural/naturalistic wetlands chapter includes information on amphibian needs.

The caveat that I have is related to the lists. It is the caveat for all lists. Be aware of the locale: Tylka points out in several places that the plants are appropriate of the central-lower Midwest. They have occurred and evolved in the area, but may not be at all appropriate for your location in Minnesota or Montana. Some of the aggressive natives and invasives that are listed may be hard to grow or may even be nonexistent in your area. Check for local hardiness. Try other species if you want a particular genus or family of plants, also compare the lists to your local native plants lists. That said, the lists can be very helpful in raising awareness of what to look for when selecting plants based on size, soil conditions, bloom time, and hydrology. Then again, with global warming, some ecologists are suggesting planting species from 200 to 500 miles south of your site, so the lists may become appropriate for new areas – but that's another subject.

Whether you are dealing with a city size lot or several acres, the basic principals are all here. The first chapters act as pre-primers, building rationale and readiness for the material to come. They also provide the information needed to analyze your setting as to sun, shade, moisture, and soil. It's far easier on both back and wallet to analyze and lay out with paper and pencil. As the author says, "Large-scale changes to your landscape can be rewarding, but require much work if you do it yourself, or great expense if you hire others." He also gives suggestions on prioritizing and scheduling the planting and the maintenance.

The last chapter has 25 tips for wildlife habitat enhancement, from meal worm treats to toad cellars, a nice finishing touch for people who want to landscape for wildlife. A great gift to yourself or others. •

Wild Ones PowerPoint Presentation Available Now!

You may recall that on their 10th anniversary, the **Fox Valley Area (WI) Chapter** of Wild Ones, awarded **Executive Director Donna VanBuecken** $1,000 to be used for a Wild Ones project of her choice, in recognition of her dedication to the chapter.

Donna chose to prepare a PowerPoint presentation which could be used as a promotional tool by local chapters when talking with various groups about natural landscaping throughout their communities. It took a while to get the basic structure put together, but Donna and volunteer **Doug Grant**, **Fox Valley Area (WI) Chapter** did just that. And then **Tim Lewis** of the **Rock River Valley (IL) Chapter**, professionally reviewed and polished it. The draft version passed several trial tests by a number of Wild Ones members, and now the PowerPoint presentation is available for distribution.

If you are making presentations for your chapter to various organizations within your area, please don't hesitate to contact the National Office about getting a copy of this presentation.

Just a reminder, however, that this presentation is intended to be used as a promotional tool, and is not a "how to" presentation like the "Wild About Wildflowers" video which is available as a premium for the Wilder membership level.

There are downloads on the web site at www.for-wild.org/download/ which can be used as handouts with this presentation, or contact the National Office for a supply of the standard Wild Ones brochures. •

Wild Ones Web Site

The Wild Ones Bookstore is up and running as an associate of Amazon.com. This means we receive a referral fee from Amazon for most books and other items when purchased through a link on our bookstore. We have book suggestions on our store page, and Amazon includes relevant recommendations of their own. Our bookstore also includes natural landscaping books we are selling directly through Wild Ones. There's a fabulous selection, and it's a great way to make a contribution to Wild Ones. Try it at www.geostar.com/wobookstore/.

We also have a new **classified ad page** featuring natural landscaping items for sale by members. The current listing includes a native-landscaped home in Ballwin, Missouri, owned by **Nathan Pate** and **Janet Kennedy** of the St. Louis (MO) Chapter. For details go to www.for-wild.org/members/classified/real/060601.html.

Don't forget the **Wild Ones Online Discussion Group**. It's easy to join, and fun to discuss topics of interest. One especially noteworthy and recent topic is "Deer Deterrent." Go to www.for-wild.org/members/discussion.

SEEDS FOR EDUCATION

Restoration at Rudolf Steiner High School

By Erica Choberka and Celia Larsen

The Rudolf Steiner High School sits on a beautiful and ecologically diverse, 6-acre campus on Pontiac Trail in Ann Arbor, Michigan. The property is contiguous with the Black Pond Woods Nature Area, the headquarters for Ann Arbor's Natural Area Preservation Group (NAP). Our school, which is a Waldorf school, aims to provide a comprehensive and balanced academic, artistic, and practical education that prepares our students for the challenges of the rapidly changing world.

In order to support this education, we infuse the natural world into our curriculum. We use our land in the teaching of science, humanities, math, and the arts. In the sciences, our first task is to foster an interest and delight in the world. Students regularly walk, observe, and perform experiments in our woods and prairie during their chemistry, physics, and life and earth science courses. Just this week, for example, we began Goethean* observations of plants in our Botany class.

When we purchased our property in 2001, we knew it had great restoration potential, considering it contains approximately 1 acre of mature oak forest and an adjacent old field. There was one large problem: the forest was choked with buckthorn, and the field was full of non-native species. I remember taking classes out to the woods and there were barely any plants growing on the forest floor. The buckthorn was so thick it was difficult to walk through the forest. When we followed the path to the adjacent Black Pond Woods, the forest dramatically changed into a healthy and balanced ecosystem.

Since our land plays such an integral role in our teaching, I feel we must expose and calibrate the senses of our students to healthy functioning ecosystems and biodiversity. The students quickly caught on that their forest wasn't healthy, and they wanted to do something about it. This was the first step, and in my opinion, the most important step in the restoration process. Without getting the students and larger community interested in creating healthy, beautiful ecosystems, the work falls solely on the few individuals with the vision.

In the fall of 2004, a student decided she was going to seed the field with native prairie grasses as a class project for the ecology block. The following year the senior ecology class wrote a management plan for the forest and prairie complex, based on their new understanding of ecological processes and healthy ecosystems. In order to write this plan, they researched restoration techniques, met with staff from NAP, and worked with me, their life science teacher. This plan provided background information about oak forest-prairie systems. It documented the condition of our forest and prairie, and it included a current species list. It also included a year-by-year plan to restore this habitat.

This plan was presented to the faculty, staff, student body, and building and grounds committee. Once it was approved, the school got serious. A team of students, our physics teacher, and I took up the mission to cut down all of the buckthorn in the forest. This was no small task. This consumed the entire high school student body for a year.

The following winter (2005), **Celia Larsen**, a botanist in the parent body and a Wild Ones member – Ann Arbor (MI) Chapter, prepared grant applications to allow us to purchase plants to increase biodiversity and soften the transition between the prairie and forest. In addition to relying on her past grant-writing experience, she consulted with a Michigan Natural Features Inventory (MNFI) botanist, a NAP botanist, and me (also a former MNFI botanist) to develop the grant. She incorporated the students' management plan into the grant. In addition, she researched where to purchase the plants, and developed a specific site plan and budget for the project. Wild Ones, through their Lorrie Otto Seeds for Education Fund, and the Wildflower Association of Michigan Glassen Educational Fund both awarded us grants totaling $1,100 to purchase plants and seeds for our restoration project.

This spring, the 11th-grade garden class is planting the plants purchased using the grant money, and pulling new buckthorn seedlings. We have noticed that the spring ephemeral wildflowers have really flourished with the removal of the buckthorn. The students are creating a path through the forest, rescuing any plants that fall within the new path boundaries. Fifth graders at our Lower School (K-8), only a few miles away, will transplant the rescued wild geranium, Pennsylvania sedge, meadow rue, and Solomon's seal into their forest, which is also under restoration. Families have committed to watering our new plants over the summer. And NAP has agreed to burn our woods and prairie in the fall of 2006.

The restoration process will continue for many years to come – we are responsible for the stewardship of our land. The commitment of the school, community, and organizations like Wild Ones and the Wildflower Association of Michigan, makes projects like ours a success. We are very grateful to everyone who has made this possible. I am thrilled that the students who attend our school will be able to observe a healthy, balanced ecosystem rather than a degraded, invasive-ridden landscape.

We look forward to being docents for the Lower School students when they visit our campus and Black Pond Woods for field trips. We hope to share what we have learned and accomplished by hosting a local Wild Ones meeting on our campus. We continue to foster our relationship with NAP – for example, we plan to share the data we collect from our weather station, and they have agreed to burn our woods and prairie. Thank you to Wild Ones for helping us create a beautiful, Michigan woodland that gracefully transitions into a pocket of native prairie.

Every project is unique, but here are some points to keep in mind if you plan to apply for a Lorrie Otto Seeds for Education Grant:

Really get to know *all* your land, and steward what you already have. Many schools have "forgotten" land around the edges that may have treasures hidden behind buckthorn or veiled by garlic mustard. Inventory your trees, shrubs, and ground layer throughout a full growing season. What seems to be a dry field in September may actually be a seasonally wet meadow. Begin caring for what you have – you don't need a grant to remove invasive plants or water trees during dry spells.

Alert your entire community to your intentions. This includes not only parents, teachers, staff, and administration, but should also include CONTINUED ON PAGE 19

The Guardians of Chesapeake Bay

By Mark Imlay

The Chesapeake Bay Watershed has been heavily urbanized. As a result, most natural areas are relatively small, and are surrounded by cities, highways, and agriculture. It consists of islands of nature in a sea of development. It's ecological history includes the full range of mid-Atlantic temperate climate habitats. Maryland was 80% contiguous forest and 20% open in pre-colonial times. Most of Maryland and much of Virginia and Pennsylvania, as well as the District of Columbia are in the watershed, ranging from the marine environment, upstream to the Piedmont and the eastern end of the ridges and valleys of the Appalachian Mountains. There are shale barrens and serpentine barrens, limestone caves, and the northern-most bald cypress swamp in America, Battle Creek Cypress Swamp in Calvert County, Maryland.

Guardians of the Bay

Fortunately there are literally hundreds of environmental groups working very hard to save the remaining areas from development, and rescuing the protected areas from non-native invasive species, erosion and pollution.

The Anacostia Watershed Society (www.anacostiaws.org) complements wetland restoration, native tree planting, stream bank stabilization, non-native invasive species control, and water quality monitoring with advocacy and environmental education in the local schools. We have dramatically rescued the 150-acre Little Paint Branch Park in Beltsville, Maryland, a biological gem with a Virginia magnolia wetland of special concern, from over 20% coverage of Japanese stiltgrass, English ivy, oriental bittersweet, multiflora rose, Japanese and bush honeysuckle, and mile-a-minute vine to less than 15% in just one year.

The Chapman Forest Foundation (www.chapmanforest.org), **Maryland Native Plant Society** (www.mdflora.org), and **Sierra Club** (www.marylandsierraclub.org), with many other groups, rescued 2,400 acres of mature forest with over a mile of unspoiled Potomac River shoreline, from the largest housing development in Maryland. Geologists have surveyed the unique natural area and have observed that the unusual geological formations constitute conditions favorable to unusual assemblages of plant and animal life. Acidic conditions on the gravel terraces defer to highly calcium-rich (calcareous) pockets in lower areas. Shells in fossil-laden marine clays contribute to these calcareous areas. These conditions overlie a relatively undisturbed tract, including ravines so steeply sloped that past clearing was hindered, so that a broad assemblage of flora and fauna persist, including many state-rare, threatened, and endangered species.

Botanists have verified that acid-soil loving plants indeed coexist in close proximity with calciphilic (calcium-loving) communities, so that communities unusual for the coastal plain thrive here, including the largest Maryland population of the state-endangered, calciphilic, glade fern and a dozen 1- to 2-foot diameter sassafras trees. Malacologists have identified a unique assemblage of snails that includes three "limestone" species rare or unexpected on the coastal plain.

Save Crow's Nest (www.savecrowsnest.org), in Northern Virginia, across the Potamac River from Chapman Forest, is striving to save Stafford County's 3,800-acre Crow's Nest peninsula, which includes one of the last stands of old-growth forest in the Mid-Atlantic region. A 600-year-old pin oak, alive when Captain John Smith explored the area, flourishes there. It contains some of the rarest forest communities on earth. The undeveloped shoreline is home to one of the largest heron rookeries in the Chesapeake Bay region. Bald eagles nest in the trees. In addition, the peninsula is at a strategic location that provides considerable protection for the seafood industry of the Chesapeake Bay.

The Alliance for the Chesapeake Bay (www.alliancechesbay.org) is a regional nonprofit organization that fosters partnerships to protect the bay and its rivers. For example it is sponsoring invasive plant re-

Popular Native Plant Guide

Traditional landscaping and lawn and garden care pose a serious threat to native plant communities and wildlife habitat.

The use of native plants in landscaping, habitat enhancement ,and restoration has grown exponentially in recent years, as communities, schools, businesses, watershed groups, organizations, governments, and many others are enhancing and restoring habitat, solving ecological problems, reducing maintenance, or just beautifying surroundings. This is especially true in the Chesapeake Bay Watershed.

It quickly became apparent that an accurate and definitive reference to appropriate native plant species was needed to guide these projects and assure that they are successful and environmentally beneficial.

So, in late 2003, the Chesapeake Bay Field Office of the U.S. Fish and Wildlife Service completed production of a long-awaited publication, *Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed*. Within three months of printing, all 15,000 copies of this 82-page guide had been distributed through requests. Rave reviews and continued demand spurred the coordination of a second printing.

Grants were secured from the National Fish and Wildlife Foundation and the Chesapeake Bay Trust toward a second printing. More than 35 partner agencies and organizations stepped up to support the project, providing for 35,000 new copies. With this second printing, an immense number of landscape designers, conservation educators, master gardeners, and novice gardeners can utilize conservation landscaping.

If you live within the bounds of the watershed, you can get a free copy of *Native Plants for Wildlife Habitat and Conservation Landscaping: Chesapeake Bay Watershed*. Contact: Mary Cordovilla, Chesapeake Bay Field Office, 410-573-4591, mary_cordovilla @fws.gov. The guide is also available online at www.nps.gov/plants/pubs/chesapeake/ thanks to partners at the Plant Conservation Alliance. •

moval projects in Kish Creek, in Lewistown, and Canoe Creek State Park in Harrisburg, Pennsylvania. Dozens of other projects include bay-scaping with native plants including underwater grass planting, coastal cleanup, cover cropping to reduce nitrogen release to the Bay, and wetlands restoration.

The Greenbelt Homes, Inc. housing cooperative in Greenbelt, Maryland, has a great program to rescue the woodlands first established by the First Lady, Eleanor Roosevelt, from a cover that was 60% English ivy and multiflora rose. People can walk to downtown Greenbelt rather than drive, and there actually is a greenbelt around the town circa 1940s. Old Greenbelt has 85.6 acres of stewardship forest, as well as other wooded parcels. and is actively involved with urban forestry management. Regular work sessions for the removal/eradication of non-native invasive plant species and tree plantings are scheduled throughout the year. Also scheduled are bird counts and native landscaping seminars and guided hikes. For more information on GHI Woodlands Committee activities, contact Matt Berres, Landscape Specialist, mberres@ghi.coop or 301-474-4161 ext. 132.

Belt Woods, near Bowie, Maryland, includes 45 acres of virgin forest with ancient tulip poplar trees and light-gap openings, pit and mound topography, accumulation of downed and standing dead wood, and soils containing a rich organic layer. The density of breeding birds remains among the highest observed on the East Coast. Contact maureenfine @earthlink.net.

Arlingtonians for a Clean Environment (www.arlingtonenvironment.org) leads regular weekly projects to preserve Arlington County, Virginia, natural areas in partnership with **Virginia Cooperative Extension**, and **Arlington Parks, Recreation and Community Resources**, including storm-drain marking, backyard wildlife habitats and native plants, and RIP, Remove Invasive Plants.

These examples are just a small fraction of thousands of excellent programs striving to preserve and restore native communities in the Chesapeake Bay. For more information, contact the organizations cited, other organizations such as the **Chesapeake Bay Foundation**, native plant societies, **Sierra Club** chapters in the other states within the watershed, and governmental natural heritage agencies. •

The Chesapeake Bay is the nation's largest estuary. Its watershed covers 64,000 square miles, and covers six states and the District of Columbia. Including its major tributaries, the area rises to 69,000 square miles. *Map courtesy of USDA NRCS (Natural Resources Conservation service) NY office.*

RESTORATION AT RUDOLF STEINER H.S.
CONTINUED FROM PAGE 17

neighbors and local conservation clubs like Wild Ones and watershed protection groups. You may find an ecologist or grant-writer that is happy to help. Be clear about your goals, but remember the *process* is as important as the end product.

Make your team as big and diverse as possible. Include science teachers, art teachers, parents, students, anyone who shares your passion for making your land more beautiful, health-giving and balanced, while teaching young folks the importance and joy of stewardship. Always include custodial staff, as they are responsible for the day-to-day care of the property and are usually very knowledgeable.

Explore your options for grants and apply to as many as possible. You can often submit the same project description, with minimal editing, to more than one grant source. Mothers clubs, garden clubs, government agencies, and local businesses may offer grants for outdoor education projects. You may get funding for tools from one source (e.g., American Gardening Association), books from another (e.g., your local mothers club), and plants and seeds from a third source (e.g., Wild Ones).

Take lots of pictures, before, during and after. A picture can speak a thousand words.

Don't get discouraged if you don't get the grants. So much can be done with very little money. You could get plants by participating in a Wild Ones plant rescue. You could outright ask the parent body for donations to purchase plants. And as mentioned above, take care of what you already have. Also, you can reapply for the grants with an updated, improved application. •

Ed Note: Goethean science is science based on the approach of Johann Wolfgang von Goethe, author of Faust, *and who is most generally known for his poetry and literature. Goethe saw his principle contributions to culture as being in the area of science. He authored many works on science, notably* The Metamorphosis of Plants *and his* Theory of Color. *Goethe stressed that one had to start with the actual phenomenon, and that it impossible to divorce oneself from participation in nature, contrary to the method of contemporary science.*

References

Rudolf Steiner School of Ann Arbor
www.rssaa.org

Association of Waldorf Schools of North America
www.awsna.org

The Meeting Place

Chapters, please send your
chapter contact information to:
Calendar Coordinator Mary Paquette
N2026 Cedar Road • Adell, Wisconsin 53001
920-994-2505 • meeting@for-wild.org

Chapter ID numbers are listed after names.

Meet us online at www.for-wild.org

Welcome to Our Newest Wild Ones Chapter!

Connecticut College Arboretum Mountain Laurel (CT) Chapter

CONNECTICUT

Connecticut College Arboretum Mountain Laurel Chapter #78
Kathy T. Dame 860-439-2144
ktdam@conncoll.edu
Connecticut College Arboretum

ILLINOIS

Greater DuPage Chapter #9
Message Center: 630-415-IDIG
Pat Clancy 630-964-0448, clancypj@sbcglobal.net
Third Thursday Jan., Feb., Mar., Sept., Oct., Nov., 7 p.m. Willowbrook Wildlife Center, 525 South Park Blvd. (at 22nd Street), Glen Ellyn. See web site for details.

Lake-To-Prairie Chapter #11
Karen Wisiol 847-548-1650, kawisiol@pcbb.net
Programs usually second Monday, 7:15 p.m., in Byron Colby Barn; some field trips. Prairie Crossing, Grayslake, west side of Rt. 45, south of IL 120, north of IL 137

Macomb Chapter #42 (Seedling)
Margaret Ovitt 309-836-6231 card@macomb.com
Macomb, Springfield, Decatur area

North Park Chapter #27
Rick and Wilma McCallister
rich.mccallister@utstar.com
Second Thursday, 7 p.m.,
North Park Nature Center
5801 N. Pulaski, Chicago

Rock River Valley Chapter #21
Tim Lewis 815-874-3468
natives.tim@insightbb.com
Third Thursday, 7 p.m., usually at Burpee Museum of Natural History, 737 N. Main St., Rockford

INDIANA

Gibson Woods Chapter #38
Joy Bower 219-844-3188 Jbower1126@aol.com
First monday of month, 7 p.m. All meetings are held at Gibson Woods Nature Center, 6201 Parrish Ave., Hammond. See chapter newsletter for details.

KENTUCKY

Frankfort Chapter #24
Katie Clark 502-226-4766 katieclark@vol.com
Salato Wildlife Education Center
Second Monday, 5:30 p.m.,
Greenhouse #1 Game Farm Rd., Frankfort
off U.S. 60 W (Louisville Road)

Lexington Chapter #64
Russ Turpin 859-797-8174, isotope909@aol.com
First Wednesday of month, 7:30 p.m.,
McConnell Spring

Louisville Metrowild Chapter #26
Portia Brown 502-454-4007
wildones-lou@insightbb.com
See web site for meeting schedule.
Meet on 4th Saturdays at Wildflower Woods in Cherokee Park between Cherokee Parkway, Barney Ave., and the Scenic Loop for Saturday Work Day. Contact Ward Wilson, 502-299-0331, ward@wilson.net

MAINE

The Maine Chapter #75 (Seedling)
Barbara Murphy 207-743-6329
bmurphy@umext.maine.edu
Oxford County

MICHIGAN

Ann Arbor Chapter #3
Susan Bryan 734-622-9997
susanbryanhsieh@yahoo.com
Second Wednesday of month (except April), 7.p.m.
Matthaei Botanical Garden, Room 125

Calhoun County Chapter #39
Carol Spanninga 517-857-3766
spanninga8@hotmail.com
Fourth Tuesday, 7 p.m.
Calhoun Intermediate School District building on G Drive N. at Old U.S. 27, Marshall

Central Upper Peninsula Chapter #61
Tom Tauzer 906-428-3203 ttauzer@chartermi.net
Meetings/activities: Fourth Wednesday of the month. See web site for details.

Detroit Metro Chapter #47
Connie Manley 248-538-0654
cmanfarm@mich.distance.net
Meeting dates and times vary. Please call for details.

Flint River Chapter #32
For information, contact Thomas Enright.
taenright@comcast.net
Mott Community College's Prahl College Center Genessee Room

Houghton-Hancock Chapter #60 (Seedling)
Kristine Bradof 906-482-0446 kbradof@mtu.edu

Kalamazoo Area Chapter #37
Tom Small 269-381-4946 yard2prairy@aol.com
Paul Olexia polexia@kzoo.edu
Fourth Wednesday of month, 7:30 p.m., Jan.-April and Oct.-Nov., Christian Church, 2208 Winchell, Kalamazoo

Mid-Mitten Chapter #80
Judy Packard 989-686-1231 jpwild1s@charter.net
Meeting dates and times vary, Chippewa Nature Center, Midland

Oakland Chapter #34
Barbara Bray 248-601-6405
brayfamily@netscape.com
Meeting dates and times vary.
Check web site or call for details.

Red Cedar Chapter #41
Mark Ritzenhein 517-336-0965 mritz@acd.net
Third Wednesday, 7-9 p.m.
Room 139, Radiology, MSU campus
For details: www.for-wild.org/redcedar

MINNESOTA

Arrowhead Chapter #48
Carol Andrews 218-529-8204
carol_andrews@hotmail.com
Various outings in summer.
Call for information or see chapter web site.

Otter Tail Chapter #25
Brad Ehlers 218-998-3590 frostbit@prtel.com
July: Landscaping on site work projects.
August: Tour of projects.
Call for information.

St. Cloud Chapter #29
Greg Shirley 320-259-0825 shirley198@charter.net
Fourth Monday, 6:30 p.m., Heritage Nature Center

St. Croix Oak Savanna Chapter #71
Diane Hilscher 651-436-3836
hilscherdesign@comcast.net
Dan Shaw 651-665-9500 x16
dshaw@greatrivergreening.org
Monthly programs, third Thursday, 7 p.m., at FamilyMeans Building, 1875 Northwester Ave., Stillwater. Weekend field trips substituted in summer. See chapter web site for details.

Twin Cities Chapter #56
Mary Schommer 612-729-5274
rmschommer@hotmail.com
Meetings Third Thursday. See web site for details.
Nokomis Community Center,
2401 E. Minnehaha Pkwy., Minneapolis

MISSOURI

Mid-Missouri Chapter #49
Scott Hamilton 573-882-9909 x3257
scott.hamilton@mdc.mo.gov
Second Saturday, 10 a.m.
Location varies. See: wildones.missouri.org

St. Louis Chapter #31
Marilyn Chryst 314-845-2497 tchryst@swbell.net
First Wednesday, 6:00 p.m.
Location varies. See web site.

NEW YORK

Habitat Gardening of Central New York #76
Janet Allen 315-487-5742
jkallen@twcny.rr.com
Fourth Sunday at 2 p.m., at a local library TBA.
"Show Me, Help Me" meetings at local gardens in June, July, and August. See web site for details.

New York Capital District Chapter #69 (Seedling)
Laurel Tormey Cole 518-872-9458
laurel.tormey-cole@oprhp.state.ny.us
Albany/Schenectady/Troy/Saratoga

OHIO

Greater Cincinnati Chapter #62
Roberta Trombly 513-542-0893,
btrombly@earthlink.net
Chris McCullough: 513-860-4959,
gordchris@fuse.net
Monthly meetings or field trips. See web site.

On the Horizon

WILD ONES NATIONAL QUARTERLY BOARD MEETINGS

All members are invited and encouraged to attend the quarterly meetings of the National Board of Directors If you'd like to participate in the meeting by conference call, please contact the National Office (toll-free) at 877-394-9453 for instructions.

3rd Quarter 2006 National Board Meeting and Annual Meeting will be hosted by the Greater DuPage (IL) Chapter, July 14-16, 2006, in Naperville, Illinois.

4th Quarter 2006 National Board Meeting will be hosted by the Mid-Missouri (MO) Chapter at an office of the Missouri Conservation Department, 1110 South College Avenue, Columbia, MO 65203, on October 7, 2006.

Go Wild With Natives The Gibson Woods (IN) Chapter of Wild Ones will present a native plant symposium, 8 a.m. to 1 p.m., Saturday, September 30, 2006, at the Purdue-Calumet Conference Center, 2300 173rd Street, Hammond, Indiana 46323. Speaker presentations include landscaping with native plants, garden design, soil preparation, and photographing nature. Contact Pat at 219-865-2679 or the Gibson Woods Nature Center at 219-844-3188. Please register by September 9th.

Fourth Annual Wild Ones Photo Contest
The Wild Ones Annual Photo Contest will again be held in conjunction with the Wild Ones Annual Meeting and Conference.

All photo entries must be received by Monday, July 10, 2006, or delivered personally to the conference registration area by Friday, July 14, 2006. To see this year's guidelines and view past year's winning entries, go to www.for-wild.org/download/photocontest2006/photocontest.html.

For information on other native landscaping conferences, please see the Wild Ones web site at www.for-wild.org/chapter/Conf.

Plant Rescues Now is the time to watch for construction sites and new highway development that might damage native habitat. If you become aware of such pending destruction, let your chapter plant rescues chairs and coordinators know so they can follow up with the land owners to see if plant salvage is possible. Then go to www.for-wild.org/download/plantrescue/plantrescue.html to refresh your memory on the *dos and don'ts* of plant rescue, transplanting, etc.

The Meeting Place *(continued from previous page)*

Columbus Chapter #4
Shelby Conrad 614-784-1992
shelbyconrad@yahoo.com
Second Saturday, 10 a.m.,
Innis House, Inniswood Metropolitan Park,
940 Hempstead Rd., Westerville
Field trips: See web site or contact above.

Maumee Valley Chapter #66 (Seedling)
Jan Hunter 419-833-2020
nnn@naturallynative.net
Meeting dates and times vary. Call for details.

Toledo Chapter #77 (Seedling)
Todd Crail 419-539-6810, tcrail@utnet.utoledo.edu
University of Toledo's Stranahan Arboretum

Western Reserve Chapter #73
Barb Holtz 440-473-3370
bph@clevelandmetroparks.com
Meetings every third Thursday, 7 p.m.,
North Chagrin Nature Center (North Chagrin Reservation, Cleveland Metroparks, off Rte. 91 in Willoughby Hills).

PENNSYLVANIA

Habitat Resource Network of Southeast Pennsylvania Chapter #79
Maureen Carbery 484-678-6200
pahabitat@comcast.net
Meetings, times, and locations vary.
Please contact above or check web site for details.

Susquehanna Valley Chapter #68
Jim Hitz 717-741-3996 jrhitz@suscom.net
Meetings, times, and locations vary.
Please contact above or check web site for details.

WISCONSIN

Central Wisconsin Chapter #50
Dan Dieterich 715-346-2849
dan.dieterich@uwsp.edu
Fourth Thursday, 7 p.m., Rooms 1&2,
Portage County Extension Building,
1462 Strongs Ave., Stevens Point.
Times, places vary in summer. Check web site.

Door County Chapter #59
Peter Sigman 920-824-5193 peter@sigmann.net
Summer meetings: Visits to several private properties, usually Saturdays, 1 p.m.
For details see chapter web page or call Judy Renninger for directions 920-839-1182.

Fox Valley Area Chapter #8
Karen Syverson 920-987-5587 ksyve@core.com
July: Member prairie tours. See chapter newsletter for details.

Green Bay Chapter #10
Cindy Hermsen, 920-434-6866,
scentedgardens@athenet.com
Usually third Wednesday. Most meetings at Green Bay Botanical Garden, 2600 Larsen Rd., except in summer. See web site for details.

Lake Woods Chapter #72
Jeanne Munz 920-793-4452
flower_power@wildmail.com
Woodland Dunes Nature Center,
Hwy 310 just west of Two Rivers

Madison Chapter #13
Laurie J. Yahr 608-274-6593
yahrkahl@sbcglobal.net
Meetings last Thursday of the month at Willy Street Co-op Community Room, 7 p.m. See web site or contact above for details.

Menomonee River Area Chapter #16
Jan Koel 262-251-7175
Diane Holmes 262-628-2825
Indoor meetings: third Tuesday, 6:30 p.m.,
teachers lounge, Valley View School,
W180 N8130 Town Hall Rd.,
Menomonee Falls

Milwaukee North Chapter #18
Message Center: 414-299-9888
Meetings: Second Saturday of month, 9:30 a.m. at Brown Deer Park and Ride lot.

Milwaukee Southwest-Wehr Chapter #23
Message Center: 414-299-9888
Second Saturday, 1:30 p.m., Wehr Nature Center,
9701 W. College Ave., Franklin

Root River Area Chapter #43
Nan Calvert 262-681-4899 prairiedog@e-3.cc
First Saturday of the month, 10 a.m.-11:30 a.m.
Riverbend Nature Center, Racine

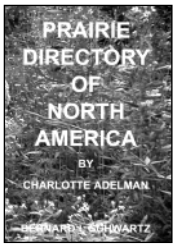
Wisconsin Northwoods Chapter #63
Diane Willette 715-362-6870 diane@bfm.org
Fourth Monday of month, Fireside Room,
Univ. Transfer Center at Lake Julia Campus of Nicolet Area Tech. College, Rhinelander area

Wolf River Chapter #74
Marge Guyette 715-787-3482
jkgmeg@athenet.net
Menominee, Oconto, Shawano, & Waupaca counties

Beginning next issue, The Meeting Place will include chapter names and contact information only.

Join Wild Ones Get Something Free

Prairie Directory of North America



This fabulous directory of North American prairies is yours free when you join or renew your Wild Ones membership **at the $75 level or higher**. Normally retailing for $25 (including shipping and handling), this directory not only locates prairies for you, but also gives you quick facts about each one. Former Journal Editor-in-Chief, Mariette Nowak, said, "Prairie lovers everywhere, this is the book for you!" The *Prairie Directory of North America* is a must-have for your travel reference collection. Join or renew now!

Wild About Wildflowers

Are you wild about wildflowers? When you join or renew your Wild Ones membership **at the $50 level or higher**, you will receive, at no extra charge, this highly acclaimed video. Covering everything from how to choose, plant, grow, and enjoy native american wildflowers and grasses in your own yard, this item sells in the Wild Ones Store for $30, but now you can get it almost for free. Join Wild Ones or renew your membership today!

Wild Ones Membership Form

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Business	☐$200	☐$500	☐$1,000+

See page 17 for Lifetime Membership information.

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☐ $75 or higher level. Send Membership Premium Book.
Limited income/full-time student household: ☐$20/year

Please check: ☐new ☐renewal ☐new contact info

Amount enclosed $_____ for _____ years.

Chapter preference _____
Chapters listed in "The Meeting Place."

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Occasion for Gift _____

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If you are moving, either temporarily or permanently, please let the National Office know as soon as your new address is official. Returned and forwarded mail costs Wild Ones anywhere from $.70 to $2.36 per piece. You can mail your address information to Wild Ones, P.O. Box 1274, Appleton, Wisconsin 54912, call toll-free at 877-394-9453, or go to the Wild Ones members-only pages at www.for-wild.org. Click on item 2 (Update Personal Membership Info) and enter the appropriate changes.

Thank You!

Thanks to your generous contributions, the important Wild Ones mission of promoting environmentally sound landscaping practices will continue. We couldn't do it without your help.

Rock River Valley Chapter's Challenge Grant Comes Through

Wild Ones is pleased to announce that it has received a check for $1,500 from the **Rock River Valley (IL) Chapter** as a 1:2 challenge to the other Wild Ones chapters to help fund the sixth issue of the *Wild Ones Journal*.

The following chapters met their challenge:

North Park (IL) Chapter $500
Gibson Woods (IN) Chapter $50
Ann Arbor (MI) Chapter $1000
Flint River (MI) Chapter $100
Kalamazoo Area (MI) Chapter $100
Arrowhead (MN) Chapter $100
Otter Tail (MN) Chapter $100
St. Cloud (MN) Chapter $200
Twin Cities (MN) Chapter $250
St. Louis (MO) Chapter $250
Greater Cincinnati (OH) Chapter $100
Western Reserve (OH) Chapter $100
Susquehanna Valley (PA) Chapter $50
Door County (WI) Chapter $100
Erin (WI) Chapter $230
Fox Valley Area (WI) Chapter $300
Menomonee River Area (WI) Chapter $300
Milwaukee-Southwest-Wehr (WI) Chapter $300
Wolf River (WI) Chapter $50

Totaling $4,180!

Which means we have $5,680 to put toward future issues of the *Wild Ones Journal*. Thank you all so very much!

Matching Donations

Michael and **Nancy Kind**
Lake-To-Prairie (IL) Chapter
$50 from **Pepsi Americas**

Seeds for Education

Bob Carlson and **Nancy Hoffmann**
Rock River Valley (IL) Chapter

Sara Mills
Madison (WI) Chapter

George Skinner and **Anne Hanley**
Twin Cities (MN) Chapter

Erin (WI) Chapter

Sara Stein Memorial

With one more donation from **Carol Buxton**, Ann Arbor (MI) Chapter, we are pleased to have been able to forward a total of $200 to the Sarah Stein Memorial Fund, to be used for the local Vinalhaven (Maine) library native gardens.

Wild Ones Journal

Barbara Gallagher · Twin Cities (MN) Chapter

Give to Wild Ones at No Cost to Yourself

Next time you're thinking of buying something – a book, a CD, a DVD, a digital camera, or even a new computer, consider buying it through our new Amazon-associate bookstore. Almost anything you buy at Amazon.Com, if you enter through our bookstore, will result in a percentage of the cost of your items being donated to Wild Ones – at no extra cost to you: www.geostar.com/wobookstore.