



Growing through Education

Wildflowers

Spring 2010 • Volume 15, Number 2

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WAM

By increasing awareness and knowledge, the Wildflower Association of Michigan encourages the preservation and restoration of Michigan's native plants and native plant communities.

WHEN GOOD SOIL IS BAD AND BAD SOIL IS GOOD:

What You Should Know About Soil and Native Plants

The horticulture of native plants sometimes gets tangled up in traditional horticulture or agriculture, especially as it relates to the understanding of soils and soil fertility. The gardening dogma has been to extol the wonders of rich, fertile soil, the use of compost and commercial fertilizers that promise faster, bigger, and better. Although rich soil may be beneficial for your vegetable garden, agricultural crops, and some perennials, this is not the case for growing most native plant species.

There are three types of customers that commonly visit our nursery. One type laments their soil is too dry and sandy and plan to haul the soil away and bring in topsoil. The second type has clay soils and complains it is so compacted they cannot do a thing with it and plan to haul it away and bring in topsoil. The third boast that

they have been composting for years and have created very rich soils. Unlike the story of *Goldilocks and the Three Bears* - none of these customers have it "just right".

Soil is a precious resource. As an environmentally oriented native plant gardener, hauling soil away and replacing it with "top soil" is an option that should almost never be considered. The one possible exception is if the soil is contaminated with heavy metals or other pollutants and even in many of these situations removing the soil is ill advised.

What is commercial topsoil anyway? At one time it commonly was Michigan peat-muck soil mined from drained wetlands. This is still available, but is becoming increasingly more expensive and difficult to find. Remember, mining this material cannot be done sustainably and results in the destruction of wetlands. Today topsoil is commonly made up of sand with a lot of organic matter added to it to create a dark and rich (manufactured) soil. Regardless of the source, adding topsoil is generally not necessary and can lead to unanticipated problems such as the introduction of weeds through seeds, rhizomes or other propagules. In addition, laying one soil type upon another without mixing the layers can result in drainage problems. Finally, the extra fertility will not be an advantage, but a hindrance.



Sandy Soil Compost Clay Soil

Courtesy of U.S. Dept. of Agriculture

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~ ASSOCIATION NEWS ~



President's Note...

As I write this in my office in the College of Pharmacy at Ferris State University, the sun is bright. Spring seems just around the corner. For those of you who don't know me, I have been a member of WAM since the early 1990's and since about 2003 have been involved with the Glassen Grant program. I'm a Professor of Pharmacognosy

with life-long interests in wildflowers, toxic plants and botanical/natural product chemistry. I joined Ferris in 1975 and have been in charge of the College of Pharmacy Kazerovskis Medicinal Greenhouse and Gardens since being hired. One garden in particular, our Native American Medicinal Plant Collection, contains numerous native Michigan wildflowers, shrubs, and trees.

WAM has continued to prosper due to the dedication, energy and talents of its officers. I have been mindful of the many people who presented the very best role models to me as I immersed myself in our organization. Esther Durnwald, who recently completed her term as president is a shining example. An excellent organizer and administrator, she has strengthened our organization during what may quite possibly be the worst economic times Michigan has faced. Even WAM has experienced it as our support from Glassen continues to be reduced due to the market's slow recovery. We all owe Esther our deepest gratitude for her leadership. Also to

be thanked is Suzie Knoll who has stepped down to assume a new position in Mexico. To be remembered for her great advice is Nancy Small.

I can't but trumpet the success of our annual conference. I am confident that it will rank as one of our best. The speakers were excellent, their topics reflected your input and desires, and the theme 'Growing Communities' stressed the cooperation and connections we observe in our native plant communities which may be applicable to success in our human communities as well.

What can you expect from me as your WAM President? Hard work for an organization I have grown to respect and enjoy, dedication to its mission and to you its members, and an expansion of the excellence WAM represents in our state and Great Lakes Region. Tourism is one of the top industries in our state, which has initiated the 'Travel Michigan' and 'Pure Michigan' advertising campaigns around the country. What would a tourist find if the wild flowers we conserve and educate our youth about, or other flora and fauna we discuss in our meetings and newsletters were not here? We collectively, as WAM, do have a very real impact on our state's economy and its recovery from the current recession. Additionally, our efforts have tremendous effects on our population in terms of relaxation, pride, and joy as they visit the many beautiful spots in their state. Make a belated but important New Year's resolution to become more active in your WAM! Everyone in the state will be better off for your efforts. Feel free to contact me whenever you wish. My email address is: krueger@ferris.edu.

Robert Krueger, PhD, President

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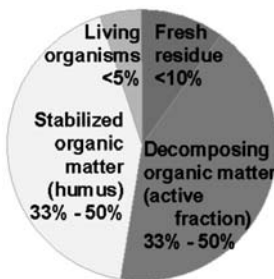
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~ WHEN GOOD SOIL IS BAD AND BAD SOIL IS GOOD ~

~ Continued from Page 1 ~

Soil is much more than the sum of its parts. It is made up of inorganic minerals (sand, silt, and clay), decaying organic matter, plus an abundance of living things including fungi, bacteria, insects, roots, etc. If you think of the soil as a recycling factory, the mineral component would be the factory building, the organic matter (dead stuff) would be the product being recycled, and the microorganisms and other animals, the workers. Under natural conditions the rate of accumulation of organic matter in the soil is generally in equilibrium with its rate of breakdown. This is important since organic matter ties up nutrients in a form unavailable to plants and releases the nutrients only when the organic matter is decomposed.

Under natural conditions soils sometimes do accumulate organic matter, but this takes hundreds if not thousands of years. If the organic matter is being broken down faster than it is being replenished the accelerated breakdown will result in a decrease in water holding capacity and soils become more prone to compaction. In addition, there will be a short-term spike in nutrient release. Plants will respond by growing vigorously. Intuitively this may not seem like a bad thing but the plants may grow faster than desired, attaining an unanticipated size and requiring a lot of pruning. Having the right microbial workers working at the right speed maintaining this equilibrium is important.



U.S. Dept. of Agriculture

Tilling the soil also changes the balance of accumulation to breakdown of organic matter. Tilling loosens the soil and provides aeration. This is not necessarily bad, but it does alter the community of soil microorganisms, which accelerates the

degradation of the organic matter. In addition, tilling brings weed seeds that lay dormant in the soil (often called the seed bank) to the soil surface where they will germinate. There are certainly instances where tilling and adding organic matter to the soil is beneficial. When organic matter is needed in your garden to provide water holding capacity on sandy soils, or for soil aeration on clay soils you should use organic amendments that are high in carbon and low in nitrogen. These are products like rice hulls, wood chips or straw. This will provide the most sustained, although temporary, improvement in soil water holding capacity, soil aeration, and drainage. This is accomplished by slowing the decomposition of organic matter. Adding amendments rich in nitrogen to the soil stimulates microbial growth - in effect you have added a third shift at the recycling factory and given all the workers strong coffee. Adding high carbon, low nitrogen organic matter will slow decomposition, and support a different complement of microorganisms such as mycorrhizal fungi, *Rhizobium* and *Frankia spp.* bacteria. - all soil symbiotes.

Symbiotic microorganisms coexist with plants in a manner that benefits both plant and microbe. Mycorrhizal fungi, for example, enhance uptake of soil nutrients and water and are found associated with most terrestrial plants. In exchange the plant provides photosynthates (mostly sugar and starches) to the fungi. *Rhizobium spp.* and *Frankia spp.* are two types of soil microbes that fix atmospheric nitrogen for certain species on the most infertile sites. These organisms work for free and deliver the nitrogen directly to the plant. Interestingly, the presence of these types of soil organisms is inversely correlated to the amount of soil nitrogen. Native species have co-evolved with these soil micro-organisms to tolerate soils of moderate to low fertility.

While native plants, like most other plants, respond to greater soil fertility, weedy species in general can take better advantage of increased nutrients. Low soil fertility will generally give native species a competitive advantage over the high feeding, non-native weeds. Many beloved native plants such as lupine, bush clovers, harebell among others are only

able to survive when plant competition is minimized by low soil fertility.

Soil testing and pH

I know I am in the minority, but I find traditional soil testing for native plantings completely unhelpful. These tests provide valuable information for agriculture and some types of horticulture but not for natives. A great deal is made of soil pH and indeed it is an important soil parameter. The fact is there is very little you can do, long term, to alter soil pH. Turning a couple of shovelfuls of soil over will help you determine if the soil leans to the sandy or clay side of the continuum. The degree and depth of soil compaction will also be obvious. Don't forget to also look at the surrounding vegetation, which will reveal useful information about the soils and which natives are best suited to the site.

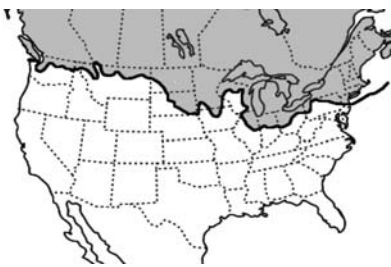
My advice is, "don't obsess over soil fertility" - after all, you are growing native plants not field corn. Embrace the soil you have and work with it by choosing plants that will grow under the conditions you have. You may initially need to add some low nitrogen/high carbon organic matter to get things going. There is a time and a place for soil amendments, but it is important to be mindful that all amendments are temporary. They should be used as an interim step toward establishing vegetation that is not reliant on regular soil amendments. The good news is that all you need to do is establish native plants. Time will take care of the soil. This will prove to be the simplest, lowest cost, and most environmentally sensitive solution.

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Wildtype Native Plant Nursery

~ WHAT YOU MIGHT NOT KNOW ABOUT EARTHWORMS ~

Ask anyone on the street if earthworms are good for ecosystems and you will undoubtedly receive a resounding “YES!” When asked why, they may say something like “earthworms mix and aerate the soil.” It is a basic ecological concept that we may have learned as early as kindergarten. However, recent research on invasion of these seemingly benevolent creatures into previously worm-free hardwood forests of the Great Lakes region has seriously challenged that belief.

Researchers at the University of Minnesota, and elsewhere, have documented dramatic changes in native hardwood forest ecosystems when exotic earthworms invade. These changes include losses of native understory plant species and tree seedlings, changes in soil structure and declines in nutrient availability. There is also fascinating evidence emerging that the changes caused by exotic earthworms may lead to a cascade of other changes in the forest that affect small mammal, bird and amphibian populations, increase the impacts of herbivores like white-tailed deer, and facilitate invasions of other exotic species such as European slugs and exotic plants like buckthorn and garlic mustard. These results suggest that exotic earthworms may pose a grave threat to the biodiversity and long term stability of hardwood forest ecosystems in the region. Much more research is needed.



Native earthworm species have never been documented in most of the Great Lakes region of North America. Any native North American species of earthworms (in the family Megascolecidae) that may have been living in the region were extirpated

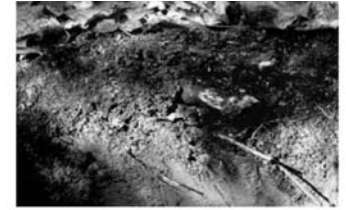
when glacial ice sheets covered the Upper Midwest 11,000 to 14,000 years ago, leaving the glaciated areas of North America worm free. Natural recolonization by earthworms happens very slowly, with earthworms spreading less than 1 mile in 100 years. So, forests of the Great Lakes Region developed in the complete absence of earthworms. For thousands of years, no earthworms existed in this region until European settlers began arriving around the mid 1800's.

All of the earthworms you have come to know and love in the Great Lakes region are exotic, most are European (in the family Lumbricidae) and initially arrived with European settlement. But they continue to be transported, intentionally and unintentionally, through a range of human activities such as the dumping of unused fishing bait, transport of compost & mulch, and anything else that moves soil.

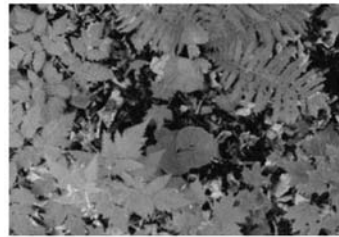
Lacking a powerful detritivore such as earthworms, decomposition of the annual leaf litter in earthworm-free hardwood forests is controlled by fungi and bacteria. In this situation, decomposition is slower than accumulation of new litter and the result is the formation of a thick, spongy forest floor, often called a “duff layer”. The duff layer can be up to 10 cm (4 or 5 inches) thick in very rich sites dominated by sugar maple and basswood trees. Dozens of understory plant species are native residents of the forest floor including the much loved trilliums and other spring flowers. The duff layer provides protection from predation and extremes in



Intact forest floor before earthworm invasion.



Thick black topsoil after earthworm invasion.



Typical understory plant community in a sugar maple forest before earthworm invasion.



An extreme example of the remaining understory plant community after earthworm invasion.

temperature and moisture to the seeds of understory plant species, many of which take up to two years to fully germinate and begin to grow. These understory plants and tree seedlings root almost exclusively in the thick forest floor since this is where most of the available nutrients are found.

Research is beginning to emerge that suggests that the invasion of earthworms leads to a cascade of changes in hardwood forest ecosystems. With the loss of the forest floor, many animals such as ground nesting birds, small mammals, amphibians & reptiles, and insects & spiders lose their primary habitat and many food sources. While earthworms can be a very good food source for many of these animals, the loss of cover that the forest floor used to provide is now gone. With the disappearance of the forest floor, so go many of the insects and fungi that provided high quality food for the forest's small animals. So, it's a mixed bag.

White-tailed deer densities are much higher in modern hardwood forests than they were a century ago, and research has shown that this can contribute to lack of regeneration of herbaceous understory species including many tree species. In addition, research shows that the combined effects of deer browsing and earthworm invasion can have an even larger effect than either one alone, leading to even more severe impacts on understory plants and tree seedlings.

While earthworms have often been shown to have positive effects on soil structure and fertility in agricultural and garden ecosystems, these very same creatures can have very different effects in previously earthworm-free hardwood forests. When earthworms invade our native forests, they change some of the important underlying processes that support the health and diversity of forest plants and animals.

~ Continued on page 5 ~

~ WHAT YOU MIGHT NOT KNOW ABOUT EARTHWORMS ~

Different plant species respond to earthworm invasions differently. Some native plants appear to be very sensitive, so much so, that they can rapidly disappear when earthworms invade a forest.

Some examples of these plants include:

Life Form	Latin (scientific) name	Common Name
Herbaceous plants	<i>Aralia nudicaulis</i>	Wild Sarsaparilla
	<i>Aralia racemosa</i>	Spikenard
	<i>Streptopus roseus</i>	Twisted Stalk
	<i>Uvularia sessilifolia</i>	Wild Oats
	<i>Uvularia grandiflora</i>	Large-flowered Bellwort
	<i>Polygonatum pubescens or</i>	
	<i>Polygonatum commutatum</i>	Solomon's Seal
	<i>Aster macrophyllus</i>	Big Leaf Aster
	<i>Hepatica americana</i>	Round-lobed Hepatica
	<i>Trientalis borealis</i>	Star Flower
	<i>Thalictrum dioicum</i>	Early Meadow Rue
Ferns - Fern Allies	<i>Lycopodium obscurum</i>	Round-branched Ground-Pine
	<i>Dryopteris</i> species	Shield-Fern
Tree Seedlings	<i>Acer saccharum</i>	Sugar Maple
	<i>Acer rubrum</i>	Red Maple
	<i>Ostrya virginiana</i>	Ironwood
	<i>Quercus rubra</i>	Red Oak
	<i>Tilia americana</i>	Basswood / Linden
	<i>Amelanchier</i> species	Serviceberry
Shrubs	<i>Amelanchier</i> species	Serviceberry

In contrast, there are a few native plants species that do very well in the wake of earthworm invasions. Such as:

Life Form	Latin (scientific) name	Common Name
Herbaceous plants	<i>Arisaema triphyllum</i>	Jack-in-the-pulpit
	<i>Smilacina racemosa</i>	False Solomon's Seal
Grass-like plants	<i>Carex pensylvanica</i>	Pennsylvania Sedge
Tree Seedlings	<i>Fraxinus</i> species	Ash

The reasons for the different responses by different plant species to earthworm invasion is not completely clear, but evidence suggests that several other factors contribute to the affects we see following earthworm invasion including:

- changes in mycorrhizal fungi communities
- the impact of deer herbivory may increase after earthworms invade
- secondary compounds that may protect plant root changes in the seedbed conditions
- changes in light levels on the forest floor
- other exotic species may be facilitated by earthworms
- For more information go to: <http://www.nrri.umn.edu/WORMS/default.htm>

Used with permission:
CM Hale, *Worm Watch*

There is a soil foodweb. It is the set of organisms that work underground to help plants grow. There are billions of organisms that make up the soil foodweb, including fungi, protozoa, nematodes, arthropods and earthworms. Each organism plays an important role in keeping the soil healthy for all living things.

~ BOOK REVIEW ~

The Dirt on Soil

I can still remember back to my undergraduate days at Michigan State University and the particular feeling of disinterest that surrounded attending soil science classes. While intuitively we all realize the critical nature that soil plays in the foundation of all terrestrial ecosystems, the traditional treatment of soil science was generally lifeless. I could not wait to get this dry subject done with and move on to all the plants, insects and animals that really interested me.

For most of the next ten years my ideas of soil changed very little. Once I became a grower of native plants, I began to get a glimpse at the diversity and dynamics of the soil community. I was introduced to mycorrhizal fungi and bacterial inoculums, but even then NPK (nitrogen, phosphorus, potassium) was purely chemical and fertilization was more about numbers and less about biology. More and more I realized that all soil is not the same, and that after soil disturbance, time was needed to restore some of the site's productivity. Then I read *Teaming with Microbes*, by Jeff Lowenfels and Wayne Lewis, Timber Press 2006, Portland, OR.

In the first half of the book I was introduced to the concept of the soil food web, an idea not at all foreign to anyone that has studied ecosystems and predator/prey relationships. Yet, because most of the organisms that drive the soil nutrient cycles are too small for the human eye to see, it is easy for us to ignore them or consider them unimportant. The use of electron microscopes leads the authors to remind us that, at extreme magnification, everything has teeth! Plants run the soil system but, they are far from the only player in this drama. In the chapter devoted to classic soil science the authors begin to tie in the effects that biological organisms have on the physical formation and chemical characteristics that different soils possess, something that I wish had been stressed decades earlier.

I enjoyed the descriptions and interactions provided for the cast of characters that make up healthy soil; bacteria, fungi and algae, slime molds, protozoa, nematodes, arthropods, earthworms, gastropods and vertebrates. Too often even veteran gardeners look on members of these groups primarily as pests, yet the authors show many beneficial interactions within and between all of them. The expanded soil food web helps to explain the critical role that biology has in the way that plants and organisms work in the soil to cycle nutrients. As in more familiar ecosystems, when one or more species are lacking, the entire system becomes unstable, allowing less desirable organisms to gain the upper hand.

Rather than define quality soil by its physical structure or nutrient components, we are introduced to the concept of defining healthy soil as a function of its biological activity such as fungal to bacterial ratios and nematode concentrations. In addition to just measuring nematode numbers, the authors refine our understanding of these organisms in terms of habit, such as those that eat bacteria, fungus, protozoa or other nematodes. Thinking of nematodes as more than just a pest gives us a much richer understanding of how very complex soil ecosystems are. I found myself pondering the fact that this vast subterranean world outnumbers and out-weighs all of the organisms that walk above it.

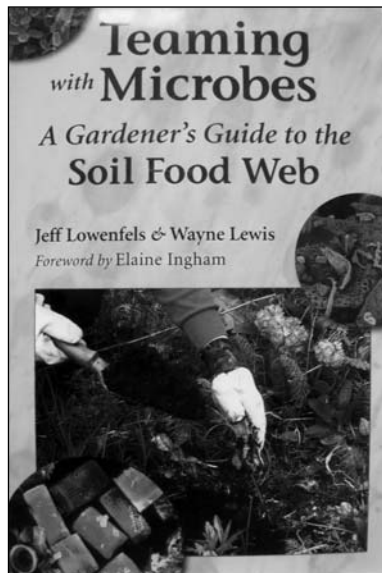


Photo by Steve Keto

In the second half of the book Lowenfels and Lewis cast the soil food web players into the various plant communities, which helped me understand that by encouraging these organisms in different ways, gardeners can positively influence soil pH, nitrogen, sulfur, and carbon cycling. The book reminds us all of the disadvantages of relying on chemical salt fertilizers. When chemical salts are used they desiccate organisms, irritate earthworms, and increase nutrient leaching by destroy the natural mechanisms that keep soil fertility right where it is needed most - next to the roots (the rhizosphere).

The book's primary focus is on the creation and use of actively brewed compost teas, as well as traditional mulches and compost. The authors stress the use of biologically active materials to inoculate, support, and improve soil biology to the benefit of gardeners and plants. The compost tea, a new trick for some gardeners, is explained in detail and promoted as an important new addition to the sustainable gardener's bag of tricks. The brewing process they outline can easily be adapted to any scale garden.

Lowenfels and Lewis synthesize the science of food web biology into nineteen rules that I found myself referring to throughout the book. They make a strong case for the link between soil organisms, pH, the form of nitrogen available, and plant selection and succession. By reflecting on these simple statements gardeners can adjust their soil management practices to encourage the soil community that best supports the plants they want to grow.

This book is a quick read at 182 pages, but will get you thinking about the fascinating world under your feet. I recommend it to any curious gardeners looking to improve their organic soil management practices and anyone who like me, was turned off by the traditional treatment of soil science.

**Stephan Keto, Landscape Supervisor
Western Michigan University**

~ WILDFLOWER CORNER ~

The Beauties of Spring

This is the time of the vernal equinox, when hope for spring weather truly arrives. And this is the time when the woodland flowers truly shine. So, what are the stars of the woodland garden? Some of the more interesting ones are the ephemerals, shining for brief moments of beauty and glory, and then disappearing until the next season.



Dutchman's Breeches
Photo by Jim Hewitt

Two of the first to appear and the shortest-lived are Dutchman's-breeches, *Dicentra cucullaria*, and squirrel-corn, *Dicentra canadensis*, members of the bleeding heart family. These two are must-haves with their interesting blooms and feathery, blue-green fern-like leaves. Unless they are blooming, it is virtually impossible to tell them apart by the leaves alone. True to their name, the Dutchman's breeches have two upward-pointing outward, balloon-like parts with yellow tips, giving them a pantaloon shape. Squirrel corn flowers are rounded at the base and somewhat resemble kernels of corn. Both bloom in April, with the leaves dying back just a month later. The squirrel corn blossoms a week later than the Dutchman's breeches, so plant them together to get a longer bloom time in that particular area of the garden. These plants often are seen in the wild growing around tree roots.



Squirrel Corn
Photo by Jim Hewitt

Because they go dormant so soon after blossoming, their nutrient needs are less. Good companion plants are ferns, bloodroot, and wild ginger.



Spring Beauties
Photo by Jim Hewitt

when growing in masses. It can only be grown in the southern part of the Lower Peninsula. The broad-leafed type grows only

The spring beauties, *Claytonia virginica*, with narrow leaves and broad-leafed *Claytonia caroliniana* are wonderful in the garden because their blossoms appear so early. The narrow-leafed variety which can bloom as early as March until May, has five white petals with pink veins and a yellow center. It is a low-growing, somewhat delicate-looking plant and is best in the northern part of the state, and because of its more northern latitude, blooms a little later. It has pink blossoms with more pronounced veins. Both species die back when the leaves of the forest appear. Good companion plants are hepatica, wild ginger, bloodroot, trillium, rue anemone, and foamflower.



Bloodroot
Courtesy of the Smithsonian Institution

Another plant welcoming spring is bloodroot, *Sanguinaria canadensis*. In April its striking, snow-white blossoms, with eight to twelve petals, appear on a single stalk. Partially enclosed by the still-opening leaf, they present a very dramatic appearance. The flowers are short-lived, blooming from one to five days, depending on weather and temperatures. They close in cold weather. The leaves are most interesting with their oval, notched shape and are attractive in themselves, sometimes becoming up to ten inches across and lasting well into summer.

When the rhizomes and stems are cut or broken, they release a red sap, which native peoples used as both a poison and medicinally, albeit carefully. After blooming, torpedo-shaped seed pods develop that last into mid-summer.

William Cullina in his book, *Wildflowers*, describes a very interesting symbiotic relationship between bloodroot and ants.

The seeds are quite large and have a growth on them that resembles a small, white caterpillar. Ants discover the seeds lying on the ground, carry them off to their nests, and store them where they are safe from other animals, such as birds. After the "caterpillars" are eaten, the seeds remain. This results in new plants growing some distance from the parent.

Because the leaves last longer, plant bloodroot with Dutchman's breeches and squirrel corn. Rue anemone, bellwort, Jacob's ladder, Virginia bluebells, and lady fern are also good companions. The simple, elegant beauty of the flowers and the interesting, long-lasting leaves make them welcome in any garden.

The undisputed queen of the woodland garden is, of course, the trillium, *Trillium grandiflorum*, with its gorgeous flower of three white, triangular petals and three smaller, green sepals in which is nestled the lovely yellow center. All of this rises above three leaves, somewhat ovate in shape, and spaced equally distant from one another, forming a triangular aspect. In many places, especially further north, they are numerous, and to see the forest floor carpeted with these blooms is truly a wondrous sight.

Forty-two species of trillium are native to North America. The bloom period ranges from April to June, depending on latitude, and the flowers may turn pink with age. Trillium is more common in the northern parts of our state and decrease in numbers in Ohio, Indiana, and Illinois. In Michigan the *Trillium grandiflorum* is a protected wildflower and may not be removed or picked in the wild. Buy plants only from reputable dealers.

The trilliums are extremely long-lived and easy to grow. Clusters of them are striking, and are attractive planted beneath spring-blooming shrubs. Good companion plants are ferns, Virginia bluebells, and wild geraniums. The *Trillium grandiflorum* is a must-have in any Michigan woodland garden.

Even though the flowering time of these plants is brief, they are well worth having in the garden as the true harbingers of spring. As Lady Bird Johnson once said, "Where flowers bloom, so does hope."

Judy Webber

Information from; *Growing and Propagating Wildflowers*, William Cullina, *Landscaping with Native Plants of Michigan* Lynn Steiner, *Trilliums* by Frederick and Roberta Case, *Michigan Wildflowers* by Harry Lund.

~ A STUDENT'S PERSPECTIVE ~

When Cheryl Tolley, a good friend of mine, asked if I wanted to spend part of my spring break at a wildflower conference a mile from my apartment, how could I refuse? Because my past experience did not include the “native plant” talk that is actively circulating today, I did not know what to expect.

It seems to me that the native plant movement is partially an effort to “undo” what past generations destroyed. While the Native Americans lived off of the land’s resources and treated everything with respect and reverence, Europeans had a much different view of the land. Land was to be owned and managed in a way that provided them with adequate food for their families and potential buyers. Management practices included stripping down acres of forestland and leveling it to cultivate crops. This process destroyed many habitats and complex ecosystems. Roughly two hundred years later, we have realized the mistake. Now, in an effort to restore areas back to the way they were, many devout organizations, businesses, and movements have sprung up across the nation, including in Michigan.

Do not misunderstand me. I believe, as many of you may agree, that this is the right thing to do. We cannot simply sit back and watch people slowly strip away the few remaining wild areas we still have. Rescuing plants, trying to change housing development laws, and planting acres of native plants is a vital step in the right direction.

Education is key in getting people to hop on the native plant bandwagon. That is why a gathering such as the WAM conference in March is such a great way to engage many different people regarding the concept of native plants and landscape restoration. I learned a lot at this conference. As I said before, I did not know a whole lot about the native plant movement and all it involved. I learned that it involves rain gardens, prairie restorations, pollinators, watersheds, predators of invasive insects, identifying and eradicating invasive plant species, and ongoing education in our schools and of the public.



One of my favorite sessions was lead by Dawn Vezina with the Organization for Bat Conservation. She talked about the benefits of inviting native bats into our yard. Learning a little bit about a bat’s habitat and diet, I was able to see how native bats, such as the big brown bat (actually only about 3-4” long!), could help keep invasive insect populations down and help fertilize gardens with their guano (fecal matter). Big brown bats eat June and cucumber beetles, moths, and mosquitoes. Their guano has high concentrations of nitrates, which are huge growth-boosters for plants in the garden.

Another session I really enjoyed was given by Lisa Brush with the Stewardship Network. She emphasized ways to communicate with the different people we meet and how to explain the need for native plants. She suggested listening to what other people are concerned about. For instance, if a new retention pond was recently built, and people complain that it is not safe because children might drown in it, listening to their concerns will show that we are not just trying to push our belief that retention ponds are necessary, but that we are trying to see where the other person is coming from. She also mentioned that most people have a cause that they are trying to work for, whether it is poverty, hunger, or native plants. If we only emphasize how crucial our issue is, it can be offensive. Instead, we need to point out what we have in common- the fact that we are all trying to do the world good – but in different areas.

After attending the conference, I have come to the conclusion that this has been one of the most beneficial and informative venues I have come upon to learn about native plants. Now, I am better equipped to inform my co-workers, fellow students, and even my family about how and why native plants are an essential part in coming closer to achieving the goal of restoring areas to the way they were intended to be.

Brenda Landhuis

Brenda is a junior at MSU in Landscape Design.

Photo by Kathy Lund-Johnson

~ SUPPORTING WAM’S GRANTS AND SCHOLARSHIP PROGRAMS ~

WE NEED YOUR SUPPORT! As a member of WAM, you are undoubtedly aware of the excellent support we provide to schools, etc. through our Glassen/WAM educational grants program. Its support is described on our web site, www.wildflowersmich.org/, link to ‘Grant Program’. And you are also aware of the economic problems currently existing everywhere. As a result, this year we funded fewer deserving programs at levels lower than before. This occurred despite the use of almost \$1,000 from the other meager funds available to support these efforts. WAM has 501(c)(3) tax exempt status. Therefore, your contribution to WAM, no matter how small (or how big!) will qualify as a tax deduction. These monies will be used to provide additional registration scholarships to college students and educators attending our annual meeting, as well as to augment the monies gratefully received from the Glassen Foundation. Thank you for your support.

Robert Krueger, Ph.D.
WAM President and Grant Chairman

*Other students receiving
scholarships:*

Fai Foen

Allison Krueger

Pat Reed

*all from the University
of Michigan.*

~ BUSINESS MEMBER PROFILE ~

FROM SEED TO THRIVING BUSINESS

The seed for Sandhill Farm was planted when I became a member of the Wildflower Association of Michigan in 1986. One of WAM's founding Mothers, Kim Herman, was my inspiration; she nurtured and encouraged my interest. When I moved to my current property in 1992, it was basically old farm fields that had not been in active agriculture for a number of years, with adjacent woodlots and wetlands. Kim suggested a plant inventory of the property. Gerald Wilhelm, from Conservation Design Forum, spent two days with me and Kim inventorying the 200+ acres. We were amazed and delighted to learn that the property had a Floristic Quality Index of 77.76 with 333 native species. Recognizing the potential from what was already there, Kim, along with Harry and Elin Doehne, motivated me to start my own native plant business. The seed had germinated.

The intense development in the Grand Rapids area during the 1990's gave me many opportunities to increase the number and genetic diversity of the existing plants through conducting plant rescues. All of the plants that were rescued were planted out in the woods here to continue growing. Some of the plants I rescued included unusual species like red trillium, *Cimicifuga* and starry Solomon's seal. Many of these species have disappeared in the Grand Rapids area due to development pressure.

Craig Elston, (a long time member of WAM and director of the Hudsonville Nature Center) gave me my first opportunity to actually sell plants at the Gillette Nature Center plant sale. This sale was always held on Mother's Day weekend and was called the Trillium Festival. Trillium is one of the species I sell, so it was a natural fit. Since that time the deer have eaten most of the trillium there and the sale has changed its trillium theme.

Since that first plant sale, my business has grown along with the native plants. The busiest months for sales are April, and May



Autumn Grasses at Sandhill Farm



Cheryl Tolley with Compass Plant

into June. Many plant orders come from landscape designers and architects, and other people involved in commercial plantings. My business is basically wholesale, and I prepare many good-sized plant orders in the spring as well as selling at plant sales. It seems there aren't enough hours in the day until about July!

Although the focus of Sandhill Farm is primarily herbaceous woodland species and ferns, I had the opportunity to collect native grass seed on the Newaygo prairie and planted 25 acres of former corn field to big blue stem, Indian, little blue and switch grasses. In addition to twenty-seven woodland species and nine ferns, I have grasses and some woodland edge and sunny species available. Most of those were collected on plant rescues. I found it difficult to leave any behind. Even some trees found their way here. One result of all the natives on my property is incredible bird-watching. I have seen northern shrikes, meadowlarks, numerous hawk species, owls, warblers and other birds.

Since I work full time as a professional gardener in residential gardens, my main area of interest is helping homeowners increase the number of natives they are planting in their gardens and teaching them about the benefits native plants bring. I have done many classes for Frederik Meijer Gardens, master gardeners and garden clubs. I also offer tours of Sandhill Farm for those who want to see the plants in their native habitat or how they can be incorporated into an existing garden.

**Cheryl S. Tolley, Owner
Sandhill Farm**

~ WAM GRANTS & ANNUAL MEETING NEWS ~

WAM is pleased to announce that the following organizations received grants for their projects involving the use of native plants. We encourage schools and other organizations to apply for grants in 2010.

Friends of White Pine Trail
Belmont, MI
Gretchen Zuiderveen, Coordinator

Huron Chapter Master Gardener Assoc
Bad Axe, MI
Carol Holtrop, President

Mattawan Later Elementary School
Mattawan, MI
Michele VanAllen, Coordinator

Baldwin Elementary School
Rochester, MI
Patty Godin, PTA Chair

McGregor Elementary School
Rochester, MI
Susan Gerrits, PTA Board Member

West Middle School
Rochester Hills, MI
Elizabeth Witten, Coordinator

Allen Elementary Parent Council
Ann Arbor, MI
Joan Brush, Project Coordinator

Hampton Elementary School
Rochester Hills, MI
Ruth Seyburn/Lynn Olszewski,
Student Council Advisors

The Roeper School
Bloomfield Hills, MI
Susan Guenther, Committee Chair

Buhr Park, Childrens Wet Meadow
Ann Arbor, MI
Mark Charles, Coordinator

Millpond Waterfront Garden
Clarkston, MI
James Brueck/Lola Koch, Co-chairs

University Hills Elem. School
Rochester Hills, MI
Jennifer O'Neil Green, Coordinator

RECEIPIENTS OF THE WAM GRANTS



Front row: Lynn Olszewski, Michele Van Allen, Ruth Seyborn, Clare Brush, Sophia Werthmann, Susan Gerrits

Back Row: Dave Lorsa, Jim Brueck, Patty Godin, Carol Holtrop, Gretchen Zuiderveen

Missing from photo: Susan Guenther & Jen O'Neil

Photo by Kathy Lund-Johnson

WAM ANNUAL MEETING REPORT

Esther Durnwald presided over her last meeting as president of the WAM board. Here are the highlights of that meeting. Jean Weirich reported a balance of \$12,793.17 in the association account at the end of 2009. The conference is a self sustaining event, although funds for WAM grants have fallen. The support of member donations is a vital component for the success of this important program.

There was discussion regarding a change in how *Wildflowers* is distributed to members through regular mail, email and on the website. Proposed changes would honor the request of some members to receive the newsletter via email and would also reduce expenses.

Changes in the board of directors include: Tom Small appointed to fill out the term of his wife Nancy and Kathy Prelesnik to complete the term of Suzie Knoll. Jean Weirich, Susan Baldyga-Grubb, and Maryann Whitman, were re-elected. Robert Krueger assumes the post of president. WAM will join forces with the Red Cedar Chapter of Wild Ones at the Lansing Home and Garden Show March 18th thru the 21st.



Front row: Bob Krueger, Maryann Whitman, Kathy Prelesnik

Back Row: Darwyn Heme, Trish Hacker-Hennig, Tom Small, Chad Hughson, Esther Durnwald, Susan Baldyga-Grubb, Cheryl Tolley

Missing from photo: Jean Weirich & Ray Rustem

Photo by Kathy Lund-Johnson

~ BUSINESSES & ORGANIZATIONS ~

We thank these businesses and organizations for supporting WAM with their business level membership.
Business membership does not imply WAM endorsement of an individual business.

American Roots

Trish Hacker-Hennig
1958 Hidden Lake Trail
Ortonville, MI 48462
Ph. 248-627-8525
Email: americanrootsnat@aol.com

Ann Arbor Parks, NAP Division

Dave Bowman
1831 Traver Rd.
Ann Arbor, MI 48105
Ph. 734-996-3266
dborneman@ci.ann-arbor.mi.us

Better Finds

Lynnette Fouch-Bugenske
2749 Schemm St.
Saginaw, MI 48602
Ph. 989 980-6228
Email: miwildflowers@charter.net

C. Raker & Sons, Inc.

Drew Lathin
10371 Rainey Road
Litchfield, MI 49252
Ph. 517-542-4547
Email: drewlathin@raker.com
www.raker.com

David Borneman LLC

123 Mixtwood St.
Ann Arbor, MI 48103
Ph. 734 994-3475
Email: davidborneman@yahoo.com
www.restoringnaturewithfire.com

Designs by Nature

Vern Stevens
9874 Chadwick Rd.
Laingsburg, MI 48848
Ph. 517 651-6502
Email: designsbynature@hotmail.com

Edison Environmental Science Academy

Julia Kirkwood
924 Russell St.
Kalamazoo, MI 49001
Ph. 269 337-0550
Email: kirkpap@yahoo.com

Flint River Wild Ones

Terry Geir
105-1/2 Main Street
Flushing, MI 48433
Ph. 810-691-5945
Email: gillt57@aol.com

Four Season Nursery

Brian Zimmerman
434 Monroe Street
Traverse City, MI 49684
Ph. 231-929-7400
www.fourseasonnursery.biz

Geum Services, Inc.

Steve Allen
P.O. Box 035
Richland, MI 49083
Ph. 269-370-0150
SteveA@prairiesmoke.com

Good Earth Landscape & Interior Design

Michael A. Saint
6126 Snowapple
Clarkston, MI 48346
Ph. 248-620-7188
michaelsaint@goodearthlandscapellc.com
www.goodearthlandscapellc.com

Hidden Savanna Nursery

Chad Hughson
18 N. Van Kal
Kalamazoo, MI 49009
Ph. 269 352-3876
Email: info@hiddensavanna.com
www.hiddensavanna.com

Huron-Manistee National Forest

Pat Ruta-McGhan
Box D, 650 North Michigan Ave.
Baldwin, MI 49304
Ph. 231 745-4631
Email: pruta@fs.fed.us

JF New & Associates

Dave Nicholson
11181 Marwill Ave.
West Olive, MI 49460
Ph. 616 847-1680
Email: dnicholson@jfnw.com
www.jfnw.com

Mary Ann's Michigan Trees & Shrubs

Mary Ann Menck
28092 M-40 Hwy.
Paw Paw, MI 49079
Ph. 269 628-2474
Email: mamenck@mei.net
www.maryannstrees.com

Mott Comm. College Gardening Association

Rebecca Gale-Gonzalez
1401 East Court St.
Flint, MI 48503
Ph. 810 762-0455
Email: Rebecca.gale@mcc.edu

Michigan Wildflower Farm

Esther Durnwald
11770 Cutler Rd.
Portland, MI 48875
Ph. 517 647-6010
Email: wildflowers@voyager.net
www.michiganwildflowerfarm.com

Native Connections

Jerry Stewart
17080 Hoshel Rd.
Three Rivers, MI 49093
Ph. 269 580-4765
Email: jerry@nativeconnections.net
www.nativeconnections.com

Michigan Nature Association

Natalie Kent
326 E. Grand River Ave.
Williamston, MI 48895
Ph. 517 655-5655

Missaukee Conservation District

Sherry Blaszak
6180 W. Sanborn Rd.
Lake City, MI 49651
Ph. 231-839-7193
sherry.blaszak@macd.org
www.missaukeecd.org

Oakland Wildflower Farm

Ruth Vrbensky & Richard Dobies
520 North Hurd Rd.
Ortonville, MI 48462
Ph. 484 969-6904
Email: oaklandwildflowerfarm@gmail.com
www.oaklandwildflowerfarm.com

R. Vix Kennedy, Inc.

Robert Kennedy
mdrvki@ismi.net

Sandhill Farm

Cheryl S. Tolley
11250 10 Mile Rd.
Rockford, MI 49341
Ph. 616 691-8214
Email: cherylt@iserv.net

Saving Birds Thru Habitat

Kay Charter
P.O. Box 288
Omena, MI 49674-0288
Ph. 231-271-3738
info@savingbirds.org
www.savingbirds.org

Spence Restoration Nursery

Doug Spence
2220 E. Fuson Rd.
Muncie, IN 47302
Ph. 765-282-7154
Email: kevin@spencenursery.com
www.spencenursery.com

Wetlands Nursery

Jewel Richardson
P.O. Box 14553
Saginaw, MI 48601
Ph. 989 752-3492
Email: jewel-richardson@peoplepc.com

Wildtype

Bill Schneider
900 N. Every Rd.
Mason, MI 48854
Ph. 517 244-1140
Email: wildtype@msu.edu
www.wildtypeplants.com



*The richness I achieve comes
from Nature, the source of
my inspiration.*

Claude Monet



