



Missouri Native Plant Society Hawthorn Chapter Newsletter

Volume 28, Number 4
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April 2013

Future Activities

Watch email for email notices of impromptu hikes. **Please offer suggestions of your favorite walking destinations** to Paula or Becky; we will get them posted as soon as weather permits. **PLEASE call or email Becky 657-2314 or Paula 474-4225 as soon as you know you will attend an activity.** We don't want to leave anyone behind if weather or plans change. Leave your name and PHONE # if you leave a message. If you do not communicate by email and have a suggested destination or want notice of a walk, call Paula 474-4225 to get on the phone list **Call Paula for more information.** **Carpool meeting place, commuter parking lot at AC and US63.** **We will no longer offer planned tours of local wild areas. Occasionally one will be posted on the calendar. Otherwise, only interested members will be contacted by email a few days in advance of a mosey activity. As stated above, let your ideas for a mosey location be noticed. We will let the rest of the local membership know about the visit to your favorite location.**

April

12 - 14 Fri – Sun: State Field Trip [SW] Pineville, Big Sugar State Park/Huckleberry Ridge State Park. More info in Petal Pusher.

13 Saturday, Spring Native Plant Sale, Bradford Farm, 10 to 2. Our booth set up starts at 9. Call Paula 474-4225 or Becky 657-2314 to volunteer. Need help for various projects throughout three weeks before sale.

18 Thursday: Day with Native Plant Enthusiasts, Meet for lunch 11:30 at RagTag, 10 Hitt St [Just south of Broadway]. Continue by carpool to Rudolph-Bennett CA for spring flower id. Probably return about 3:30 -4pm. Call Ann 573-220-6167 for information.

21 Sunday Earth Day Columbia: booth and plant sale noon to 6. Booth set up 9-10 am. Call Paula 474-4224 or Becky 657-2314 to volunteer. Need help tagging plants before sale.

May

See complete explanation inside.

4 Saturday, Mosey with MPF Glades of Indian Trail Natural Area

11 Saturday, Mosey with MPF Sand Prairie Guided Tour

18 Saturday Field Tour of MPF's Welsch Tract Restoration Project

25 Saturday Mosey with MPF Valley View Glades Natural Area Guided Tour

13 Monday Regular Membership Meeting, 7 PM Unitarian Universalist Church, 2615 Shepard Blvd. Program TBA

16 Thursday: Lunch with Native Plant Enthusiasts, 11:30 at RagTag, 10 Hitt St [Just south of Broadway]. Informal exchange of ideas and information.

MONPS State Board Meeting Schedule for 2013

Summer – June 14-16, 2013 – [SE] Salem or Ellington, Cave Branch Camp.

Fall - August 20-22, 2013 – [NE] Kirksville, Morris Prairie and Union Ridge CA.

Winter - December 7, 2013 – Columbia, Dunn-Palmer Herbarium

Thanks to Ann Wakeman, Nadia Navarette-Tindall, David Trinkline, Roxie Campbell for their submissions and suggestions to the newsletter this month. Thanks to Doug Miller for keeping the website up to date. **We would like to get announcements, impressions, species accounts, poems, links to scientific articles or other creative nature writing from you, too.**

Moseys with Mo Prairie Foundation

4 May Saturday, MPF Glades of Indian Trail

Natural Area Natural History Biologist and MPF member Susan Farrington will be your guide to tour the very impressive Big Glade and a glade or two at Plank Hollow at Indian Trail Natural Area at Indian Trail CA, north of Salem. Highlights will be wild pink, known only from a few Ozark counties and the yellow variant of Indian paintbrush, plus a full complement of the usual beautiful glade flora. Plank Hollow should have a great flush of new growth and color. RSVP to Susan at 314-402-3345 or susan.farrington@mdc.mo.gov to get meeting place details. 12:30 p.m. to roughly 5:00 p.m. Bring sack lunch.

11 May Saturday MPF Sand Prairie Guided Tour



Sand prairie photo by Bob Gillespie.

Natural History Biologist Bob Gillespie will be our guide to the fascinating sand prairies, swales, and savannas of the Bootheel. Meet Bob at the Cape Girardeau Nature Center parking lot at 10:00 a.m. to carpool/ caravan to Sand Prairie Conservation Area (about 20 miles south of the Nature Center) and a private sand prairie as well. The Cape Girardeau Nature

Center address is 2289 County Park Dr., Cape Girardeau, MO 63701. For those coming from St. Louis, from the Highway 270 and I-55 junction, travel south on I-55. The Nature Center is 103 miles or 1 hour and 45 minutes. Take Exit 99 to the Nature Center. Bring water and a sack lunch. RSVP to 888-843-6739, info@moprairie.com or to 573-356-7828.

18 May Saturday: Field Tour of MPF's Welsch Tract Restoration Project

Join MPF Past President Stan Parrish and Prairie Operations Manager Richard Datema for a tour of the restoration in progress at MPF's Welsch Tract, an 80-acre addition to Coyne Prairie in Dade County. Learn about the savanna restoration, brush clearing, and invasives removal techniques. See the portion of the property seeded in Jan. 2013 with a diverse mix of locally harvested seeds. Directions: At the junction of state highways E and D in Dade County (8 miles north of 160), go east 1 mile on E then turn south on County Road 41. Go about 1 mile and park along the road. Dress for a walk through some tall vegetation. 10:00 a.m. to 1:00 p.m. Bring a sack lunch and water. RSVP to 417-788-2308.

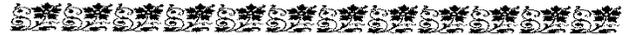
25 May Sat: Valley View Glades Natural Area

Guided Hike 10:00 a.m. to noon. Join guides Bill and Joyce Davit for a walk through this 225-acre complex of glades in Jefferson County owned by MDC. Mo. evening primrose and other wildflowers should be at peak blooming. Free. Bring a sack lunch. Valley View Glade is on Route B between Hillsboro and Morse Mill. Meet in the parking lot. RSVP to info@moprairie.com or call 636-390-8025.

Announcements:

March Lunch at RagTag

18 Thursday: Day with Native Plant Enthusiasts, Dress for a walk in the woods! Meet for lunch 11:30 at RagTag, 10 Hitt St [Just south of Broadway]. Continue by carpool to Rudolph-Bennett CA for spring flower id. Probably return about 3:30 -4pm. Call Ann 573-220-6167 for information. Highlights: large leek patch, many spring ephemerals, for those with a little time – a surprise at the end. Rain date for mosey 25 April.



Our Network

Look for announcements by email of activities with Missouri Prairie Foundation [MPF], WildOnes [WO] Columbia Audubon Society [CAS] and training from Stream Team and MO Master Naturalists. Other pertinent information comes from Plant Conservation Alliance [PCA]. Direct membership in all of these is free or nominal and can bring you a wealth of information on natural environmental issues. You won't have this source forever.



Don't forget to keep a journal of first leaves, first flowers, first seed and report it to Bud Burst. Check out, "google", the NRCS Plant Database for plant identification and habitat needs.



Classes at LU

Still time to sign up for Native Plant and Gardening Classes at LU. List of times and subjects are posted in the February newsletter available on our website = www.columbianativeplants.org.



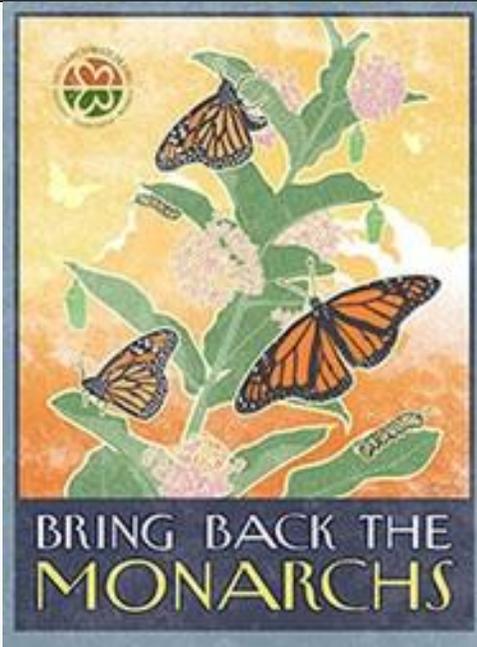
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Just to let you know I submitted a photo [one of many for different applications] of our chapter roadside planting for possible use in the **MODOT roadside poster /brochure**. The whole committee was happy to present it on the back cover!! Poster will possibly be printed this summer. Becky Erickson; one of a committee of four.



Last month an extensive article was reprinted here about monarch butterflies and other insects and their relationships with milkweeds [*Asclepias* spp.]. The upcoming Petal Pusher will have a three-part article on Monarchs by Jeff Cantrell, a biologist with MDC. Ann Wakeman is heading up a monarch

education program with Lea Langdon through WildOnes and Columbia Outdoor Classrooms. Please support their work. Look up Monarch Watch on line and do something to help.

What you can do to help Bring Back the Monarch:

Submitted by Ann Wakeman

Plant milkweeds for monarch caterpillars.

Plant a native butterfly garden or nectar waystations for adult monarchs.

Reduce or eliminate pesticides applied to flowering plants; this includes garden vegetables and fruits.

Spread the word - help Monarch conservation take flight.

Missouri Milkweeds

for monarchs (In order of food preference):

Marsh milkweed

(*Asclepias incarnata*)

Common milkweed (*A. syriaca*)

Butterfly milkweed (*A. tuberosa*) >> *BE photo*

Whorled milkweed (*A. verticillata*)

Purple milkweed (*A. purpurascens*)



Native Nectar plants for monarchs:

Coneflowers (*Echinacea* sp.); Milkweeds (*Asclepias* sp.)

Blazingstars (*Liatriis* sp.); Asters; Phlox (*Phlox* sp.)

Websites for more information

<http://www.wildones.org/land/monarch/>

<http://monarchwatch.org/waystations/waystation-brochure.pdf>

<http://www.fs.fed.us/wildflowers/pollinators/monarchbutterfly/faqs.shtml>



This swamp milkweed raised about 70 monarchs in 2006. Haven't seen these numbers since then.
BE photos



More You Can Do . . .

Wild Ones Natural Landscapers has partnered with **Monarch Watch** so the Mid-Mo Chapter of Wild Ones is planning to set up booths for educating people about the Wild for Monarchs program. We want to get gardeners, schools and other ecology minded folks interested in planting milkweeds for the diminishing Monarch. Estimates from their wintering ground is down to 2.94 acres from a high of 22 acres. Illegal logging disrupting their overwintering grounds in Central Mexico, drought and heat as well agricultural practices (read: herbicide resistant crops and their wind-born pollen) in this country are contributing to their rapid decline in numbers. Recognized is the need to plant more milkweeds which monarch caterpillars eat exclusively.

Ed note: Monarchs can use all the help they can get. Hawthorn Chapter will have some milkweeds for sale at our plant sales in April, June, and Fall – date to be determined. You can always contact one of the officers for contacts for purchase of milkweed plants. Your purchase of plants from our own nursery benefits our chapter educational grant fund. Your purchase and planting of milkweeds and other nectar plants benefits many pollinators and Monarchs.

Deer love milkweeds. With our over-population of deer and very little food for them, you will need to keep these recipes handy for deer repellent. They do not bother pollinators.

Deer Repellent: spray on vulnerable plants. Repeat every week or so, or after rain. If one doesn't work, try the other one.

First recipe: 2 eggs 1 cup water, 1 cup skim milk 2 Tablespoons liquid dish detergent. Emulsify the eggs in a blender. Stir in remaining ingredients. Reconstituting powdered milk works as well as fresh milk. Adding cayenne pepper to the mix may reduce rabbit damage.

Second recipe: – can be doubled. 6 egg whites [buzz in blender, adding -], 1/2teaspoon wintergreen oil, 1/2 teaspoon rosemary oil, 2 tablespoons guar gum powder. [Last 3 found at Clover's] Add water to half-full. This is a concentrate. Store in refrigerator. Put this in sprayer to about ¼ full and add water; shake vigorously.

Spring Wildcrafting: Going for the Green(s)

David Trinklein trinkleind@missouri.edu

Re-print. Originally published: "Missouri Environment and Garden"
MU Division of Plant Sciences March 5, 2013

DISCLAIMER: The information provided in this article is designed to provide helpful insight on the subject discussed. The author is not responsible for any adverse reactions that might be experienced from the consumption of edible wild greens or plants mistaken to be edible wild greens. All of these plants can be investigated by surfing USDA Plant Database

Wildcrafting is defined as the gathering of plants (often greens) from their natural or "wild" habitat. Normally this is done for culinary or medicinal purposes. Perhaps it is a throwback to our early ancestors who were foragers as well as planters that we annually scour the outdoors to find nature's bounty. Wild greens have better flavor when gathered early in the spring while they are still young and tender. March is a good month to begin harvesting from nature's "salad bowl" if your taste buds yearn for food that can be a bit piquant in nature.

The cardinal rule to remember when hunting wild greens is to **be certain to know what you are gathering**. If in doubt about the identity of a plant, then pass it by. *Missouri Wildflowers* by Edgar Denison (published by Missouri Department of Conservation) is an excellent reference for the identification of edible wild greens; it also serves as a good field manual for the enjoyment of other members of our wild flora. Also, remember to ask permission first if you go onto someone else's property. Some good places to hunt for wild greens include wood lots, old pastures and fields, along stream banks, and even in your yard.

Although many of these plants grow along roadsides, it is best not to gather them from such places because of the risk they may be contaminated by residue from automobile exhaust. All plants gathered from the wild should be carefully inspected and thoroughly washed with two or more changes of water. The inspection is needed to find and remove grass, insects and other debris. As a final precaution, when eating wild greens for the first time start with small amounts. Allergic reactions to any new food can happen, be it cultivated or from the wild.

The following plants are popular table fare for those who enjoy edible wild greens and are common to Missouri.

Cutleaf Toothwort (*Cardamine concatenata*) – One of our native spring ephemerals. After a long winter without fresh vegetables to consume, pioneer women eagerly awaited the first appearance of toothwort (or crow's foot). It produces low-growing plants found primarily in rich woodlands and wooded slopes. Cutleaf toothwort has five narrow, deeply-lobed leaves that are arranged like the toes on the foot of a crow, hence the common name. Although the leaves of toothwort are edible, the plant's rhizomes are what most wildcrafters covet. They have a spicy, radish-like flavor and can be cut up fresh and added to salads, fermented (to sweeten them) or boiled.

Dandelion (*Taraxacum officinale*) - With its familiar jagged leaves, milky stems and yellow sunburst flowers, dandelion is well-known to most of us. Indeed, many lawn owners spend quite a bit of time and effort trying to eradicate this common plant from their lawns. Dandelion greens are especially rich in vitamin A and iron and are best for eating during March and April. The best way to gather this plant is to cut off the whole crown close to the soil, pluck out the flower stem and sort out any "trash". The leaves of this maligned weed can be mixed with other greens to make a salad that is quite a treat.

Melting Snow Means Better Habitat for Frogs and Toads

By Park Naturalist Roxie Campbell

While we may or may not have enjoyed the snow we've received, it is welcome moisture that will benefit wildlife such as frogs and toads that need ponds for laying eggs and raising young.

With the severe drought, the June, 2012 frog and toad survey had little to report ... except that is for three bats, one barred owl, six lightning bugs and the flyover of the international space station! Statewide, reports from those who monitor frogs and toads indicated fewer numbers especially for the June survey and reported species calling several weeks earlier than usual March through May. This year's surveys may reveal more about the effects of the 2012 drought as we suspect that fewer frogs completed metamorphosis and that some adults may have died from lack of moisture and food.

Here in March, 2013, we should start hearing Northern spring peepers, Western chorus frogs, Southern leopard frogs, pickerel frogs and American toads. Each can be identified by its distinct call. Pickerel frogs, whose call sounds like a snore, are detected at only 1% of statewide survey locations, but are usually detected at several Rock Bridge ponds – probably because pickerel frogs overwinter in park caves in addition to finding suitable habitat in park ponds. Helping conduct frog and toad surveys on three nights in spring and summer is just one task that volunteers do. If you'd like to help, contact Roxie Campbell at Roxie.campbell@dnr.mo.gov or call 573-449-7400. Or, just for fun, listen for frog calls on warm evenings (above 50 degrees F).

Ed comment: I realize we are all grouchy about the late-winter, early-spring snows. I think we will need to re-adjust our attitudes about precipitation = take any and all whenever we get it. Even if it is 'flood' conditions or at the "wrong date on the calendar": It is better than drought.



Toothwort

Casey Burks photo



Lambsquarters (*Chenopodium album*) - Often referred to as wild spinach, lambsquarters appears later in the season when most other wild greens have become too mature for consumption. Its alternate common name refers to the fact this plant does taste a lot like spinach and also is high in vitamins and minerals. Its oval-to-lance shaped leaves are light-green above and mealy-white underneath. Lambsquarters is a common plant in gardens, along roadsides, in waste areas or anywhere there is plenty of sunshine and few trees. Young plants can be pinched off just above the ground, cooked and eaten whole. Tender young leaves from older plants can be harvested and eaten all summer long.

Nettle (*Urtica* spp.) - Few people who have ever encountered a patch of stinging nettle will fail to recognize the plant at a later date. In spite of its anti-social behavior (caused by formic acid contained by its fine bristles) nettle is a popular source of springtime table fare. Its leaves are egg-shaped-to-oblong with a heart-like base and toothed margins. Both stem and leaves are covered with the afore-mentioned bristles. Nettle leaves are best for eating when gathered early in the spring when young (and while wearing gloves). Young leaves lose their stinging properties when boiled and many consider nettle to be tastier than spinach.

Shepherd's-purse (*Capsella bursa-pastoris*) - This plant derives its common name because its mature, heart-shaped seed pods that look like miniature forms of the pouches once carried by ancient shepherds. It is a winter annual that springs to life from a prostrate rosette of deeply-cut, lance-shaped leaves. Common to fields, country roadsides, pastures and idle land, it has long been used to pep up the taste and flavor of less-savory greens such as lambsquarters. Shepherd's-purse can also be used raw in tossed salads or eaten by itself. Legend has it that old-time raftsmen who floated downstream great flotillas of logs cut from the hills went to great lengths to find this plant along the riverbanks they past by because of its peppery taste.

Watercress (*Nasturtium officinale*) - As one might guess from its name, water cress is an aquatic plant. It often can be found floating on the surface and creeping around the banks of ponds, pasture creeks or cold springs. Water cress has small, bright-green leaves arranged on long slender stems and is at its succulent best from April to June. It has a delightfully pungent taste and has been used for years as a salad or garnish for meat. Early pioneer physicians used water cress in the treatment of scurvy. The latter stems from its high ascorbic acid (vitamin C) content; it also contains significant amounts of vitamin A, iron, calcium and potassium.

Wild lettuce (*Lactuca virosa*) - This plant is common to lowland pastures, cut-over timberlands and along the moist banks of streams. Like its relative the dandelion, it is best for eating in March and early April. Later in the season wild lettuce becomes bitter and unpalatable. It can be identified by its smooth, deeply-lobed, light-green leaves. When broken, leaves and stems of this plant produce a sticky, milk-like sap. Wild lettuce can be mixed with other greens or eaten raw in a wilted lettuce salad.

Winter Cress (*Barbarea vulgaris*) - Commonly called "creasies" in days-of-old, winter (or upland) cress is a superb potherb that has been picked and eaten for generations. It is so popular that commercial canning companies have been known to market it as a canned vegetable. Common in fields, gardens and waste places, winter cress starts from seed late in the summer and develops a rosette of dark green, five-lobed leaves in the fall. It grows remarkable well during warm periods of winter and is ready for harvest and eating in March. Mature winter cress is

rather bitter; this problem can be avoided by gathering it when young or mixing it with other greens.

Readers of this article should note that pokeweed (*Phytolacca americana*) is not included on the preceding list of wild greens even though many old timers relished poke "salid". Because of toxic compounds contained in all parts of this plant we cannot include it on our list of plants acceptable for wildcrafting and human consumption. Therefore, readers are urged to avoid it.

To prepare wild green the "old-fashioned" way simply place them in a sauce pan with a little water, salt to taste and cook until tender. Wild greens should not be over-cooked or cooked in a lot of water for fear of losing vitamins and minerals. The bitterness of some greens such as winter cress and dandelion can be offset by cooking them with milder plants. Greens can also be seasoned with bacon drippings or a dash of vinegar or lemon juice for added taste. Wild greens blend well with any menu but (arguably) go best with a "working man's" meal of soup beans, fried potatoes, corn bread and raw onions. Undoubtedly, such a dinner sustained many a mountain farmer of the past during long springtime days of clearing land, walking behind a horse-drawn plow and putting in a new crop.



YOUR chapter needs help with Booth



Earth Day in Columbia

The bottom line is that we need a few more hands to help. We also need someone with a van or truck to move the tables and display boards. If you can't make it to help on the day of a sale, there is much that needs to be done from now to early April. You can call the member who keeps the nursery Becky, 657-2314, to find out what needs to be done and when it needs to be done.

We are asking for only a few days in the spring and a couple of days in the fall for you to help with an effort to inspire people to get back in touch with nature and understand the value of our native vegetation.

Project Inspire in Rolla on April 13th.

Connecting kids and their families with nature.

By Nadia Navarrete-Tindall, State Extension Specialist.
Lincoln University Native Plants Program

The Lincoln University Native Plants Program is collaborating with an event called “**Project Inspire**” on April 13th. The event is organized by the US Forest Service and will take place at Lane Springs Recreation Area/Mark Twain National Forest near Rolla. The goal of the event is to provide outdoor skills to young, underserved women and their children from and near Rolla. Lincoln University and more than 20 institutions and non-profit organizations are participating.

The Native Plants Program will have an educational booth about native plants for pollinators and native edible plants and will help to establish a demonstration garden for pollinators and butterflies. The ground has been prepared and the garden is ready to be established.

Participating kids and their families will help planting during the event. Because the garden is located in a shady location, the Native Plants Program developed a design with shade tolerant species. We are providing spicebush and some spring wildflowers but we are asking Native Plant Society members and others to help us with plant donations of other plant species included in the design. Please see attached table.

Donations are accepted any time. We will plant what we can on the 13th and keep planting the rest of the year. Other species to be included are *Heuchera americana*, Jacobs ladder, mayapple, wild ginger, bellwort or any other species that are adapted to woodlands. Please send email to Nadia at Navarrete-TindallN@LincolnU.edu or call at 573-681-5392 or 573-234-2018 if you have plants to spare.

If you are near Rolla plan to visit this beautiful spring, the garden will be to your left before you get into the picnic area. Directions to Lane Springs from Rolla, go 12 miles south on Hwy 63; turn west onto Forest Road 1892 (marked by entrance sign). Follow this road 1.5 miles to recreation area. Feel free to use the design in your garden if you have a shady location that you want to landscape. The design was drawn by Sue Bartelette. Contact Nadia for design.

Native Plants needed for Pollinator Garden at Lane Springs, MO. in table in next column.



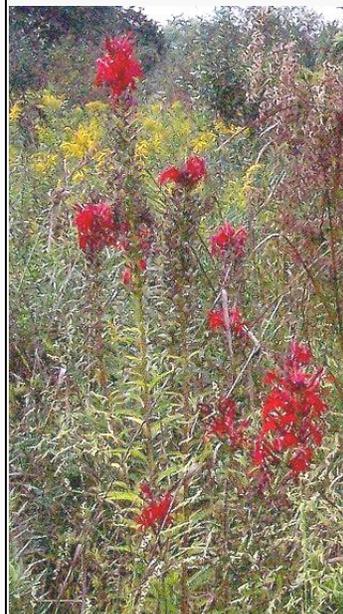
Celandine poppy:
one of the plants needed for the Project Inspire garden near Rolla

BE photo
[featured in the 2012 WildOnes calendar]

plants needed	Common name	Scientific name
4-6	Black Cohosh	<i>Veronicastrum virginicum</i>
5	Blue Lobelia	<i>Lobelia siphilitica</i>
14	Bluebells	<i>Mertensia virginica</i>
6	Cardinal Flower	<i>Lobelia cardinalis</i>
14	Celandine poppy	<i>Stylophorum diphyllum</i>
5	Christmas fern	<i>Polystichum acrostychoides</i>
8-10	Columbine	<i>Aquilegia canadensis</i>
2	Eastern Wahoo	<i>Euonymus atropurpureus</i>
10	Orange coneflower	<i>Rudbeckia fulgida</i>
6	Purple milkweed	<i>Asclepias purpuracens</i>
20	Roundleaf Ragwort	<i>Senecio obovatus</i>
14	Skullcap	<i>Scutellaria incana</i>
6	Solomon's Seal	<i>Poligonatum biflorum</i>
2	Spicebush	<i>Lindera benzoin</i>
8	Sweet Williams	<i>Phlox divaricata</i>



Blue lobelia [*Lobelia siphilitica*]; BE photo
one of the plants needed for the Project Inspire garden near Rolla.



[left] *Lobelia cardinalis*, one of the plants needed for the Project Inspire garden near Rolla.

[below] Sweet William, *Phlox divaricata*, one of the plants needed for the Project Inspire garden near Rolla.



Pollinators, Forest Management, and a New Range of Opportunities to Engage Landowners

By Russ Richardson, West Virginia Consultant Forester.

Condensed Reprint from Forest Matters Newsletter January 2013 USFS

Since I started working as a forestry consultant in Massachusetts in 1975, I have always searched for innovative forest management ideas and opportunities that might stimulate my clients and keep them more connected with their woodlands.

But now that I've gotten a lot of experience. I have been actively promoting a combination of forest management strategies for woodland owners that include management of nontimber commodities such as native medicinal plants, leasing of hunting rights, and wildlife habitat development projects that help increase species diversity and enhance woodland recreational opportunities. In nearly all cases the focus of management involves ownership activities that extend beyond commercial timber harvesting.

My interest in native pollinator habitat was initially stimulated by a retired teacher with a serious interest in butterflies. She received funding from a small grant that involved late winter and early spring burning of grass and brush on her property in an effort to encourage flowering native plants that would improve habitat for butterflies. As a result of watching the changes that took place on her property after just a couple seasons of fire treatment, my interest was piqued.

By the late 1990s I was annually conducting late winter burns of permanent log landings and woodland openings scattered across my own property to provide habitat for butterflies and other pollinators.

I discovered that the NAPPCC www.NAPPCC.org, in cooperation with the Natural Resources Conservation Service (NRCS) www.NRCS.gov and the Xerces Society for Invertebrate Conservation (www.xerces.org), began presenting a series of introductory and informational pollinator programs planned for every State in the country. The daylong sessions include participation by experts from the Xerces Society as well as local biologists and wildlife professionals in an effort to give the individual State programs a regional flavor. Information and publications available at these "Pollinator Short Courses" provide a very solid platform for natural resource managers and property owners to build upon. A book published by the Xerces Society, *Attracting Native Pollinators: Protecting North America's Bees and Butterflies*, is the first reference book on the topic. In addition to introducing readers to the scope of the issues facing native pollinators, this guide provides practical information that includes identifying different types and categories of pollinating insects; the dynamics of pollinator habitat; bees of North America; creating a pollinator friendly landscape; program ideas for land managers, educators, or parents; a glossary; and links to multiple sources of information.

Educate Yourself

This is a new subject to both foresters and landowners, and managing or even identifying pollinators is a topic in which nearly all natural resource professionals are deficient. Attending and participating in the programs offered by your local NRCS and the Xerces Society is the best first step. Most likely, State agencies, academia, and nonprofits have developed their own guides, brochures, and publications. The information is out there—we just have to look for it, read through it, and start talking to our peers about how we can enhance pollinator habitat through forest management.

There's an opportunity to engage yourself and your friends and neighbors about beneficial pollinator insects, birds, and mammals. Just like any wildlife species, pollinators need food and shelter. We need to determine what the landowners have in their woods and recognize what plants exist for pollinator food or if there are nesting places for them. From there we can recommend practices to enhance pollinator habitat. Talking about pollinators, especially butterflies, appeals to many of my urban clients, especially those with kids. Timber and general forestry talk tends to bore kids, but some of the things that can be done for the benefit of pollinators can get the entire family involved.

Spread the Word

Educational outreach opportunities are another means of spreading the word about pollinators. Today there is hardly a grammar school kid in America that hasn't heard about the plight of Monarch butterflies and their endangered winter habitat. Because Monarch butterflies have such a positive image, capturing the enthusiasm that school kids have for Monarchs and using that interest to develop pollinator "friendly" demonstration gardens at schools or other public spaces is pretty much an outreach no brainer.

What We Do Know

We know that bats like to hide under the bark of shagbark hickory or any loose-barked species. Hummingbirds like red and orange flowers. Many gardening catalogs now offer houses for bats, bees, lady bugs, and butterflies. And a variety of guides also show how to build these nesting houses and where to locate them.

(<http://www.fs.fed.us/wildflowers/pollinators/beebox.shtml>)

Diversity Attacks

For most of the eastern hardwood forests, the issues impacting the health and diversity of native pollinators include several facets of natural resource management that also challenge sustainable forestry: climate change, air pollution, invasive species, forest fragmentation, habitat loss, and overpopulation of deer.

For example, **the impact of invasive species** on a variety of pollinators and the flowering plants necessary for their survival is a science that is just starting to get off the ground. One well-known impact of an invasive plant on a specific pollinator is the relationship between **garlic mustard (*Alliaria petiolata*)**. It outcompetes and replaces a host of spring wildflowers that are important to native pollinators, including trillium, spring beauty, bloodroot, wild ginger, hepatica, Dutchman's breeches, and several species of toothworts. So control of invasive plants is important to the survival of our native pollinators.

My final advice?

- Educate yourself about pollinators. Take advantage of any Web-based or live workshops to learn about pollinator food, habitat, and shelter. If there aren't any workshops, read the existing literature.
- Remember the five B's: birds, bats, beetles, butterflies, and bees.
- Prescribe pollinator-friendly practices in your land stewardship, tree farm, and forest management plans.
- Control invasive species and deer, and minimizing the use of pesticides.

Please Step Forward For Service

Please contact one of the officers ready to volunteer a little time to a very good environmental and educational service. We need people to serve as officers, to grow plants for fundraising and we need people to man our information booth at events such as Earth Day and Bradford Plant Sale. If you get this only by mail, please consider requesting email delivery; it saves us money.

___ Regular (\$16.00)*

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Make check payable to: **Missouri Native Plant Society.**

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