



# Missouri Native Plant Society Hawthorn Chapter Newsletter

Volume 28, Number 3  
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March 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.**

## March

**11 Monday Regular Membership Meeting, 6 PM** Unitarian Universalist Church, 2615 Shepard Blvd. Program will be given by graduate student, Rhett Hartman. He researches katydids at Tucker Prairie, the only place you will find them in pink. He will present "10 things you didn't know about katydids!"

**16 Saturday:** with Wild Ones, clean up and planting of Capen Park and Forum Gardens. Call Ann 573-642-6927 for time and more information.

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

## 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: Come with WildOnes for Plant ID in the Field** - Rudolph-Bennit CA in NW Boone County. Leave at 9:30am from Commuter Park at 63 and AC, Lunch at Heuer's. More in April newsletter.

**18 Thursday: Lunch with Native Plant Enthusiasts, 11:30 at RagTag, 10 Hitt St [Just south of Broadway].** Informal exchange of ideas and 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 for various projects before sale.

## 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, John George, and Nadia Navarette-Tindall 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.**



Sand phlox blooms in native garden at Allen Hall on LU campus in **December 2012; yes really!**  
*NNT Photo*

### The Earliest Phlox to Bloom: Sand phlox or Cleft phlox (*Phlox bifida*)

*Submitted by Dr. Nadia Navarrete-Tindall, State Extension Specialist-  
 Native Plants Lincoln University Native Plants Program'*

In natural stands, sand phlox or cleft phlox blooms from March to May (Steyermark 1963) and according to Hilty (2012), it can be seen blooming from mid spring to mid summer in Illinois prairies. However, at the Native Plant Outdoor Laboratory at Lincoln University, in close vicinity of Allen Hall building, sand phlox blooms from November through April of the following year. Since it was planted in 2011, it continues forming a solid mat by spreading and reseeding. No fertilizers were applied at the time of planting and the soil where is planted is very poor. We recommend it for sites with good drainage.

In nature, it can be found in sandy areas, mesic to dry sandy prairies cliffs and limestone glades. In Missouri, sand phlox can be found in 12 counties according to the NRCS Plant Database. It has landscaping appeal but cannot compete with woody species. In nature, occasional fires will reduce competition with other vegetation. One distinctive characteristic of this species is the deeply petal-like lobes.

Hilty, J. Illinois wildflowers. Prairie Wildflowers of Illinois. *Phlox bifida*. Retrieved on February 10, 2013. <http://www.illinoiswildflowers.info/index.htm>

Steyermark, J. 1963. Flora of Missouri. The Iowa of University Press. Ames, Iowa.



... And it can bloom again near 1 April.

*NNT photo*

## Announcements:

### Membership Meeting

Our spring membership meeting is **11 March Monday, 6 PM** Unitarian Universalist Church, 2615 Shepard Blvd. Program will be given by graduate student, Rhett Hartman. He researches katydids at Tucker Prairie, the only place you will find them in pink. He will present "10 things you didn't know about katydids!"



### March Lunch at RagTag

Thursday 21 March, 11:30 am, 10 Hitt St. Schedule your shopping downtown that day and join us for lunch.



**Don't forget to keep a journal** of first leaves, first flowers, first seed and report it to Bud Burst



### Web Links Show Changes in Earth

Ann has suggested you check out the link about State of Flux, how our world is changing. Compare photos from space 30 years ago and now.

[http://climate.nasa.gov/state\\_of\\_flux](http://climate.nasa.gov/state_of_flux)

She also recommends the PBS Nova presentation on Earth From Space. In essence, satellites are supplying information on a world wide scale about different connections that sustain life. It's awesome.

<http://www.pbs.org/wgbh/nova/space/earth-from-space.html>



### 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 native issues. You won't have this source forever.

Check out, "google", the NRCS Plant Database for plant identification and habitat needs.



### Classes at LU

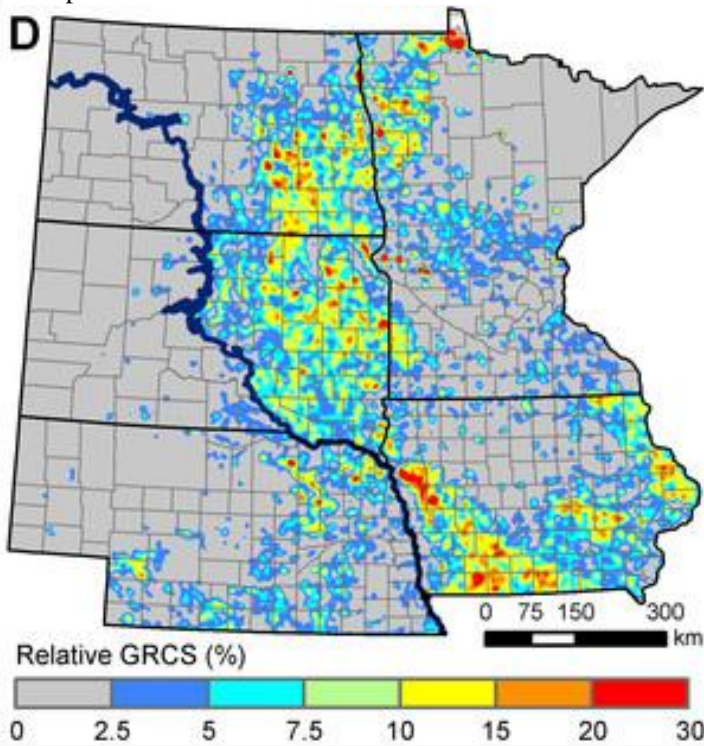
Still time to sign up for Native Plant and Gardening Classes at LU. List of times and subjects are posted in the February newsletter available on our website = [www.columbianativeplants.org](http://www.columbianativeplants.org) .



## Pictures Don't Lie: Corn and Soybeans Are Conquering U.S. Grasslands

By [DAN CHARLES](#) reprinted from the SALT: what's on your plate; NPR; February 19, 2013 10:58 AM

For years, I've been hearing stories about the changing agricultural landscape of the northern plains. Grasslands are disappearing, farmers told me. They're being replaced by fields of corn and soybeans. This week, those stories got a big dose of scientific, peer-reviewed validation. Study [see below] published in the *Proceedings of the National Academy of Sciences* shows actual pictures — derived from satellite data — of that changing landscape. The images show that farmers in the Dakotas, Minnesota, Iowa and Nebraska converted 1.3 million acres of grassland into soybean and corn production between 2006 and 2011.



Map caption: Hot spots of grassland conversion: This map shows the percentage of existing grasslands that were converted into corn or soybean fields between 2006 and 2011. *Christopher K. Wright/South Dakota State University*

"This is kind of the worst-kept secret in the Northern Plains. We just put some numbers on it," says [Christopher Wright](#), from South Dakota State University, who got funding from the National Science Foundation and the Department of Energy to take a close look at this phenomenon. Earlier studies from the [Environmental Working Group](#) and the USDA's [Economic Research Service](#) have also looked at it, each using slightly different methods.

Still, Wright's images are striking, and these changes are having profound effects on the environment of this region. For instance, it's bad news for wildlife, because corn fields are much less inviting habitat for a wide range of wild creatures, from ground-nesting birds to insects, including [bees](#). Corn and soybean fields are increasingly encroaching into the Prairie Pothole region of the Dakotas and Minnesota, the most important breeding habitat for waterfowl in North America.

In southern Iowa, Wright says, much of the land conversion is taking place on hillsides. The soil of those fields, without permanent grass to hold it in place, is now much more likely to wash into streams and ponds. And on the western edge of this

region, farmers are taking a chance on corn and soybeans in places that sometimes don't get enough rainfall for these thirsty crops.

Why? There's one very simple reason: Corn and soybean prices are high, so farmers can earn a lot of money growing those crops. Meanwhile, funding has been declining for one important alternative — the government's [Conservation Reserve Program](#), which pays farmers to protect wildlife and water quality by keeping land in grass.

Another reason, however, is getting increasing attention: crop insurance. The government subsidizes private insurance policies that cover the risks of poor harvests, or even that prices will fall. Because farmers don't pay for the full cost of this insurance, critics of crop insurance say that it encourages risky behavior: planting crops in areas that don't drain well, where rainfall is unreliable, or on hillsides where soil erosion is a problem.

Critics say that the government should drastically reduce its subsidies for such insurance. Not only is it [fiscally irresponsible](#), they say. It's encouraging farmers to [destroy the grasslands](#) of the northern plains, a priceless and increasingly scarce natural treasure.



Morris Prairie Natural Area is close to Iowa State Line. Fortunately it is protected from conversion to fuel crops.



## Milkweeds: Not Just for Monarchs

By Brianna Borders and Matthew Shepherd

This article was reprinted, from *Wild Ones Journal* Vol 26, No 1. Previously from spring 2011 issue of *Wings. Essays on Invertebrate Conservation*, published by the Xerces Society for Invertebrate Conservation, [www.xerces.org](http://www.xerces.org).

Standing in a field of milkweed plants, John Anderson watches a monarch butterfly search for a place to lay her eggs. This sight epitomizes most people's image of milkweed: food for monarch caterpillars. This, however, is no ordinary field of milkweed, and John is not most people. The co-owner of Hedgerow Farms near Winters, California, John is at the forefront of a movement to encourage the use of locally native milkweed in restoration projects. As the obligate host plants for monarch caterpillars, milkweeds play a vital role in the life cycle of the monarch butterfly

(*Danaus plexippus*). They also provide food or

BE photo

Fritillaries on purple milkweed

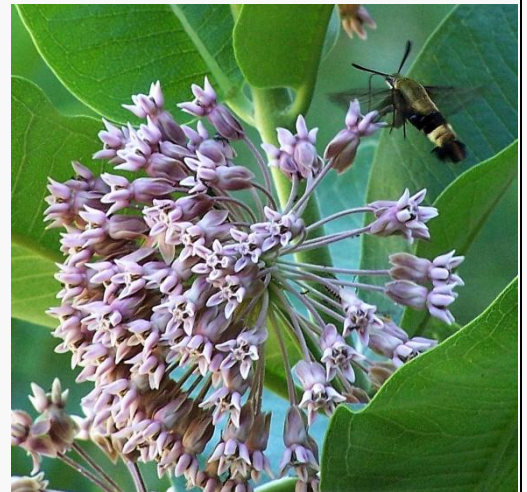
shelter for a diverse array of other insects, including nectar-seeking bees, flies, and butterflies, and such specialist herbivores as seed bugs, longhorn beetles, and leaf beetles. Native milkweeds are clearly worthy of wider adoption.

More than a hundred species of milkweeds (*Asclepias*) are native to North America and they can be found in deserts, plains, valleys, foothills, open woods, and wetlands. Milkweeds also grow in disturbed environments including agricultural areas, livestock pastures, ditches, and roadsides; indeed, in some areas, these marginal habitats are the only places where milkweed is regularly seen.

Milkweed is named for its milky latex sap, which oozes from damaged leaves and stems. This sap contains alkaloids and cardenolides, complex chemicals that make the plants toxic to animals. If eaten by livestock, milkweed typically causes depression or diarrhea, and can be fatal. Fortunately, milkweed is bitter in flavor and unpalatable, and range animals will generally avoid eating it if sufficient forage is available. Most milkweed poisoning results from hungry animals being concentrated in areas where milkweed is abundant.

The toxin-laden sap deters mammals, but insects have an amazing capacity to overcome the chemical defenses of plants, particularly those with which they have a shared evolution. In fact, a large number of insects eat milkweeds, often harvesting the toxins for use in their own defense. Of the insects that do this, monarchs are the best known. Their caterpillars sequester the toxins and store them in their tissues, giving them a bitter taste. They have boldly colorful warning 'aposematic' markings, which serve as a reminder to birds and other predators. Other milkweed-feeding insects, including milkweed bugs, milkweed longhorn beetles, and milkweed leaf beetles, sequester and store the milkweeds' toxic chemicals to aid their own defense. Like monarch caterpillars, they generally have aposematic markings.

Large milkweed bugs (*Oncopeltus* spp.) feed only on milkweeds and closely related plants. Although these bugs will feed on young leaves, flowers, and developing pods, a seed diet provides for optimal growth and reproduction. For this reason adults lay their eggs close to developing pods. Small milkweed bugs (*Lygaeus* spp.) feed on seeds as nymphs, but they can develop on plants other than milkweeds. As adults, they are not strictly herbivorous, and will scavenge insects trapped in milkweed flowers, feed on monarch butterfly pupae, and even engage in cannibalism.



Hawk moth on common milkweed

BE photo

Milkweed longhorn beetles (*Tetraopes* spp.), so-named for their prominent antennae, feed exclusively on milkweeds and close relatives. They are generally host-specific—there are thirteen species of milkweed longhorn beetles in the United States and each prefers a different species of milkweed.

The milkweed leaf beetle (*Labidomera clivicollis*) overcomes milkweed's defenses by biting through veins of the leaf. The sap drains from the outer part, and the beetle can feed in relative safety on the drained area beyond the cuts.

BE photo

The relationship between milkweeds and insects is not onesided. Milkweeds are entomophilous, meaning that they depend on insects for their pollination. **Milkweed pollen does not occur as free grains, but instead is contained in pairs of waxy sacs 'pollinia' that are located within vertical grooves on the flowers, called stigmatic slits. Each pollinium contains several hundred grains of pollen. An insect that visits a flower to obtain nectar may leave with a pair of pollinia affixed to its body. This is the result of coming into contact with a corpusculum, a pollinia-bearing gland located at the top of a stigmatic slit. (Insects may accumulate strings of corpuscula and pollinia from repeated flower visits. In Robert**



Woodson's extensive monograph on the *Asclepias* species of North America, he reported an instance of a single honey bee carrying forty-five corpuscula!) Pollinia most commonly become attached to an insect's legs but they can also be borne on the mouthparts or on any barbed or hairy surface of an insect's body. Fertilization occurs when pollinia are transferred by the insect into the stigmatic slits of another milkweed flower.

Although milkweeds have a very specialized pollination mechanism, they do not require specialist insects to activate it. Any insect that is large enough to remove and transport pollinia can be an effective pollinator, and milkweeds are pollinated by a broad range of bees, wasps, butterflies, flies, and beetles, even true bugs. A review of milkweed pollination studies completed by Jeff Ollerton and Sigrid Leide revealed that whorled milkweed (*A. verticillata*) has 126 documented pollinators. [Ed note: *A. verticillata* is common in MO.]

With their pollen enclosed within pollinia and inaccessible, milkweeds have only nectar with which to reward visitors. Even so, they attract a tremendous variety of insects with the abundant, high-quality nectar that is readily accessible in the hoods of their flowers. Many of the nectar-seeking insects inadvertently end up as pollinators, while others bring benefits in other ways. In a recent study by David James of Washington State University, milkweed—in this case, showy milkweed (*Asclepias speciosa*)—attracted the highest number of beneficial insects of any of the forty-three species of native flowers being studied.



Swallowtail and little blues on butterfly weed *BE photo*

Adult insects that visit milkweeds for nectar include ichneumon, braconid, and mymarid wasps -- all of which are parasitoids (meaning that they lay eggs on or in a host insect. Once hatched, the offspring consume the host.). The closely related ichneumon and braconid wasps typically parasitize aphids or the soft bodied larvae of such insects as butterflies, flies, and beetles, while mymarid wasps parasitize insect eggs. Syrphid flies are also attracted to milkweeds. The adults drink the nectar and their highly mobile larvae prey directly on aphids. All are natural predators of crop or garden pests. [Ed note: see photos and further information on line.]

Like many native plant species, milkweed populations are being lost at a rapid rate due to urban and suburban development and agricultural intensification. Despite their native status, unique beauty, and value to the monarch butterfly as well as to a tremendous range of pollinators and other beneficial insects, milkweeds are often perceived as crop weeds or a threat to livestock and eradicated from agricultural areas, rangelands, and roadsides.



Swamp or rose milkweed is the preferred food for monarch larvae. *BE photo*

Loss of milkweeds is believed to be one of the factors (along with disturbance to and destruction of overwintering sites) that have led to the steep decline of the western population of monarchs. The butterflies spend the winter months in tree groves along the coast of California, the only U. S. state with large numbers of overwintering monarchs. Each spring, the butterflies leave the groves in search of milkweed on which to lay their eggs. Over the summer, successive generations spread out across North America west and south of the Rocky Mountains and as far north as British Columbia, with the last generation making the journey back to the California coast. Unfortunately, western monarchs are in trouble. Data collected by volunteers show that the number of overwintering monarchs has dropped by more than 90 percent since 1997.

In 2008 the Commission for Environmental Cooperation (a treaty organization of the United States, Canada, and Mexico) published the North American Monarch Conservation Plan, addressing the steady decline of the butterflies across their native range since population monitoring first began in 1976. Because of their migratory life cycle (breeding in the United States and Canada; overwintering in California and Mexico), the most effective conservation strategies for monarchs are those that protect and restore habitat across their entire range. The plan cites broad national declines in milkweeds and recommends the planting of regionally appropriate native milkweed species to offset the loss and degradation of monarch breeding habitat.

Unfortunately, few commercial sources of native milkweed seed currently exist across the monarch's spring breeding range in the United States—California, Florida, Texas and the rest of the Southwest. In these places, either no milkweeds are planted or those that are planted are species from outside of the region. Clearly, there is a need for sources of locally native milkweed seed. In 2010, with support from the Monarch Joint Venture (MJV) and a Conservation Innovation Grant from the USDA Natural Resources Conservation Service (NRCS), the Xerces Society launched a multistate initiative to

increase the availability of native milkweed seed for monarch habitat conservation efforts. Xerces is working with the native seed industry to develop new sources of regionally appropriate native milkweed seed, and working with the NRCS to incorporate milkweeds into the agency's pollinator habitat restoration projects.

As part of this effort, John Anderson has already produced seventy pounds of seed from narrow-leaved milkweed (*A. fascicularis*), which can be used for restoration across California. We hope that this is just the first batch of milkweed seed that will be planted to help stem the downward spiral of monarch butterflies, while at the same time sustaining the richness of insects required for a healthy environment.

**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. Buying plants from our own nursery benefits our chapter educational grant fund. Buying milkweeds benefits many pollinators and Monarchs.**

## Information About Booth Sales

For those who don't know or need a reminder, we have booth sales, usually four times in a year.

The money we make goes to a couple of science teachers in area schools who submit grant proposals for good projects focused on some aspect of biology and incorporating native vegetation.

To make this money we put up a booth – a fairly attractive booth with a display board of photos from some of our activities and some very showy wildflowers. We have books for sale to aid people on their journey into our natural world. We have pamphlets which give information on subjects from ecotypes to invasive species. And we have plants – lots of plants in pots for sale.

We don't buy these plants wholesale from another nursery. We grow all of these plants from seed and root division. They are propagated and maintained at a member's home and transported to each sale – set up at each sale – and packed up to go home again.

This is a big job and with allot of hands, it could be light work.

As soon as this snow melts, some plants need to come out of winter dormancy and moved into a small greenhouse to force them to turn green before the first sale 13 April at Bradford Farm. The public is funny that way – if it is not green, they won't buy it. And the greenhouse needs some panels shifted before it will hold heat.

The day before sales, about 200 plants need to be loaded. On the day of the sale the booth needs to be set up and the plants unloaded. Some members need to be willing to learn something about the plants so they can help the uninitiated on where to plant and how to care for their plants. At the end of the day, all needs to be loaded and stored at a member's home until the next time.

We have three small tables and two display boards that need to be stored in a dry place between set-ups. All fold up flat and can be set up vertically on the back wall of a basement or garage.



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.**



Fall sale at Bradford Farm



**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)\*

\_\_\_ Student (\$11.00)

\_\_\_ Contributing (\$26.00)\* designate chapter or state

\_\_\_ State Lifetime (\$200)

\_\_\_ Chapter Lifetime (\$120 – you must also be a member of the state organization to utilize this option)

\_\_\_ Chapter only (\$6.00 – this is for members who already belong to State and another chapter)

\*Includes both Chapter (\$6) and State (\$10) dues.

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

**Send check and this form to:** Paula Peters, 2216 Grace Ellen Dr., Columbia, MO 65202

**MEMBERSHIP FORM Missouri Native Plant Society-Hawthorn Chapter**

**July 1 through June 30.**

Name \_\_\_\_\_

Address \_\_\_\_\_

Phone: Evening \_\_\_\_\_

Day or Cell \_\_\_\_\_

Email: \_\_\_\_\_

Method of receiving chapter newsletter:  
(circle preference) **Email**      **Regular mail**

**Email delivery brings you color photos and it saves NPS money. With email delivery you also receive updates and announcements between newsletters. Regular Mail includes NO interim updates or reminders without request for phone contact.**

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