

May - June 2017 NEWSLETTER OF THE MISSOURI NATIVE PLANT SOCIETY Volume 32 No.3

“... to promote the enjoyment, preservation, conservation, restoration, and study of the flora native to Missouri.”

ANNOUNCEMENTS

We are a Dues Paying Organization

If you appreciate information from our Facebook site, please consider paying for a membership. The cost is VERY LOW.

If annual renewal is becoming a nuisance, please consider a Lifetime Membership.

We value our members in the hopes that they will teach what they have been taught, and urge you to keep your membership current.

Membership renewals for the July 2017-June 2018 year are due. If you receive your newsletter by postal service delivery, please check the top line of your mailing label. If it shows the date 20170630, your dues are now payable. When renewing, please remember to include all of your contact information including email address, and your society and chapter dues preferences. Membership renewal online is also available via our website at www.monativeplants.org which offers the option of online payment via PayPal.

For those members receiving their newsletter by email without a mailing label, or for others with questions about their membership status, please contact me or your chapter representative (see back page for contact details) for information about your membership expiration date. We value our members and urge you to renew today!

2017 Field Trip Schedule

Submitted by Dana Thomas, Vice President

Please join us on our field excursions in 2017 to explore the phenomenal flora of Missouri! Mark your calendars now so you don't schedule conflicting activities later. These weekends are not to be missed. General locations are solidified, but specific field trip sites are very tentative.

Spring 2017 - West Plains, MO - June 2-4 - Possible sites include Vanderhoff Forest, Spring Creek, Carman Springs, Tingler Prairie and Noblett Lake.

Summer 2017 - Kahoka, MO area - July 7-9 - Battle of Athens State Park, Deer Ridge Conservation Area, Acola Woods, Steyermark Prairie and Goose Pond.

Fall 2017 - Ava, MO area - September 22-24 - Glade Top Trail, Taney Mountain, Ozark Underground Lab, McClurg Glade.

2017 SPRING FIELDTRIP INFORMATION

Organized by Dana Thomas

We hope you can join us on the spring field trip on **June 2-4, 2017!** The excursions, based out of West Plains, Missouri, will offer many botanically fascinating locations to explore including Noblett Lake Recreation Area, Tingler Prairie Natural Area, White Ranch Conservation Area and Barn Hollow Natural Area. Our Friday evening presentation and Saturday evening board meeting will be held in the Missouri Department of Conservation's Ozark Regional Conservation Office. Friday evening will feature a presentation by MDC Natural History Biologist, Susan Farrington, entitled "Rare Flora and Special Places in Howell County". And as luck would have it, the Ozark Heritage Festival is being held in West Plains the same weekend! So you can enjoy botany all day and music all night—the perfect weekend! Check www.oldtimemusic.org or the Ozark Heritage Festival Facebook page for more details as the date draws closer.

Lodging: We have secured a group rate for rooms at the Quality Inn in West Plains. The hotel prefers to not set aside a block of rooms, but rather give us a group rate based on the assumption that they will have plenty of rooms available. However, with the Ozark Heritage Festival occurring on the same weekend, we strongly encourage you to **please make your reservation now, to ensure room availability!** There are other hotel and camping options in the area as well. Please see detailed information below.

Changes to the schedules could occur. For the most accurate and up-to-date details, plus maps and species lists for trips, please visit [The Missouri Native Plant Society website](#) and [Facebook Page](#)

SPRING FIELDTRIP SCHEDULE

Friday, June 2nd

Visit the self-updating [Google Map Page](#) for detailed directions.

1:00-5:00 p.m. - Early Bird Field Trip Noblett Lake Recreation Area. Meet at Noblett Lake at 1:00pm

Parking area GPS: 36.90886, -92.09636 or 36°54'31.9"N 92°05'46.9"W

Directions to Noblett Lake Recreation Area:

From Willow Springs, at the junction of Highways 60/63 and 76, take Highway 76 west for about 7 miles

Turn south on Highway 181 for a little over a mile

Turn left on Highway AP for about 3 miles

Turn right on Forest Road 857 (aka FS 1080) and continue about 1 mile to turnoff for the day-use area.

7:00 p.m. – Evening Presentation at the Missouri Department of Conservation’s Ozark Regional Conservation Office. Rare Flora and Special Places in Howell County – Presented by Susan Farrington, MDC Natural History Biologist

Conservation Office Address: 551 Joe Jones Blvd, West Plains, MO 65775 (see map below) **GPS: 36.74322, -91.84604 or 36°44'35.6"N 91°50'45.7"W**

Saturday, June 3rd 8:00 a.m. – Morning Field Trip – Tingler Prairie Conservation Area and Natural Area.

Meet at the West Plains Quality Inn parking lot at 8:00am to carpool/caravan. Or meet the group at Tingler Prairie at 8:30am. **Parking area GPS for Tingler Prairie: 36.61273, -91.87623 or 36°36'45.8"N 91°52'34.4"W**

Directions to Tingler Prairie from West Plains:

From West Plains, take Highway 17 south about 6 miles

Turn right onto County Road 9100 and proceed west for 0.8 miles to County Road 8110

Turn left (south) onto County Road 8110 and proceed for 1.4 miles to the access on the left.

Please note that the **left turn onto County Road 8110 is very easy to miss. There is no road sign here, so watch your odometer! We will try to station a MONPS member at this intersection, so watch for them to locate the turnoff.

11:45 a.m. – Field Lunch – THERE ARE NO RESTAURANTS NEARBY, PLEASE PACK A FIELD LUNCH, PLENTY OF WATER, AND A BLANKET OR LAWN CHAIRS! We will drive to Vanderhoef Memorial Forest for a picnic lunch. No running water, but a vault toilet available there. Then will continue on to White Ranch Conservation Area after lunch. **Parking area GPS for Vanderhoef Forest lunch area: 36.553785, -91.889843 or 36°33'13.6"N 91°53'23.4"W**

Directions to Vanderhoef Forest lunch area from Tingler Prairie:

Head south on Co Rd 8110 for 0.5 miles

Then turn left to stay on Co Rd 8110; Continue for 1.3 miles and shortly after sharp, 90 degree curve to the right, turn left again to stay on Co Rd 8110; Continue 2.8 miles and watch for Vanderhoef Forest parking area on the left.

1:00 p.m. – Afternoon Field Trip – White Ranch Conservation Area. Meet at White Ranch after lunch, approximately 1:00pm. We will visit the fen on the south side of White Ranch C.A., approximately 3.3 miles from our lunch picnic area at Vanderhoef. We might also visit glades on the site if time allows. **GPS of fen Parking Area at White Ranch: 36.530089, -91.853355 or 36°31'48.3"N 91°51'12.1"W**

Directions to the fen at White Ranch from Vanderhoef Memorial Forest:

Head south on Co Rd 8110 for 0.3 miles

Turn left onto Co Rd 9720 and proceed for 3.0 miles

You will reach a “Y” intersection where Co Rd 9720 meets Co Rd 8390

Do NOT turn onto Co Rd 8390. Rather, watch for a small, probably unmarked, road that veers off of the intersection, to the northwest. Follow that road to the end, near an open field. Park here.

7:00 p.m. – MONPS Board Meeting at Missouri Department of Conservation’s Ozark Regional Conservation Office

Sunday, June 4th

8:00 a.m. – Morning Field Trip –Barn Hollow Natural Area. Meet at West Plains Quality Inn parking lot at 8:00 a.m. to carpool/caravan. Or meet the group at Barn Hollow at 8:45am. **Parking area GPS: 37.04835, -91.69307 or 37°02'54.1"N 91°41'35.0"W**

Directions to Barn Hollow from West Plains:

Follow US Hwy 63 N (Porter Wagner Blvd.) north out of West Plains 15.0 mi

Use the right lane to merge onto US-60 E via the ramp to Mountain View/Poplar Bluff 13.2 mi

Turn left onto N Pine Ave in Mountain /view (McDonald’s is landmark at this intersection) and continue on Pine Ave/State Hwy Y/State Rte Y 1.2 mi

Just before a large curve to the left on Hwy Y, turn right onto Co Rd 3530 1.4 mi

Turn right onto Co Rd 3940 1.2 mi

Park in main lot at Barn Hollow Natural Area

LODGING:

Make your room reservations as soon as possible! Vacancies may be scarce due to the Ozarks Heritage Festival occurring in West Plains the same weekend!

Quality Inn West Plains [\[Map\]](#) 417-257-2711 Reduced rate of \$84.99 (1 bed) or \$94.99 (2 beds) choicehotels.com

220 Jan Howard Expy, West Plains, MO 65775 **Be sure to mention that you are with the Missouri Native Plant Society!**

Other Hotel Options:

Holiday Inn West Plains [\[Map\]](#) 417-257-3000

Super 8 West Plains [\[Map\]](#) 417-256-8088

Ozark Hills Inn West Plains [\[Map\]](#) 417-257-3067

Camping:

Twin Bridges Canoe and Campground [\[Map\]](#) – Store, bathhouses, bar & café, RV sites and cabins also available. Access to North Fork River. No wifi, and may not have cell service. \$10/night/person. <http://twinbridgescanoe.com> 417-256-7507

North Fork Recreation Area on Mark Twain National Forest - Drinking water and vault toilets available. No wifi, may not have cell service. \$10/night/campsite. Map on website at: <https://www.fs.usda.gov/recarea/mtnf/recarea/?recid=21746>

*Additional hotels also available in Poplar Bluff.

Map printed here includes county road numbers. Apology: reproducing digital maps is difficult.



[Click here to view interactive map online](#)

For Shopping, Please use Amazon Smile

The easiest way to support the Missouri Native Plant Society! Please consider using Amazon.com's charitable site to do your shopping. On your first visit to AmazonSmile (smile.amazon.com), you need to select a charitable organization to receive donations from eligible purchases before you begin shopping. Choose Missouri Native Plant Society Inc. Amazon remembers your selection, and then every eligible purchase you make at smile.amazon.com will result in a donation. Every dollar you spend on the site generates a half cent for us. They gave us \$58 last year. It doesn't seem like much, but every little bit helps, **and the money comes from Amazon, not you!** It is up to you to make the donation higher next year. Thanks for thinking about us.



And more information on our website
www.monativeplants.org
www.monativeplantsociety.org

Welcome New Members!

*Is your friend's name here?
If you read us on Facebook,— is your name here?
Membership is easy and very low cost see
<http://monativeplants.org/membership/>*

Kansas City

Heather Zoellner, Prairie Village, KS
Linda Williams, Liberty
Ania Wiatr, Kansas City

St. Louis

Molly Hacker, Carbondale, IL

Hawthorn

John Mehuys, Columbia

Southwest

Osage Plains

Denise Haas, Deepwater

Ozark

Perennis

State Level Membership

Bretton Hale, Doniphan

Welcome to new members.

We all hope your membership with Mo Native Plant Society is fulfilling. When you first sign up you need to do one more thing. You need to send your request for email delivery to the Petal Pusher editor, Becky [see Masthead]. Please do not wait several months to find out your address has been lost in the transfer. If you don't get the information you need, let us know. If there is a wild area you think we should visit, let us know. This is a democratic organization; everyone is invited to all MONPS activities and all suggestions will be heard.

We hope Bretton Hale finds a home with OzarkChapter near West Plains.

Missouri Native Plant Society Awards

This was sent by email about 12 February. The following is a reminder:

Award nominations due May 15

The MONPS Awards Committee seeks nominations of people who have supported the preservation of Missouri's flora. MONPS offers five awards:

- 1) **Erna Eisendrath Memorial Education Award**, recognizing individuals who, through teaching, writing, or other activity have conveyed to others a significant appreciation and knowledge of Missouri's native flora.
- 2) **Arthur Christ Research Award**, recognizing an individual's significant contribution in furthering the knowledge of Missouri flora.
- 3) **Plant Stewardship Award**, recognizing an individual or organization for the preservation of important elements of Missouri's flora through purchase, registry, and/or management practice.
- 4) **The John E. Wylie Award**, recognizing individuals who have provided exceptional service to the Society.
- 5) **Plant Conservation Award**, recognizing an individual or organization for outstanding contributions to the conservation or preservation of native plants or plant communities in Missouri. This award differs from the Plant Stewardship Award in that it is not tied to direct acquisition or management of tracts of land, but instead may recognize various types of outstanding achievements or efforts, such as conservation planning, advocacy, or new ways of looking at old problems.
- 6) **Julian A. Steyermark Award**, the Society's highest award, given to an individual who has made outstanding contributions to any and all aspects of Missouri botany.

The deadline for nominations is May 15. Nominations should contain the full name of the nominee and the name of the person making the nomination, and they should set forth the contributions of the individual or organization that merits recognition. **Award recipients need not be members** of MONPS.

Please submit nominations to Awards Committee Chairwoman, Malissa Briggler.
Both electronic and paper copy are accepted.

Malissa Briggler
Missouri Department of Conservation
2901 W. Truman Blvd.
Jefferson City, MO 65109
Malissa.Briggler@mdc.mo.gov

Missouriensis Goes Digital

Submitted by Doug Ladd, Missouriensis Editor dladd@tnc.org

Earlier this year, the Missouri Native Plant Society board voted unanimously to convert the Society's journal, Missouriensis, to a completely electronic format.

The journal will be published and distributed electronically to members in PDF/A format, ensuring long-term archiving compatibility. The editor is exploring inclusion in multiple global on-line search indices, such as *Botanicus*, *Biodiversity Heritage Library*, and *Scopus*. Recipients will be able to easily print copies of any or all portions of each issue as desired. For priority and citation purposes, the date of electronic posting of the journal will be the date of effective publication.

Current plans are to continue publishing a single volume per year, although future options include continuous electronic publication of articles as they become available. The editorial procedure will remain substantially the same as previously – articles of relevance to Missouri flora, vegetation, and related issues are encouraged to be submitted to the editor, who will coordinate peer reviews and work with the authors on any required revisions and edits.

The transition will require some formatting changes to facilitate clarity and access in an electronic format, and the “Instructions to Authors” section that will appear in the coming volume will also be revised. The next volume will also include an enhanced book review section, and the establishment of a recent and noteworthy collections feature that will allow rapid and efficient dissemination of new discoveries without requiring a full article.

These changes will make the Society's journal more relevant, accessible, and attractive to both contributors and readers. Stay tuned for the next issue in the coming months, [and please send me your comments and suggestions](#). Doug Ladd, Missouriensis Editor dladd@tnc.org

Petal Pusher Editor's Note: Please be thoughtful of your volunteer editor and follow [submission guidelines](#) posted in Jan, Mar, May 2013. PLEASE ADD: **Change plain text to *Italics*** when using scientific nomenclature for any biological being. Editor does not appreciate spending hours to make format changes [font, size, spacing, style, page layout]. Editor thanks all who submit articles and reports for publication in MONPS Petal Pusher. **Special thanks to those who submit articles and reports early and in requested format.** This edition those people were Dana, Casey, Rex, Liz, Michelle, Malissa, Ann. This kind of cooperation is a team effort to make our newsletter readable and interesting.

Nominations for MONPS Board Officers

Submitted by the MONPS Board

We are pleased to announce that our current slate of officers have agreed to serve for another two years.

The officers are:

President: John Oliver

Vice President: Dana Thomas

Secretary: Malissa Briggler

Treasurer: Bob Siemer

In addition, two positions for at large **Board Members** ('17-'20) need to be filled:

These positions are currently filled by: **Mike Skinner** ('16-'17) who filled in for Robin Kennedy last year and **Justin Thomas** ('14-'17) Both have agreed to serve for another three years

If there are any nominations for these offices from the general membership, please submit them to Martha Hill at MarthaJHill@charter.net as soon as you decide. With no further nominations, these named officers will be installed at the next annual meeting held at the meeting held in Kahoka 7-9 July '17.

Go my Sons, burn your books. Buy yourself stout shoes.
Get away to the mountains, the valleys, the shores of the seas,
the deserts, and the deepest recesses of the Earth. In this way
and no other will you find true knowledge of things and their
properties.

Peter Severinus, 16th. century Dane, educator



Photos to Illustrate Osage Plains and Ozark Reports

Anemonella thalictroides

Rue anemone

CBurks



Erythronium albidum trout lily B. Erickson



Aquilegia canadensis columbine B. Erickson



Mertensia virginica

Bluebells C. Burks



Uvularia grandiflora bellwort B. Erickson





Chapter

St Louis *Submitted by Rex Hill, Chapter Representative*

At our February meeting, Award winning photographer Casey Galvin gave a workshop on botanical macro photography equipment and technique. On the equipment side, Casey emphasized the importance of a good, sturdy tripod and discussed macro lenses and the relationship between focal length and working distance to the subject. The workshop was very practical and involved audience participation exercises as Casey discussed and demonstrated the trade-off between aperture and depth of field, different lighting techniques using natural light and flash, and suggestions for effective image composition.

Casey is well known for his marathon overnight drives to places where he might have the chance to photograph a rare or unusual flowering plant. He recently returned from a camping trip at Anza Borrego State Park in southern California where there has been a special bloom due to the unusually heavy rains in that part of the country. My thanks to Rick Gray, our chapter president, for his feedback on Casey's presentation, as Martha and I were in Anza Borrego at the time of the February meeting.

In March, Steve Turner made a presentation on the plants of Little Lost Creek Conservation Area in Warren County. Steve has made numerous visits to the area over the past several years and at various times of the year. He emphasized the differences in habitat from upland, dryer areas to wetter bottomland areas along the creek watercourses in the valleys of the property. His many photographs of the flowering plants he observed supported his premise of the botanical richness of the area.

Steve is well known for his photography on MONPS trips and is an active participant on the Monday field trips sponsored by the Webster Groves Nature Study Society. Many of his photographs appear for specimens stored in TROPICOS, the Missouri Botanical Garden plant database. It was refreshing to see the area through Steve's eyes, as many times a single visit to some of MDC's conservation areas leaves one with a disappointing feeling that restoration of a heavily used area has not yielded much but another hunting area to be avoided during deer and turkey seasons. Steve and Rick Gray have planned a field trip to the area for our chapter on April 15.



Perennis

Submitted by Andrew Braun, Chapter Representative

No report at this time.



Kansas City *Submitted by John Richter, KC Chapter Pres*

No Report at this time.



Reports

Osage Plains

Submitted by Casey Burks, Chapter Representative

February 27th 6:30pm The Osage Plains members, along with several guests, met at the Missouri Department of Conservation to hear President Elizabeth Middleton's excellent presentation on edible and medicinal plants. Elizabeth had samples of prairie plants that we could study along with her powerpoint pictures. Along with her extensive plant knowledge, Elizabeth referenced her information from both books of Kelly Kindscher Edible Wild Plants of the Prairie and Medicinal Wild Plants of the Prairie. Lively discussion followed including sharing information about Amish remedies. One of our members related that a neighbor Amish boy severely burned his feet on campfire coals and was treated at home with burdock leaf dressings. He said it was amazing how quickly the boy's feet healed.

On a personal note, shortly after this meeting I burned my hand on a panhandle I'd just taken out of a 400deg oven. I grabbed some cold aloe vera juice from the fridge and soaked my hand in it until the pain subsided then, still coated with aloe juice, wrapped it in a dried burdock leaf from my collection. My husband gauze wrapped the leaf on my hand and twenty four hours later he unwrapped it. My hand was healed; totally useable without any pain. The only blister was a small one by my ringband that had held the heat! The curative power of plants continues to amaze me.

March 27th 3:00pm With the unusual warm days in March, in place of our meeting, midafternoon we caravanned to Peterman Woods. This is one of our favorite places to visit to see Spring Ephemerals and refresh memories on the difference between rue anemone and false rue anemone. Downhill and close to the creek, one of the star attractions, the beautiful bluebells. were blooming. Trout lilies weren't quite ready but there were lots of bloodroot flowers on the hillside. There was a witch hazel bush I'd never seen before. Another first, I ate violet blooms and leaves and thought they were quite sweet. On the side of the road, a purple patch of lovely rose verbena glowed like a jewel. We were glad our three new members were able to enjoy seeing this pristine private property.



Empire

Steve Buback Chapter Representative

No report at this time.



Ozark Submitted by Liz Olson Chapter Representative.

On Feb 21, Liz Olson gave an overview of the MOFEP project. MOFEP stands for the Missouri Ozark Forest Ecosystem Project; it is administered by the Missouri Department of Conservation. MOFEP is a long term, landscape scale experiment to study the effects of three forest management regimes on various parts of the ecosystem. The study sites comprise about 9,000 acres of forest and woodland in Shannon, Carter, and Reynolds counties in southeastern Missouri. Ground flora, trees, birds, insects, amphibians, reptiles, small mammals, lichens, and soils are just a few of the ecosystem elements studied at MOFEP. The study began in 1990 and is planned to continue for at least 100 years. Over 500 plant species have been found on the study plots, and the ground flora community response to forest management is a key component of MOFEP.

On March 21, our chapter president Susan Farrington gave a presentation about spring wildflowers, how to identify them, and where to find and enjoy them. She described 42 lovely species that flower in the spring in the Ozarks. Some highlights were:

- Virginia bluebells (*Mertensia virginica*) – the flower changes color from a purple-ish color of the bud to a light blue when in bloom.
- False rue anemone (*Isopyrum biternatum*) and
- True rue anemone (*Thalictrum thalictroides*) – the flowers look very similar, but one can tell these two species apart by the leaves.
- Toothwort (*Cardamine concatenata*) – this rhizomes are edible and taste like horseradish.
- Bellwort (*Uvularia grandiflora*) – when it flowers in the spring, the leaves are not fully expanded; when they do expand later you can see that the stem pierces through the leaves.
- Ozark trillium (*Trillium pusillum* var. *ozarkanum*) – the flowers change color as they age – from a pure white to a vibrant fuchsia.
- Trout lilies (*Erythronium* spp.) – there are four species that grow in MO; three grow in mesic forests and one grows in prairie and glade habitats.
- Columbine (*Aquilegia canadensis*), fire pink (*Silene virginica*), and red buckeye (*Aesculus pavia*) – the beautiful red flowers are hummingbird pollinated.

False Solomon's seal (*Maianthemum racemosum*) and true Solomon's seal (*Polygonatum biflorum* var. *commutatum*) – the leaves look very similar, but they flower in different positions on the plant. False Solomon's seal flowers at the end of the stem, while true Solomon's seal flowers along the stem at the leaf axils

Hawthorn Submitted by Becky Erickson

At our January meeting we asked for volunteers to fill officers' positions. Gail Plemmons agreed to be Vice Pres; John George asked to be Chapter Rep; Paula Peters is back to being treasurer and membership chair. Dates for plant sales were confirmed. Several possibilities for hikes were discussed.

Becky Erickson held a propagation workshop at the MU Extension building at Midway on 28 Jan. 41 People attended from MMN, MONPS, WO and MG affiliations.

The program for our meeting 13 March was not only informative but very entertaining. Dr. Annett Sanders has several degrees in botany, education, and business. She told us the story of her life by engaging us with many different hats as props. On the subject of nature photography, she told us to never go outside without a camera. Get down on all fours and LOOK. Go out in rain and snow - all weather. LEARN about your equipment: try everything; make mistakes; click lots of frames. Most of them can be deleted. Some will be masterpieces.

Our Thursday Lunch on 16 March was attended by 11 members. A lively and meaty discussion ensued with John Mehuys of Columbia Public Works and Adam from Columbia Urban Ag. John wanted some history of our work around town and some advice on creating larger native plantings. Adam wanted our input on the city-sponsored permanent community garden and farmers' market structure. Both of these projects look like we can make some long-term influence on Columbia.



Southwest

Submitted by Michelle Bowe, Chapter Representative.

At the February meeting, Dr. Kissoon-Charles (wetland ecologist) gave an excellent talk to a standing-room-only crowd that included our regular members plus a group from Drury University. While Dr. Kissoon-Charles' seminar focused on her research in aquatic ecology, we found the effect of aquatic plant roots on the soil particularly fascinating. Good aquatic plants can change soil!! Perpetually soggy dirt is anaerobic. The O in H₂O is quickly used leaving H₂ to make many kinds of acids. So without O₂, nothing breaks down or decomposes. Good wetland plants must have a way of introducing O₂ under water and into anaerobic soil to make it aerobic enough to start decomposition, make nutrients available, and aerate the water. This oxygen also oxidizes minerals, especially iron, to make clay turn red and occasionally give an orange sheen to swampy water.

We also participated in the *Springfield Conservation Native Plant Sale & Seminar* and will have a presence for the *Springfield March for Science* on April 22. Michelle Bowe is leading a class field trip that day (marching into the field for science?), but Mike Skinner has volunteered to host a table.



LINK IN!

Share with friends and neighbors

PLEASE OFFER YOUR SUGGESTIONS!!

LINK IN on NATIVARS

Nativars, cultivars of native plants, are becoming increasingly popular and are marketed by nurseries around the country. It is important to know more about them when planning your landscaping

If you are new to gardening with natives and flummoxed by all the choices on the market, these links might help to steer you back to the real thing for A LOT more reasons than just decorations. It is bad enough to give our necessary wildlife fractured habitats. Let's not offer them fake food. We can't live off Twinkies and Cheez-Whiz and neither can they. If you want to go to the trouble to install or enlarge your native flower area, PLEASE get plants and seed derived from wild stock. If in doubt – ASK!

Buy from a GrowNative! Member [<http://grownative.org/resource-guide>] Usually the smaller operations have local source plants and seeds. Or from your chapter members who know how to propagate wild plants.

This link is a detailed proposal for Mt. Cuba [a botanical garden in DE [<http://mtcubacenter.org/>] by Dr. Deborah Delaney, Asst Prof; U of Delaware; Entomology and Wildlife Ecol Dept. Newark, DE This paper proves thru analysis from MU that nutrition for bees is far superior in wild native flowers than the meager fair they get from nativars.

<https://d2vsp3qmody48p.cloudfront.net/wp-content/uploads/sites/5/2014/06/Pages-Mt-Cuba-Delaney.pdf> .

Read about Ecotype and Nativar guidelines

<http://www.wildones.org/about-us-2/wild-ones-position-statements/>

See also <http://www.ecobeneficial.com/2015/10/the-nativar-conundrum-new-research-on-natives-vs-native-cultivars-with-dr-doug-tallamy/>

These resources are from my blog post

<http://www.accentnatural.com/are-cultivars-pollinator-friendly/> -- Donna

Missouri Native Plant Society: our own website

<http://monativeplants.org/>

MONPS Facebook link

<https://www.facebook.com/groups/MONPS/>

Linda Hezel strongly suggests reading the article on page 4. This explains how virgin land is tilled to make organic farms when they should be preserved.

<http://www.cornucopia.org/wp-content/uploads/2016/06/Summer2016-Cultivator-Web.pdf>

Paula Peters found a great website www.gardenswithwings.com . As she says, "It has a place to enter your zip-code to get a [list of food plants to plant for the butterflies in your area](#), and it has lots of other handy information too. "This is just in time for Spring; they need food all summer and fall, too—enjoy!"

WREN SONG <http://nativeplantwildlifegarden.com/> Blog on native gardens and ecology

Birding Trails Website from Becky Erickson

Just because it says "Birding Trail" doesn't mean that's all it is. Just because you go into the fields to find birds, doesn't mean you can't assess the landscape and practice some plant identification; or vice versa. There is a lot of excellent information on this site. Use it; share it; put it on your Facebook page. Open it up; talk it up.

<http://greatmissouribirdingtrail.com/Wordpress/birding-trails/>

Monarch Larva Monitoring Project video

www.mlmp.org

Missourians for Monarchs

<http://missouriansformonarchs.blogspot.com/>

Xerces Society: nfp-ngo for invertebrate conservation

<http://www.xerces.org/>

<http://www.pollinator.org/>

Backyard biodiversity to replace wild areas by Tallamy

<http://www.americanforests.org/magazine/article/backyard-biodiversity/>

Linda Hezel's organic farm emphasizing biodiversity to maximize production.

<http://www.prairiebirthdayfarm.com/learning/resources.html>

Naturalist's blog on the wild lands of southern MO

<http://allisonjvaughn.blogspot.com/>

Naturalist's blog on a native garden in the suburbs

<http://nadiasyard.com/>

WildOnes! Website full of articles on native habitat restoration

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

Article on the effects of neonics on insects in Sept 2015 Wild Ones! Journal

<http://wildones.org/Neonics.pdf>

BE A CITIZEN SCIENTIST!!

Many, many retired and people with interest in nature supply data to several organizations needing data from across the country and around the world. I won't supply links here because it is so easy to Google names.

Bud Burst is a database of DATES of perennial emergence, buds, flowers, seedset.

Cornell Ornithology Lab gives several dates around the calendar when you can submit bird counts, just in your back yard or on vacation trips.

Monarch Watch and Missourians for Monarchs both need data points for wild and planted milkweeds, prairie plantings and wild nectar areas; then they need monarch sightings in all stages of development.

Chapter Calendars

Hawthorn from *Becky Erickson*

Chapter meetings held on odd-numbered months on the second Monday at Unitarian Church, 2615 Shepard Blvd., Columbia. Third Thursday lunch at Uprise Bakery [RagTag] 10 Hitt St, Columbia continues to be well attended by members for informal discussions about native plants and environmental issues. See www.columbianativeplants.org for postings of newsletters and activity details. For folks interested in hiking and wildflower sightings around the state, see chapter newsletter on the website for details. Otherwise you are encouraged to participate in outings with other MONPS chapters and MPF. We will email chapter members interested in outings.

8 Apr Sat 10 to 2: Bradford Farm Native Plant Sale. Set up time 9am. Connect with coordinator well in advance.

20 Apr Thurs 11:30 am: Lunch at Uprise Bakery. 10 Hitt St., just south of Broadway. This lunch is just before our big booth at Earth Day. If you plan to help, please attend lunch.

23 Apr Sun Earth Day Festival. Set up 9am. Pack up 7 pm. Volunteers please commit early.

6 May Sat 10 to 2, BassPro Plant Sale. Set up time 9am. Connect with coordinator well in advance.

8 May Mon 7pm Meeting at UU Church.

18 May Thurs 11:30 am: Lunch at Uprise Bakery. 10 Hitt St., just south of Broadway.

15 June Thurs 11:30 am: Lunch at Uprise Bakery. 10 Hitt St., just south of Broadway.

Kansas City from *John C. Richter, Chapter President.*

Meetings are usually held at MDC Discovery Center 7 pm, 1st Tuesday of odd-numbered months. No meeting in July. <https://nature.mdc.mo.gov/discover-nature/places/gorman-anita-b-conservation-discovery-center> : mid-town on Troost between Cleaver and Volker Blvds.

Kansas City Chapter 2017 Calendar

Submitted by John C. Richter, MONPS KC Chapter Pres

For questions about upcoming field trips contact the field trip leader, otherwise contact John Richter via e-mail:

RichterJC@bv.com, or cell phone 816-519-8201. Please RSVP with the field trip leader or John Richter for all field trips. We use RSVP information to plan car pool logistics and to determine if a field trip will have any attendance. This is important for making decisions based on severe weather, etc. Our events are open to all who would like to participate, members and non-members alike; please bring a friend.

22 Apr – Trice-Dedman Memorial Woods, Clinton County, Missouri. This area, owned by the Nature Conservancy, represents one of the last remaining oak/hickory woodlands with old growth white oaks. Lots of spring wildflowers. Please RSVP with John Richter RichterJC@bv.com, cell phone 816-519-8201. We plan to car pool to this site; car pool information can be worked out with RSVP. Plan to meet at the car pool location at 9:00 am Saturday morning. [next column >]

Upcoming Events

[KC Chapter cont.]

2 May 7:00 PM, MDC Discovery Center: Chapter Meeting - Meeting activity TBD.

May ? – Powell Gardens Native Plant Sale: Fri & Sat.

We need volunteers to staff a sale booth Fri 3:30 pm to 7:00 pm, and Sat 10:00 to 5:00. This event comprises our annual fundraiser activity and puts our Chapter above all others in annual income, which can be used at our discretion to fund appropriate conservation efforts. Located at Powell Gardens, the KC MONPS Chapter makes a negotiated percent from the sale of plant material from the Missouri Wildflower Nursery, owned by Mervin Wallace. We can always use volunteers to help us sell plants - Fri evening and all day Sat. For information contact John Richter RichterJC@bv.com, cell phone 816-519-8201.

17 June – Monkey Mountain Conservation Area, Holt County, Missouri. This area may represent some moderate to steep woodlands and may be strenuous. This site was chosen as we can walk anywhere we want to and do some real exploring. Bring lots of food and water. We plan to car pool to this site; car pool information can be worked out with RSVP. Plan to meet at the car pool location at 8:00 am Saturday morning.

July or August: Canoeing anyone? Location TBD. If interested please contact John Richter RichterJC@bv.com, cell phone 816-519-8201

21 Aug - Total Solar Eclipse, Ray County, Missouri. If you are interested in viewing this from the epicenter of the totality path, John Richter owns two parcels of property, and the centerline of the eclipse path runs through each of them. For information contact John Richter RichterJC@bv.com, cell phone 816-519-8201.

5 Sept 7:00 PM, MDC Discovery Center: Chapter Meeting - Meeting activity TBD.

7 Oct – Maple Woods woodland walk. Easy walking on a path, enjoy the fall colors and late blooming flowers. If interested please RSVP with Hilary Haley hhaley@tnc.org.

7 Nov 7:00 PM, MDC Discovery Center: Chapter Meeting - Meeting activity TBD.

Curator's Corner

Michelle is very busy with her Plant ID classes and field trips.

Her column will be back this summer.



Southwest from Michelle Bowe

Meetings will be at different locations in Spgfld, 4th

Tuesday, 6pm. Refer to each date for location In case of bad weather, watch Facebook for cancellations or call ahead of time and we'll call back with more information. Michelle Bowe Mbowe@MissouriState.edu 417-836-6189

Sat 22 April 9am: Field trip to the Drury-Mincy Conservation Area (with the MSU Plant Taxonomy class). We will meet on the Missouri State University Campus at 9am and carpool. Contact Michelle Bowe for more information.

Tues 25 April 6pm: Meeting at the Library Center (on S. Campbell St, Springfield MO, Meeting Room A. Justin Thomas will be speaking about **The Institute of Botanical Training**, how it was established, its goals, how we benefit, and possibly the new non-profit organization NatureCITE (the Center for Integrative Taxonomy and Ecology). We will also discuss and plan field trips!

Sat 29 April 9am: Field trip to the Drury Mincy Conservation Area (with the MSU Plant Taxonomy class). We will meet on the Missouri State University Campus at 9am and carpool. Contact Michelle Bowe for more information.



Empire Prairie from Steve Buback:

Nothing submitted at this time.



Perennis from Andrew Braun

Watch for announcements by e-mail, Facebook, and the MONPS website.- www.monativeplantsociety.org

Be sure your email is registered with Andrew, your Chapter Rep, and with Becky = PP editor, and with Ann Early = membership Chair.

Field trips and other events for the Perennis chapter are currently being planned. Watch for announcements by e-mail, the MONPS website, and the MONPS Facebook page. As always, ideas are welcome! Contact Andrew for updates on activities apbraun1s@gmail.com



Ozark from Liz Olson

The Ozark Chapter meets at 6:30 pm on the third Tuesday of each month MDC, Ozark Regional Office, 551 Joe Jones Blvd, West Plains, MO 65775.

No meetings Dec and Jan. For more information, contact chapter president Susan Farrington at 417-255- 9561. We take suggestions for speakers at our meetings.

18 April – program TBD

16 May – field trip, destination TBD

June, July, and Aug – Plant ID nights



St Louis from Rex Hill

Chapter meetings are held on the fourth Wednesday of the month at the Sunset Hills Community Center, 3939 South Lindbergh Blvd., Sunset Hills, MO. Google Map: <http://goo.gl/maps/K3PR>

All Friends and newcomers are welcome at meetings.

Look to the Saint Louis Chapter page on the MONPS website at for any announcements.

<http://monativeplants.org/chapters/saint-louis/>

26 Apr 7:30 PM – Dr. Kyra Krakos and two students, Adam Rork and Adam Wilson, of Maryville U will be talking about **Floral Chemistry in Manfreda** and a **GIS Study of Plant Pollinators** in the Greater Saint Louis Region.

12 & 13 May, Fri & Sat, The annual spring plant sale at Shaw Nature Reserve. The St. Louis chapter will be setting up our booth on Friday about 3:00 PM and again Saturday about 8:00 AM. If you can help with manning the booth, contact Rex Hill at RexLHill@charter.net. The event runs from 4:00 PM until 7:30 PM on Friday and from 9:00 AM until 4:00 PM on Saturday.

24 May 7:30 PM – Dr. Christy Edwards, Assistant Scientist, Conservations Genetics Center for Conservation and Sustainable Development, Missouri Botanical Garden and Adjunct professor in Biology at Washington University; Topic: Conservation genetic analysis of two threatened Missouri species (*Geocarpon minimum*, *Physaria filiformis*)

28 June 6:00 PM – This is the month for our annual evening wildflower walk, to be followed by dinner for those that wish to retire to a local restaurant after the walk. Watch Wayne Clark's emails and otherwise keep your ear to the ground for the location of this walk.



Osage Plains from Casey Burks

This year we will be changing our meeting location to the MDC building 2010 South Second St. in Clinton

Regularly scheduled meetings are held the 4th Monday of the month at 6:30 pm. However, no meetings are held during the months of August, December or January. Activities are

open to the public and our purpose is to enjoy learning about and sharing information about native plants. Current information available from President Elizabeth Middleton Elizabeth.Middleton@MDC.gov or Chapter Representative Casey Burks mobugwoman@gmail.com.

Field Trip coordinators are

Bernie Henehan berniehenehan@yahoo.com

and Dan Henehan danhenehan@embarqmail.com

Event Schedule

24 April meet at the MDC building 6:30 pm. Program and field trips TBA.

22 May meet at the MDC building 6:30 pm Program and field trips TBA

24 June meet at the MDC building 6:30 pm Program and field trips TBA

PYRO PARTY: Fire Workshop 4 & 5 Feb Boone and Callaway Counties.

Intro by Becky: Ann and I had discussed burning 'soon' for a couple of weeks. Weather had to be low humidity and a significant breeze to burn the draw in the woods east of my house. Saturday was a tossup. At 10:30 we decided to go with my woods and I started calling volunteers. Out of 8, Gail and Janice could drop their casual unplanned weekend activities for fireline duty and be on site in 3 hours.

The woods at my house burned slower than we had hoped. Ann had to run new torch lines across the area so we wouldn't be there waiting until dark for it to finish burning. But 2.5 acres was done in 2.5 hours without any uncontrollable mishaps. One snag started to torch under the bark; one mature cedar bark started to flair. But someone was on the spot to stop any unwanted spread.



M. Rues photo

Sunday morning we had the same conversation: is it a go? Or not? I sent Ann the list of phone numbers and she enticed Frances, Louise, and Janice, to try their hands at this for the first time; and me, as one more experienced hand. Sunday noon at Ann's humidity was about 50% under a cloudless sky. Breeze was low to mild, but squally. In just a few minutes it shifted from NE to SW [Murphy's Law]. Fortunately the field was only 2 acres so the mis-judgment was quickly corrected and all went very fast, very hot, and very complete. Very impressive! *Drone photo by Mike Bowden*



Since the big field went so fast, we burned another small triangle partly in a ditch which proved to be a bit trickier, but finished well.

Ann treated us to home-made chili = yum! and a tablespoon of elderberry flower cordial.

Ann Wakeman: It was a good weekend to conduct prescribed burns. One woodland fire at Becky's and one grassland fire at Ann's. Factors supporting these were: well prepared firebreak lines prior to the day of the burn; wildland fire equipment of flappers, rakes, water tanks, and a torch; knowledge of appropriate weather conditions and most importantly, help from wonderful friends assisting with their flappers and water packs to keep that fire within bounds.

Big thank you to everyone who went the extra mile to help with these burns.

Louise Flenner: The equipment is the same that Ann describes as wild land fire equipment: the diesel/kerosene torch that drops fire balls along the fire line; the two large metal backpacks that hold water and squirt a long distance without the need for a hose hooked up to a faucet. I saw how you could water down small shrubs and trees to keep them from burning. I learned techniques with flappers that smother fire and can be dragged along a low lying fire to keep it from escaping. If you are new to this it is best to get you first few burns with some experienced people. You don't know how a fire ball dropping dragon works, or even how to use a flapper, or how to pump the water from the canisters.

Frances Albano: This was my first experience with a fire in an area larger than my burning pile at home. It gave me the chance to see the type of equipment used to light & control the fire & a little bit of practice. At one point, the fire on the larger area was quite impressive; complete with small vortexes spinning in the center. Thanks to Ann & Becky for the opportunity to participate.

Gail Raskin: I went to my first burn Saturday at Becky Erickson's woodland area. It was great fun. The weather was good, not too cold and the wind was perfect for moving the contained fire. Becky had already raked and blown a fire line around the perimeter of the burn area. I learned about fire equipment, weather conditions, safe cotton clothing to protect from fire and smoke and how to monitor the burn so it didn't jump outside the raked line. It was also awesome to watch Ann Wakeman light areas with the torch. Added bonus was a tour of Becky's native plant nursery, a follow up to the plant propagation class she taught last week to the MMN and NPS joint class. I met some wonderful folks and have my first burn under my belt. Thanks to all.

Janice Albers: During my conversation with Mike, he said that the burn through your woods used to be an annual occurrence in the Ozarks. Someone would set it, or teenagers would get an itch for arson, and as it moved through the woods people would just be aware and keep it away from buildings since it moved slowly and flames are not very tall. I asked why, and he said that the locals thought it kept the tick numbers down, and that it made for a cleaner forest.

My first impression about the prairie burn is the quickness at which things happen. You definitely need to be prepared with defined and pre-cleaned edges, as Ann

Dormant Orchids Need Fungi to Rise Again

Posted by Kristen Minogue on 6 Jan 2017.

<http://sercblog.si.edu/?p=7816>

Reprinted as a link on Smithsonian ENews 1 Mar 17

<<< Small-whorled pogonia orchid, *Isotria medeoloides*. (Photo: Melissa McCormick/SERC)



If you are a plant, when life aboveground turns harsh, you have few options. Some orchids respond by going dormant, spending years to decades underground before reemerging aboveground. But an army of the right fungi may help jolt them out of dormancy, ecologists from the [Smithsonian Environmental Research Center \(SERC\)](#) discovered in a [new study](#) published in the [American Journal of Botany](#) Friday.

Smithsonian scientists have been working to understand the ecology of one particular orchid – including why it enters and exits dormancy. The [small-whorled pogonia](#) is widely regarded as the rarest orchid east of the Mississippi. Federally listed as threatened, the orchid has vanished from Maryland and is endangered in 16 other states.

Melissa McCormick kneels in a Virginia forest with small-whorled pogonias.

(Photo: Dennis

Whigham/SERC) >>>

Endangered Orchids Underground

At first glance, the **small-whorled pogonia** is a strange poster child for orchid conservation. It's a tiny, unassuming plant with a pale green flower above a whorl of five leaves, or occasionally four or six. "The plant is not very fancy at all," said Rachel Rock-Blake, who worked with the SERC team as part of her master's thesis at the [University of Connecticut](#). But, she said, its sensitivity makes it an indicator for the health of the entire forest. "You have this plant that is so in tune with the health of the soil and all of the organisms that live within the soil. If that plant is failing, it means that there are many plants and organisms in that ecosystem that are probably also in danger."



[PYRO PARTY cont] and Mike had worked on. The other surprising thing is the roar and popping of the fire. It is a unique experience.

My thoughts also queried how this affected the wildlife living in the grass I've always heard that the rodents/reptiles would just find a hole to go into until the worst is over. We saw at least 4 rabbits scurry for different cover even after the fire was finished. I mentioned this to my fellow mammologist colleague, Nick Green, who did his PhD work on rodents in Texas prairies and he did not think that was entirely correct. Most mice and rodents that live in grasslands do not burrow, they make nests above ground in the grasses. Currently, there is no good research that determines exactly what happens to the small rodents. The best guess is that they do not make it. But because rodent populations are not limited, the area gets repopulated very soon after the fire. Hopefully, the quail and grassland sparrows were smart enough to evacuate.

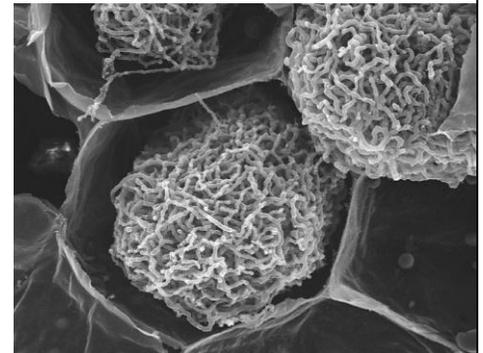


Mouse house completely un-charred inside; BE photo

~~~~~  
[Orchids and fungi cont]

Many small-whorled pogonia populations have plants that go dormant and persist underground, perhaps as a way to survive drought, deer or other dangers. While underground, they can secure enough resources to survive and emerge aboveground, most likely because orchids have an underground source of energy: fungi.

Fungi grow in and on the roots of almost all terrestrial plants, helping them absorb more water and nutrients in exchange for carbohydrates. But when fungi and orchids interact, only the orchid seems to benefit. In essence, orchids become parasites, digesting fungi as a source of nutrients. Small-whorled pogonias, like all other orchids, depend on these fungi, especially during periods of dormancy when they don't have any leaves to capture sunlight and provide carbon to the plants.



The SERC team and Rock-Blake made the first discovery of a possible link between the amount of certain soil fungi and orchid dormancy. They wanted to know whether the amount of fungi in the soil would not only help orchids survive *during* dormancy, but also help snap them out of it.



## Please Build Bee Habitat.

Wedge Watkins of the Columbia FWS office sent this link to me. Wedge has been part of the prairie corridor bee survey which has helped to discover the rapid decline in all bee populations. He wants to promote the use of bee habitat. Admittedly, the document is written for western states, but all the practices apply here. Please consider planting a broad diversity of native flowers, leaving messy, unsterile places on your property, and include some artificial enhancements so bees can find safe habitat. It is no different from putting up bird houses and feeders.

<http://extension.usu.edu/files/publications/factsheet/ENT-175-15.pdf>

### Damian Vraniak (Waubishmaa'ingan from Wisakoda – land of half-burned trees)

North American Prairie Conference Madison WI. Aug 2004

**See with the heart;**

**feel what you cannot see;**

**let the wind clear your ears and**

**the rain clear your eyes.**

- ◆ **Parts create a structure; save virgin land and genetic diversity.**
- ◆ **People are not happy.**
- ◆ **We have lost the balance from the land because native land is too fragmented. Broken land = broken human family and community.**
- ◆ **We are so busy we do not notice the broken land, family, and community. Slow life's pace to see, hear, feel the changes.**
- ◆ **Do what is possible to connect with the land; repair and save it.**



## Get Covered for Tick Season With These Eight Expert Tips

The tick forecast looks grim for this year. Before you hit the great outdoors, follow our advice to keep the eight-legged critters at bay. From National Audubon newsletter

[http://www.audubon.org/news/get-covered-tick-season-these-eight-expert-tips?ms=digital-eng-email-ea-newsletter-20170317\\_march\\_wingspan&utm\\_source=ea&utm\\_medium=email&utm\\_campaign=20170317\\_march\\_wingspan](http://www.audubon.org/news/get-covered-tick-season-these-eight-expert-tips?ms=digital-eng-email-ea-newsletter-20170317_march_wingspan&utm_source=ea&utm_medium=email&utm_campaign=20170317_march_wingspan)

**[By Meaghan Lee Callaghan](#)**

March 10, 2017

For many of us in North America, outdoor activities like birding or hiking attract a little arachnid that can be more than an inconvenience: the tick. These pests survive by sucking the blood of deer and other mammals, including humans when they have the opportunity.

If you're afraid of ticks, we have some bad news for you: This year, [scientists forecast](#) a high number of [Lyme disease](#) cases, an illness spread by deer tick (a.k.a. blacklegged tick) saliva. You can blame the coming Lyme plague on growing populations of white-footed mice, a common host for young deer ticks. These mice often carry the bacteria that causes Lyme disease, and then pass it onto deer ticks, which then go on to infect humans. Because of favorable conditions,

[Orchids and fungi cont] "If you have something like a fungus that's a nutrient source for a plant, it seems logical that the more of the fungus there is, the better the plant should grow," said Melissa McCormick, lead author and SERC molecular ecologist. "But nobody's ever shown that before."

### Hunting for Fungi

<<< **An odd couple:** When fungi encounter an orchid root, the fungus roots form coiled balls called pelotons, like these, which the orchid digests for nutrients. (Photo:Liz Kabanoff, University of Western Sydney)

The ecologists looked at small-whorled pogonias in three locations: two in Virginia and one in New Hampshire – places where scientists had monitored populations for years, so they knew which orchids had gone dormant and for how long. The team collected soil from areas next to orchids that had emerged aboveground or were dormant, and analyzed them in the lab to measure how many fungi were present. They were searching specifically for one group of fungi—Russulaceae, a group of fungi the small-whorled pogonia uses.

The idea was simple enough: Orchids aboveground should have more fungi in the soil around them. Using DNA to find those fungi was another story.

"When you take an amount of soil the size of a lima bean and you have 150 species of fungus in it, being able to pick out just the fungi that you're interested in or that your plant would be interested in is difficult," McCormick said.

McCormick, Rock-Blake and SERC intern Hope Brooks did it by using a special fragment of DNA called a *primer*. The primer latched onto DNA of Russulaceae fungi in the soil samples and nothing else, allowing them to calculate the amount of those fungi in the soil.

Within all three sites, soils with the most Russulaceae fungi were more likely to have small-whorled pogonias with aboveground shoots. Soils with fewer of those fungi were more likely to have orchids that had lain dormant for two to three years, and soils where there had never been any small-whorled pogonias had the fewest Russulaceae fungi.

The scientists also showed that to bring orchids back from dormancy, it's not enough to have just some of the right fungi.

"Before, I think we all were running on the assumption that it was just whether the fungus is present or not," said Dennis Whigham, SERC plant ecologist and co-author. The SERC team showed that having a big enough supply of fungi is just as important as the type. However, what the "right amount" is may depend on the soil. In that, all three sites were different.

That leaves scientists another mystery to solve: how to guarantee enough fungi can thrive to support this orchid. McCormick and Whigham discovered in earlier research that some fungi like decomposing wood. Trees may matter as well, as the fungi small-whorled pogonias need form relationships with trees as well as orchids. But the answers to conserving endangered plants, McCormick said, often lie beneath the surface.

"If you're concerned about a species you're trying to conserve and you're only detecting what's going on above ground, you're not getting the whole picture," she said.

### Learn more:

[DNA Offers New Hope for Saving Orchids](#)  
[Orchid, Fungi and Bacteria Relationships: "It's Complicated"](#)

Rock-Blake, Rachel, McCormick, Melissa, Brooks, Hope, Jones, Cynthia and Whigham, Dennis. "Symbiont abundance can affect host plant population dynamics." *American Journal of Botany*. [View full text](#)

[Tips for Tick Season] including a bumper crop of acorns and warmer-than-usual winter, mice are plentiful this year—and as a result, it’s likely Lyme disease will be, too. But don’t let that threat stop you from exploring the forested areas and bordering fields where ticks roam. There are flowers, birds, and so much of nature to see and trails to hike, after all. Instead, take care and prepare yourself for encounters of the tick-kind by following these guidelines.

### **Before Leaving the House**

**Cover up:** Ticks want to latch onto your skin, so the best defense is an armor of clothing. Wear long sleeves and pants, even if it’s hot out; better, wear light-colored clothing on which it’s easier to spot dark-colored ticks. And don’t wear clothes with holes or mesh; young ticks (known as nymphs) are around the size of a poppy seed and can easily squeeze through.

**Seal your seams:** Ticks are sneaky little bugs, and if there is a way for them to crawl under your clothes, they’ll find it. Seal any openings in your armor, especially where your body will brush against grass or shrubs, like your lower legs. A tried-and-true trick is to tuck your pants into your socks, but be careful: stretching your socks can create tick-sized gaps in the weave.

**Apply bug spray:** If you choose to use insect repellent, there are many options available to you—from lightweight botanicals like citronella, which mask your scent, to heavy-duty insecticides that kill ticks and other insects on contact. Many available for use like IR3535 and DEET can be used on the skin, **others like pyrethrin can only be sprayed on clothing and gear.**

When using Permanone: hang pants outside; spray



Permanone until cloth is damp. Leave outside until dry. Roll and store in a zippy bag until needed for a hike. Can be used many days before washing; can be washed three times before needing a re-application. If you are a clean freak, you will need to do this process very often.

Not all repellants are created equal. Some

kill all bugs—including insects that are food for birds. Because of this, it’s important to wear insecticide repellants only when you need them. And when using any product, it’s important to follow the directions. Even those advertised as “natural” can have negative effects if used incorrectly. Quick! Snatch up that tick with tape before it gets lost in your house. Photo: [Lars Kristian Flem](#)/Flickr CC (By-NC 2.0)



[Tips for Tick Season cont. ]

### **When Out in the Field**

**Stay informed:** Ticks are small; many look similar, and each species of tick carries different diseases. A tick reference guide will make it easier to know what you’ve encountered and what symptoms to look out for (if you’ve been bitten). There are many websites that feature images of the various tick species and their nymphs, which you can print out and carry with you; [Tick Encounter](#) from the University of Rhode Island is one example. There are also apps for iOS and Android, and most are free of charge.

**Stick to the trail: Do not stand in deer beds or walk deer trails.**

Ticks prefer grass at roughly knee height, 12 to 18 inches tall. They don’t hang from branches or jump; rather, they “quest” by extending their legs and waiting for a potential host to pass by. Sticking to the middle of the trail away from grass should lower your chances of contact.

### **Immediately Following Your Foray**

**Disinfect your clothes:** Remove your shoes and socks as soon as possible. Before getting in the house or car, put them in a plastic bag to keep ticks from spreading. Put your clothes in the dryer prior to putting them in the wash; a 15-minute heat cycle should kill any ticks lingering on your clothes. Clothing without metal parts can go in the microwave for 3 minutes.

**Do a tick check:** Examine your skin over your entire body, feeling for unexpected bumps. Be sure to check tick hotspots like your armpits, your groin, and behind your ears and hairline. You can enlist a handheld mirror or even a friend to inspect spots you can’t see. If you live in a tick-infested area, check for ticks frequently; the more familiar you are with checking, the more likely you’ll know what’s a freckle, what’s a mole, and what’s not supposed to be there.

### **If You Find a Tick**

**If it’s crawling on your skin:** Take a deep breath and catch that little guy. Tape can be really handy: stick the tape on the tick, fold it around so it’s trapped, and throw it out. That way it won’t hang out in your home.

**If it’s bitten your skin and is lodged:** Don’t panic. Ignore the folklore remedies that claim the final word on removing lodged ticks. Don’t burn it with a match or lighter, and don’t apply petroleum jelly or nail polish to its head to suffocate it; these methods increase the chances of infection. Remove it quickly—without a fuss—to reduce the chances of infection. Use a good, clean pair of tweezers, grasp the tick by its tiny head, and yank it out. Focusing on the head will help you remove the whole tick and not leave its mouth parts lodged inside. Any remaining bit could cause future irritation and infection. Then swipe on some disinfectant, and you’re good to go. If you catch it quickly, you’re unlikely to be infected—but keep watch for [common symptoms](#) just in case.



Missouri Native Plant Society  
PO BOX 440353  
St Louis, MO 63144-4353  
www.monativeplantsociety.org  
www.monativeplants.org



*The Petal Pusher is printed on recycled paper*

RETURN SERVICE REQUESTED

**"A thing is right when it tends to preserve the integrity, stability, and beauty of the biotic community.  
It is wrong when it tends otherwise." Aldo Leopold**

**PRESIDENT**

John Oliver  
4861 Gatesbury Dr  
St. Louis, MO 63128  
314-487-5924  
oliverjcomo@msn.com

**VICE PRESIDENT**

Dana Thomas  
1530E Farm Rd 96  
Springfield MO 65803  
mail@botanytraining.com

**SECRETARY**

Malissa Briggler  
10297 CR 371  
New Bloomfield, MO 65063  
573-301-0082  
Malissa.Briggler@mdc.mo.gov

**TREASURER**

Bob Siemer  
74 Conway Cove Drive  
Chesterfield, MO 63017  
636-537-2466  
aee623@prodigy.net

**MEMBERSHIP**

Ann Earley  
P.O. Box 440353  
St. Louis, MO 63144-4353  
314-963-0103  
aee623@prodigy.net

**PAST PRESIDENT**

Paul McKenzie  
2311 Grandview Circle  
Columbia, MO 65203  
573-445-3019  
paulbeckymo@mchsi.com

**BOARD MEMBERS**

Justin Thomas ('14-'17)  
1530E Farm Rd 96  
Springfield MO 65803  
jthomas@botanytraining.com

Mike Skinner ('16-'17)  
167 South Peachtree  
South Peachtree  
Republic, MO 65738  
417-268-5704  
Mike.Skinner6680@gmail.com

Bruce Schuette ('16-'19)

678 St. Route 147  
Troy, MO 63379  
636-528-7247 (w)  
basch@centurytel.net

Rick Gray ('15-'18)  
6 Montauk Court  
St Louis MO 63146  
314-9936088  
rgray@seilerinst.com

Steve Buback ('15-'18)  
MDC NW Regional Office  
701 James McCarthy Dr  
St. Joseph, MO 64507  
816-271-3111  
Steve.Buback@mdc.mo.gov

Ron Colatskie ('16-'19)  
8 Walnut Park Dr  
Cedar Hill MO 63016  
636-931-5222  
Ronald.Colatskie@dnr.mo.gov

**MISSOURIENSIS**

**EDITOR**  
Doug Ladd  
The Nature Conservancy  
2800 S. Brentwood Blvd.  
St. Louis, MO 63144  
314-968-1105 (w)  
dladd@tnc.org

**PETAL PUSHER EDITOR**

Becky Erickson  
PO BOX 496  
Ashland MO 65010  
573-657-2314  
beckyerick711@centurylink.net

**DISTRIBUTION MANAGER**

Leslie Limberg  
636-398-8809  
LLlimberg@aol.com  
Assistants: Emily Horton  
And Joan Featherston

**EDITORIAL COMMITTEE**

Lisa Hooper  
Jay Raveill and Tim Smith

**ARCHIVES**

Rex Hill  
4 Grantwood Lane  
St. Louis, MO 63123  
314-849-1464  
RexLHill@charter.net

**WEBMASTER**

Brian Edmond  
8878 N FR 75  
Walnut Grove, MO 65770  
417-742-9438  
brianedmond@gmail.com

www.monativeplants.org  
www.monativeplantsociety.org

**PERENNIS**

Andrew Braun  
apbraun1s@gmail.com

**EMPIRE PRAIRIE**

Steve Buback [also on Board]

**OZARKS**

Liz Olson  
MDC Ozark Regional Office  
551 Joe Jones Blvd  
West Plains, MO 65775  
417-255-9561 Ext. 296 (w)  
Elizabeth.Olson@mdc.mo.gov

**OSAGE PLAINS**

Casey Burks  
914 SE Hwy ZZ  
Deepwater, MO 64740  
515-291-1550  
mbugwoman@gmail.com

**HAWTHORN**

John George  
  
Columbia, MO 65102  
573-777-0394  
John.George@mdc.mo.gov

**ST. LOUIS**

Rex Hill  
4 Grantwood Lane  
St. Louis, MO 63123  
314-849-1464  
RexLHill@charter.net

**ENVIRONMENT & EDUCATION**

John Oliver [also President]

**CHAPTER REPRESENTATIVES**

**SOUTHWEST**  
Michelle Bowe  
901 S. National  
Springfield MO 65897  
417-836-6189  
Mbowe@MissouriState.edu

**KANSAS CITY**

Hilary Haley  
204 South 15<sup>th</sup> Street  
Bethany, MO 64424  
(660) 867-3866  
hhaley@tnc.org