



Missouri Native Plant Society Hawthorn Chapter Newsletter

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The Hawthorn Chapter of the Missouri Native Plant Society Newsletter is published monthly. Send submissions by the 26th of every month to:

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We would like to read about announcements, impressions, species accounts, photos, poems, links to scientific articles or other creative nature writing **from you, too.**

February 2019

Future Activities Calendar

11 Feb Mon 6:30 pm. UU church Monday 6:30pm Members Meeting Unitarian Universalist Church, 2615 Shepard Blvd, Columbia. This is a make-up for the snowed-out

14 Jan mtg. Traditionally this is our planning meeting for the next year. If you have any requests for mosey destinations or workshop topics you are welcome to voice those at this time. Meetings are always the second Mon of odd-numbered months 6:30pm at UU Church.

14 Feb 11:30 Thur Lunch at RagTag, 10 Hitt St, just south of Broadway. Lunch is always on the Th-third Th-Thursday of every month. Fresh, nutritious food and open conversation on environmental and garden topics. Post this activity throughout the year on your calendar.

11 March Mon 6:30 pm. UU church Monday 6:30pm Members Meeting Unitarian Universalist Church, 2615 Shepard Blvd, Columbia. Meetings are always the second Mon of odd-numbered months 6:30pm at UU Church. Part of the meeting will be planning logistics for plant sales in April and May; Program TBA.

14 March Thur 11:30 Lunch at RagTag, 10 Hitt St, just south of Broadway.

13 April Sat Bradford Farm Plant Sale 10am – 2pm. This is our largest sale of the year. Come to activities in Feb and March to learn how you can help. We need many hands from 1 March thru mid-May.

18 April Thur 11:30 Lunch at RagTag, 10 Hitt St, just south of Broadway

28 April Sun 10am - 6:30 pm; Earth Day Festival in downtown Columbia.

11 May Sat Garden Festival 10 - 4 at Arrow Rock SP.

13 May Mon 6:30 pm. UU Church Monday 6:30pm Members Meeting Unitarian Universalist Church, 2615 Shepard Blvd, Columbia. Program TBA.

18 May Sat Bass Pro 10 - 2 Columbia plant sale

21 May Thur 11:30 Lunch at RagTag, 10 Hitt St.

The chapter members rely on each other to share a myriad of information: links to book reviews and scientific articles with cites, original and shared poems with cite, personal stories of experiences in nature, photos to illustrate any of these submissions. We are all educated people who can write a series of sentences to form a paragraph and then two paragraphs. If you enjoy reading the thoughts of others it is best to submit your own thoughts, ideas, opinions, artistic creations.

Your input is important to all of us.

This is the 34th year Hawthorn has supplied a newsletter to chapter members. Thanks to Doug Miller for keeping the chapter website up to date. Thanks to Cindy, Louise, and Val who sent information on time for this issue.



Amazing Information on Soil Fungi

*Submissions from Cindy, Louise, Val;
compiled by Becky Erickson*

As I entered the Council Room in the Columbia Government Building to hear a talk by Dr. Alice Tipton, I was surprised and impressed by the overwhelming response of nearly 100 people from statewide to a topic that seemed like it would draw only a small group with a micro-interest. The atmosphere was electric with a sense of being on the ground floor of some new, dynamic and promising research. The importance of mycorrhizal fungi to the development of plants is not totally new having been of interest since a century ago, but the new technology that helps describe the process is gaining traction. I know this is very general.

Put simply, plants get nutrients from soil fungi and fungi get sugar from plants in a symbiotic relationship. There are thousands of fungi [as many as 60×10^{27} = a HUGE number]; some inter-react and inter-breed. Some plants rely on specific fungi and some fungi rely on specific plants. I can't begin to describe Alice Tipton's research methods (you had to be there), but I was impressed with where we're headed and the implications for improving our Prairies and native plants.

Some allelopathic plants like black walnut, fescue and garlic-mustard can disrupt the symbiotic relationship of fungi; i.e. these species stop communication of fungi between plants, soil, and other plants. [Think cutting communication of the Mother Tree in Avatar]

Endophytes are types of fungi that reside within the plant root system = inside the root cells. There are positive and negative endophytes that can help or hurt a plant or even have no effect on the plant. Measuring endophytes requires DNA sequencing, looking at the endophytes through a microscope does not give you enough information to determine specific species. Prairie endophytes can be very hard to grow, some require a whole year of growth just to get a few spores.

Prairie soils associated with the most diversity of native plants have a lower level phosphorus and potassium measured in the soils. The prairie soils with a greater diversity of natives also have the most diversity in species of measured endophytes. Late successional, conservative plants rely more on native mycorrhizal fungi. When artificial nutrients are high such as those in ag fields and are low with native fungi because of tilling, these species might or might not germinate, but they definitely will not persist. This is the frustration when trying to seed natives into ag fields.

"Can I grow a diversity of prairie endophytes?" Yes. But it takes a bit of work. Go out and collect a trowel of soil from a virgin prairie broadly here and there into one or two 5-gallon buckets. Go home. Into 10-20 5-gallon buckets with drainage holes put 4 gallons of your dirt. Add 1-2 quarts of your collected prairie soil to each bucket. Sprinkle 10-20 seeds of sorghum. They are annual, high in sugar to feed the fungi, easy to dispose of. The sorghum roots will help to distribute and grow fungi throughout the bucket of dirt. You must care for these buckets every day. In late summer cut off sorghum at the crown leaving the roots. Dump all dirt into a LARGE container to which you can add 5X the volume of water [one gallon dirt to 5+ gallon water or more to make a liquid sludge]. Mix in a pug mill. Find a machine that will spray this sludge over the land you are seeding into natives.

Mycobloom is a mixture of prairie endophytes that you can purchase. It is recommended to buy this directly from the company so you get the freshest product. Dr Alice Tipton suggests that refrigeration may help keep it more viable.

You can contact the University of Missouri Soil Health Lab for a soil analysis. What you ask for is more than the standard PKN analysis. This should include a Phospholipid fatty acid (PFLA) Analysis, which indicates the amount of microbial biomass and proportions of microbial types such as mycorrhizal fungi, gram positive fungi, gram negative fungi, actinomycetes, and saprophytic fungi. The cost is pretty high for this specific analysis.

Here is the website for more information: <https://cafnr.missouri.edu/soil-health/services/>

What blew me away was: we sat thru this engaging 2-hour lecture on Saturday. Then Monday noon NPR had a conversation on All Things Considered about the same topic. [sorry I don't know the man's name] There was a long explanation that all higher animals [we] share 50% DNA with fungi. That fungi fight viruses and bacteria within their soil communities. That all of our antibacterials have come from soil fungi [penicillin]. The Western Allies won WWII because they had antibiotics when Germany and Japan did not.

The fungi in these ancient virgin soils in old growth forests and old growth grasslands hold the solutions to all plant and animal diseases. These habitats and communities can be re-seeded and re-planted but nothing will replace the original for the study of their interactions.



Announcements

Next meeting minutes from the will be available asap after the rescheduled meeting 11 Feb.



Lunch at RagTag Thurs 14 Feb

Meet our group for lunch 11:30 at RagTag, 10 Hitt St [Just south of Broadway]. Last lunch [18 Jan] was attended by four members with lively discussions about weather challenges and good ideas about future activities. Hope to see you there next time.



True Native Plants for Wildlife

It cannot be said more strongly from all evidence that our bird and insect numbers have declined by close to 50% because of declines in native plant landscape numbers and diversity. It is up to us to rehab more of our turf laws to a diverse mix of true native plants. Please corroborate with members of your chapter to ask about the correct sources of native plants. Please purchase true native plants from local native plant nurseries – not Nativars from the big box stores. Your Hawthorn chapter has a native nursery. Contact beckyerick711@centurylink.net for info.



New Gardening Book in Production

Some Hawthorn members have committed to publishing a book to assist newbies about how and where to plant each species. Before winter is over, text will be written for about 100 species. These pages will probably cover your favorites. To complete these pages, we will need a photo of spring/summer/fall: spring emerging sprout, a good shot of the leaves and bolt, a portrait of the flower including some leaves, a seed head portrait. These photos must be VERY in focus and the illustrated structure must be clearly visible. We can format and edit this next winter.

There is no way we can get 4-500 species published in one year to permanently bind. This book must be published in a loose-leaf format so new pages can be added.

Anyone with any knowledge in this line of publishing – PLEASE - come forward. Please send publishing ideas and perfect photos to beckyerick711@centurylink.net



Register Your Garden For Monarchs

Sign up your garden as a Monarch Waystation with Monarch Watch. Then Join WildOnes [native landscaping] and register your garden for a beautiful sign.

Be a citizen scientist. Almost half of our scientific data from nature has come from people like you. Learn about collecting bird data [Cornell Lab of Ornithology], plant phenology data [project Bud Burst], bee data & butterfly data [Xerces Society].

LINK UP!!

I finally got onto the Biota of North America. The distribution maps are fascinating!

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

I realize I'm the last to discover a good thing, but I'll post this for all who are one step behind me.

iNaturalist is a world-wide site used by 300G people who have made 10M observations.

Have a great time exploring!

<https://www.inaturalist.org/>

Nadia's Yard: a blog by Randy Tindall

<http://nadiasyard.com/>

MONPS website

www.monativeplantsociety.org

Bush honeysuckle removal – contact Eric Bohle

ebohle4@gmail.com

Wren Song

<http://www.ecosystemgardening.com/wren-song/>

Insect conservation: Xerces Society www.xerces.org

<https://xerces.org/bringbackthepollinators/>

<https://xerces.org/2018/04/19/tropical-milkweed-a-no-grow/>

<https://xerces.org/2018/04/04/rain-gardens-are-a-win-win/>

Plant identification: USDA plant database <http://plants.usda.gov>

Grow Native resources: www.grownative.com

Nature Boosts Wellbeing

Donna VanBuecken [Accent on Natural Landscaping](#) December 5, 2018 Copyright 2005-2018

Getting outside and walking in nature will help you find a sense of place — a sense of wellbeing.

“If you truly love Nature, you will find beauty everywhere.” Vincent Van Gogh



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
- Paper postal service (\$10)
- 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



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MEMBERSHIP FORM

**Missouri Native Plant Society-
Hawthorn Chapter**

July 1 through June 30. Dues are Due NOW!

Name _____

Address _____

Phone: Evening _____

Day or Cell _____

Email: _____

Method of receiving chapter newsletter:

(circle preference) **Email** **Regular mail**

As of July 2015 edition of the Petal Pusher printed on paper, sent by post, will cost an additional \$10 more than standard membership. 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.