

Wild Ones®

NATIVE PLANTS, NATURAL LANDSCAPES

OZARK CHAPTER

SPRING 2021 ISSUE

CONTENTS

BOARD OF DIRECTORS

GARDENS ARE NOT MADE BY SINGING 'OH, HOW BEAUTIFUL' AND SITTING IN THE SHADE.

-RUDYARD KIPLING

PRESIDENT'S COLUMN

Wild Ones,

Make no mistake about it, the past year has been rough on many of us. Many have lost loved ones way too soon; many others have seen their lives uprooted by a sudden loss in income, forced to move across the country in order to accept new employment, or to be closer to their support networks. No doubt, the past year (dare I name it?) will likely go down as one of the worst in recent memory. It has been a very difficult year indeed for many to maintain a positive outlook on life, especially with the loneliness that often comes with social isolation as we each try to do our part to slow the spread of the virus.

But I want to share with you an experience I had last year that has given me hope. This past fall, I was delighted to find that our small parcel was host to a covey of bobwhite quail, a bird that many here have no recent memory of seeing or hearing of in this area. We live on less than an acre in eastern Benton County. When we purchased this property, it was an illegal dumpsite, covered in trash and garbage left by an unknown collection of thoughtless humans over a period of years. Nevertheless, after we purchased the property we began to pick up the trash, piece by piece, and have worked tirelessly to replace the noxious invasive species that had overtaken the property with native grasses, wildflowers, shrubs, and trees.

Admittedly, we live not far from a national park where they are working to create habitat for bobwhite quail, and I have no doubt we probably would not have seen the bobwhites on our own property had it not been for the local efforts of the National Park Service. But at the sight of this covey of around a dozen birds, I felt encouraged that the work we are doing, even on such a small parcel, was having an impact. I was reminded that, no matter how small our outdoor living space, the more of us that are working together to create living landscapes outside our homes helps to bring more of these types of rewards to us all. Creating habitat is one thing, but reconnecting habitats is where the tide really starts to turn. I suddenly felt a sense of purpose knowing that our small parcel was helping to connect the habitat at the local National Park to the other bobwhite quail habitats found on other properties around our home.

As we begin to look forward to 2021 and consider what we hope to accomplish this year, I want to encourage you to include growing more native plants among your New Year's resolutions. Every little bit, no matter how small, can make a huge difference. Every bit of habitat that is recreated weaves a new thread into the web of life and connects our efforts in a way that we often can't fully comprehend until we begin to see it happening before our very eyes.

Wild Ones, Ozark Chapter is here to assist you on this journey. We want you to have a chance to enjoy the rewards that come with seeing your own outdoor living space converted into a habitat or a waystation for a species that is struggling to survive amidst the less thoughtful members of our own species. If you have any questions, please don't hesitate to email us at WildOnesOzarkChapter@gmail.com. We are here to serve and assist you in whatever way we can.

Dutifully Yours,

Eric Fuselier

Eric Fuselier, President
Wild Ones, Ozark Chapter

THERE ARE SOME WHO CAN LIVE WITHOUT WILD THINGS AND SOME WHO CANNOT.

— ALDO LEOPOLD (1989). A SAND COUNTY ALMANAC, AND SKETCHES HERE AND THERE", P.7, OXFORD UNIVERSITY PRESS, USA

SITE VISITS

As people transition to using more native plants in their landscapes, they often need support and advice. The Ozark Chapter of Wild Ones is now offering the service of onsite visits in Northwest Arkansas.

The role of the Site Visit Committee is to offer guidance, encouragement, resources, and professional connections to homes and non-profits. Prior to the site visit, a short questionnaire will be sent to establish the priorities of the person asking for help. Our services will be offered in a manner that does not compete with professionals.

If you would like to sign up for a visit, send an email to wildonesozarkchapter@gmail.com. Please use Site Visit in the subject line.

If you are interested in being on the Site Visit committee and making home visits, please contact morrisonlissa3@gmail.com.

NATIVE PLANT SOURCES

The Site Visit Committee is gathering a list of sources for native plants. Below are some of sources identified. Please share with us contact information for your favorites at wildonesozarkchapter@gmail.com.

Missouri Wildflowers Nursery
www.mowildflowers.net

Prairie Moon Nursery
www.prairiemoon.com

Pine Ridge Gardens
www.pineridgegardens.com

Ozark Soul
www.ozarksoul.com

North Creek Nursery (wholesale only)
www.northcreeknurseries.com

White River Nursery
www.whiterivernursery.com

Holland Wildflower Farm
www.hollandwildflowerfarm.com

For Wildflower Seeds
email: hwildflowerfarm@cox-internet.com

KEEPING IN TOUCH

Facebook – Our Chapter Facebook page is open to the public.
https://www.facebook.com/OzarkWildOnes

Board meetings – Member meetings are temporarily on hold due to Covid-19, but the Board continues to meet monthly. We're developing online programming – so keep an eye on our Facebook postings.

National Website – Members of Wild Ones have exclusive access to abundant resources on the national Wild Ones website. Registration gives you access to files, publications, and articles only available to members. On the upper right-hand corner of the main page is a "member login" button that will give you instructions for registering.

You'll be able to access archived Journal articles, vote on the annual photo contest, sign up for the discussion group, and much more!
https://ozark.wildones.org/

milkweed & misumena

PLANT IT FOR THE SPIDERS!

by Willa Thomason

One cool morning in early September, I rode my bike to Mt. Kessler Regional Park to get a look at the late-blooming asters, goldenrod, and other usual autumn suspects growing along the Greenway. I pulled over frequently to take pictures of the blooms, relishing the bursts of color on this cloudy cool day which signaled a welcome change of season.

Buttonbush, *Cephalanthus americanus*, is one of my favorite plants for its form, its role as a food for caterpillars, and its spiky white spherical blooms. I was surprised that day to see a *Cephalanthus* bloom still in its prime so late in the season, so I snapped a photo. I was surprised again when, looking at the photo as I walked my bike down the Greenway shoulder, I noticed something I hadn't seen looking directly at the flower. Wedged between the individual flowers of the spherical bloom, perfectly still and camouflaged, sat a spider. I walked back, eager to prove the image wasn't some malfunction of my old water-logged phone. With new eyes, I quickly spotted the small cream and maroon spider, sitting in the same position that came through on the photo.

Now attuned to the details, I also spotted the carcass of a moth, likely a recent meal of my arachnid friend, stuck to the bottom of the same

Whitebanded crab spider, Misumenoides formosipes, on American Buttonbush near Mt. Kessler in September, 2020

inflorescence. After another quick survey of the blooms I rode home, excited to put a name to the multi-eyed face of my discovery.

I think it's worth noting that for most of my life, until my Peace Corps service in Samoa, where I frequently encountered hand-sized shower spiders, I have been arachnophobic. Between the exposure therapy in Samoa and learning to co-exist with wolf spiders and gorgeous orb weavers in the garden, I have learned to love spiders. My arachnophobia is now reserved for ticks.

Spring is coming and crab spiders will be emerging for your viewing pleasure! Here are some tidbits to pique your interest and help you find these charismatic spiders.

- This spider, along with cousin *Misumena vatia*, the Goldenrod crab spider, can range in color from pinkish-white to yellow-ish green. Both species have the remarkable ability to change color, within a few days, from white to yellow and back again. This allows them to better match the inflorescence on their ambush-site.
- Studies by crab spider expert Douglass H. Morse show that adult *Misumena vatia* females occupy milkweeds more frequently than any other species of flower. As if we needed another reason to plant *Asclepias sp.*! Not only that, but females hunting on milkweed capture larger volumes of prey. One might be led to believe this is due to unfortunate circumstances in which insects legs become ensnared in the sticky pollinia traps that *Asclepias* sets for unwitting pollinators. However, according to a 1989 Morse study, only 3% of all *Misumena* prey are the entangled sort and the leg snare doesn't increase their risk of predation. Glad we cleared that one up!

Goldenrod crab spider, Misumena vatia, in yellow form captures prey

- *Misumena v.* spiderlings hatch in spring, typically within a rolled-up milkweed leaf to which their mother secured their egg-sac the previous fall. If mom has chosen a nesting site on par with the status quo, the spiderlings will emerge in close proximity to goldenrod, *Solidago sp.*, so that as the milkweeds senesce, the blooming goldenrods can take over as hunting sites. Spiderlings born into less-than-ideal conditions may release their silks to the winds of fortune and balloon away to an uncertain future.

To learn more, check out Douglass H. Morse's 2007 book, "Predator Upon a Flower"... or explore your garden and make your own observations!

ABOUT THE AUTHOR:

Willa Avery became interested in sustainability and gardening during her service in Samoa with the US Peace Corps from 2014-2016. She now lives in downtown Fayetteville with her boyfriend Cale, the amazing Apple Seeds farmer, and two of their favorite invasive species, their cats JJ and Scruffy. When she's not digging around at the Downtown Square, which she landscapes as a City Horticulturist, she enjoys hiking, rock climbing and playing with her band, Dandelion Heart.

WILD ONES MEMBER PROFILE

BRIAN POWELL

by Steve Alarid

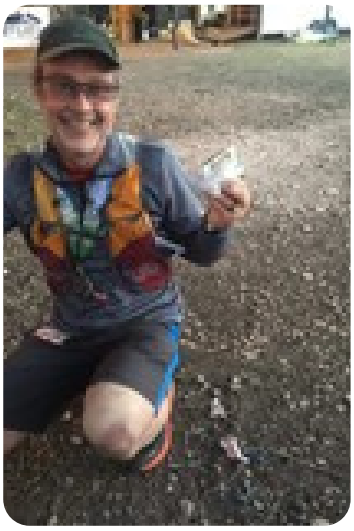
Sometimes a ramblin' man just has to put down roots. By 2001, Brian Powell had lived in a dozen cities in seven states, from the east coast to the west, when he and his wife Kelly were invited to visit Northwest Arkansas by an old friend. It didn't take long for the Powells to recognize the appeal. Brian fell for the many outdoor activities and opportunities available in the Natural State. He found a professional niche with Sam's Club at the Bentonville home office, and the Powells never moved again.

Brian retired from the corporate environment in 2017. "For years I spent a lot of time in meetings and working on some very abstract and technical projects. I really felt like I needed to look at the world through a very different lens." He began exploring ways to dive into both recreational pursuits and natural resource management. Those initial attractions that drew him here have become his passions.

The first leg of Brian's post-Walmart journey began with his volunteering at Hobbs State Park. Hobbs offered - still does - opportunities to work on hiking and cycling trails, and to get involved with public events and a variety of other programs. It was at Hobbs that Brian crossed paths with fellow outdoor enthusiasts with the Arkansas Master Naturalists (AMN).

Those introductions led to a 6-week gig with the Arkansas State Parks Trail Team at Petit Jean State Park. Brian worked with a National Civilian Community Corp team to perform restoration work on a historic CCC-era trail. In a repeat tour with NCCC, he helped maintain and restore a series of CCC drainage structures. Those connections and his certification as a Master Naturalist eventually led him to our Wild Ones, Ozarks Chapter.

As a Wild Ones member, Brian chairs the Dig Committee. For the committee's first organized event, members "rescued" an established stand of Spider milkweed (*Aesclepias viridis*) from a cattle pasture that was about to become yet another subdivision. The Monarch magnets were transplanted to a nursery location to be used as seed source for future projects. Brian envisions the team taking on both rescue and restoration work in the future. The group may have an opening with the Lake Springdale Trailhead Project. This Wild Ones/AMN cooperative effort, described in detail in a previous newsletter and to which Brian has already lent a hand, welcomes all of y'all to "dig in."



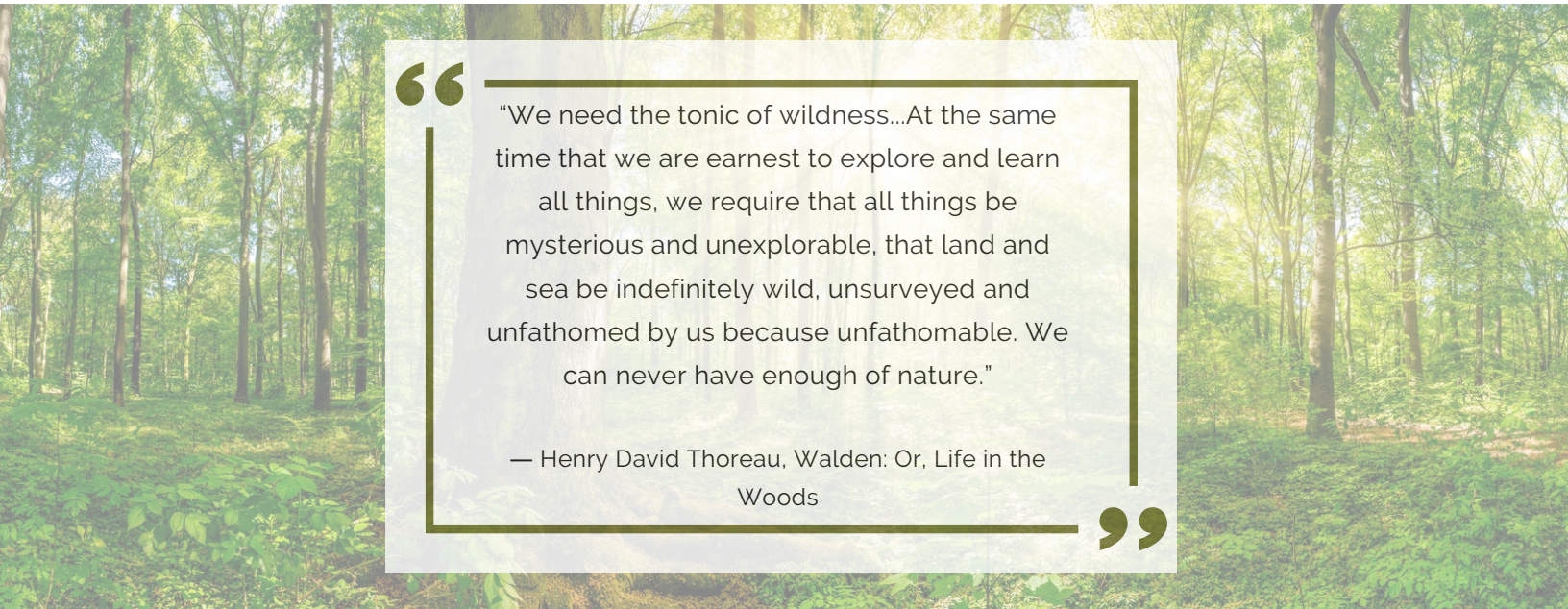
Brian's additional outdoor interests are diverse and manifold. You may find him cranking through the woods on a mountain bike; camping by peaceful waters in Vermont; or hiking the Ozark Highlands Trail. Of the OHT, he jokes, "I need to finish the last three (sections) before they connect to Missouri and I have to walk to St Louis."

He tattles a funny tale on himself about how many directions his attention can turn. At a recent 50k run (!) he drew a bit of good-natured flak from fellow athletes by stopping along the race course to pick up litter.

That's gold medal performance in our book, Mr. Powell!

ABOUT THE AUTHOR:

Steve Alarid served 33 years as a forester and firefighter with the U.S. Forest Service. He and his wife, Sherrie, have five children and seven grandchildren. His conservation affiliations include the Arkansas Master Naturalists and Ozark Chinquapin Foundation.



"We need the tonic of wildness...At the same time that we are earnest to explore and learn all things, we require that all things be mysterious and unexplorable, that land and sea be indefinitely wild, unsurveyed and unfathomed by us because unfathomable. We can never have enough of nature."

— Henry David Thoreau, Walden: Or, Life in the Woods

PLANTS TO ENTICE A CHILD'S MIND!

BY SARAH GEURTZ, NORTHWEST ARKANSAS PLANT SOCIETY'S EDUCATION COMMITTEE

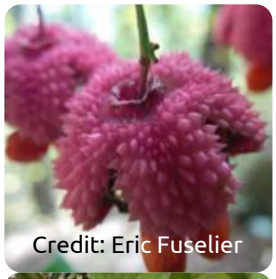
To view the world through a child's eyes is to view the world very differently. In fact, it makes for a more interesting life. Children can be enticed into the world of natives when you share with them fun aspects of of the plants. Here's a list to get you started:

Asclepias hirtella, purpurascens, tuberosa, verticillata, viridis – **Milkweeds** (the more common ones found in NWA). Grow our various species of Milkweeds to give your children the experience of watching the lifecycle of the Monarch butterfly. That's cool enough by itself; add to it the delight of playing with ripe seed pods and letting the seeds blow in the wind and it's a very cool plant!

Baptisia alba – White Indigo. When emerging from the ground, the shoot on these plants looks alien-like! It can be difficult to catch this plant emerging in time to view the odd-looking shoot before its foliage unfurls. If you happen to miss that first emergence, just wait for late summer when the seedpods form. Your children will be delighted because, as they will tell you, the pods resemble both butts and brains. However, if the children will leave the pods on the plant and not pop all of them (squeezing them until they pop is apparently quite enjoyable to children), a fully-ripe seed pod can be shaken and the loose seeds inside will sound like a rattle! Don't wait too long into the fall/winter though – the seed pods will eventually split open on their own to release the seeds.

Bignonia capreolata – **Crossvine**. From experience, I've learned that children love to put the flowers over the tips of their fingers (or is this just my child?)! If the vine grows tall enough, they'll only be able to denude the lower portion of your vine.

***Cornus* species – Dogwoods.** Dogwoods have an interesting trait called elastic vascular bundles. Before the foliage has begun to change colors in the fall, very slowly and carefully pull the leaf in half, across the veins. If you've done it very carefully, you'll be left with two pieces of leaf being "invisibly" held together. If you look closely, you'll see filamentous elastic vascular bundles at the points of the main veins holding the two pieces together! Next, have the children do this experiment with other tree leaves. My daughter has found another tree that does this. You ought to be able to keep the kids busy for a while trying this!


Credit: Eric Fuselier


Credit: prairiemoonnursery.com


Credit: Eric Hunt

Euonymus americanus **– Hearts a Burstin'/Strawberry Bush.** The seeds of this native suckering shrub are held in red warty seed capsules. In the fall they burst open to reveal red seeds hanging inside. The common name, as well as the seed capsules, will fascinate your child!

Fragaria virginica **– Wild Strawberry.** Grow this for tiny strawberries that your children can search for on their own. The berries are delicious. In both my and my child's opinion, they taste better than store-bought strawberries.

Hibiscus moscheutos **– Swamp Mallow.** You can make a small flower doll out of the flowers of this plant! Take one open flower and set it petal-edge down on a surface. Then cut a flower bud so that a bit of the petals is peeking out of the end and, using its stem, stick it into the base of the opened flower. Voila! You have a lady in a wide-skirted dress! My great-grandmother used to do this with my mother, and she remembers it vividly today. This little trick will be sure to impress.

Impatiens capensis **– Jewelweed.** You'll find this growing in wet areas. Scout some out first, and make sure that the seed pods are at the "bursting" stage. Begin by explaining that this is our native Impatien and that the common name of "Jewelweed" comes from the way the leaf appears when you place it under water – the leaf has a hydrophobic quality that results in a silvery appearance when under water. Then tell them about its other common name, "Touch Me Not," and have them touch a ripe seedpod. They will love the way the ripe seedpods explode in their fingers!

Lonicera sempervirens **– Coral Honeysuckle.** This native honeysuckle vine isn't aggressive like the invasive Japanese Honeysuckle. Sadly, it seems to not contain as much nectar as the Japanese honeysuckle. However, it still has nectar to suck, so buy a plant! I found that on this native honeysuckle, a good way to get to the nectar is to pinch off the very green base of the flower and suck the nectar out (instead of pulling out the pistil from the flower's end, which is how I grew up getting nectar from the invasive Japanese Honeysuckle). As an added benefit, the vine will usually hold some flower buds through much of the winter, which add a bit of color. Its plump red berries are also very attractive.

Ludwegia alternifolia **– Seedbox.** In the fall and winter, this plant holds upright seedheads with a small hole in the top. What makes them so interesting is that they are squarish in shape – like a tiny box! When the seeds are ripe, turn a seedbox over and dust-like seeds will spill out of the hole into your hand!

Pycnanthemum albescens/pilosum/tenuifolium **– Mints.** These are some of our native mint species. The foliage's minty scent will delight everyone. Keep in mind that some of these will spread, like the invasive non-native mints, but maybe that's not such a bad thing? Calamintha arkansana (Arkansas Mint/Ozark Calamint) also has a strong minty scent.

***Physostegia virginiana* – Obedient Plant/False Dragonhead.** In the later part of summer, this native perennial produces spires of lavender, pale pink, or white tubular flowers. When the individual flowers are gently pushed sideways, the flower will stay that way for a while. Hence the name of "obedient plant." Children will enjoy trying this out on their own.

***Rubus* species (Raspberry/Blackberries/Dewberries (depending on species).** Try growing one or more of these for the berries and let your child experience the taste of the different stages of ripeness. Once the berries are ripe, they can make a little picnic for you!

***Verbesina virginica* - Frostweed.** Grow some of this plant and let the fall frost flowers be a welcome surprise for a child. Cold temperatures cause the sap to freeze and extrude from the stem. As the sap flows, further sap freezes and pushes the earlier-frozen sap outwards. This results in beautiful, curling, extrusions of sap. You may again see frost flowers later during the winter, but they generally are not as showy as those first ones.

After the first truly cold winter morning, check to make sure the Frostweed has "bloomed" because you don't want to let the children down. Then, wake the children, throw on your robes, and run out in great excitement to "see if the frost flowers have bloomed." You're bound to leave an exciting and lasting memory.

***Zizia aurea* – Golden Alexander.** This native carrot relative will invariably attract Swallowtail Butterflies to lay eggs on it. When the eggs hatch and the caterpillars get large, you might get to see their defense mechanism – they extrude what's known as their osmeterium from behind their "heads." It's an orange, forked organ that resembles a snake's tongue. It also produces a very stinky smell! This is sure to delight kiddos!

ABOUT THE AUTHOR:

Sarah Geurtz of Earthplan Design Alternatives, PA, is a landscape architect holding degrees in both Turf and Landscape Horticulture and Landscape Architecture. She is passionate about the native plants of Arkansas and the positive ecologic impact and public educationalpotential created by using them in her landscape designs. She is also a member of the Arkansas Native Plant Society's Education Committee

Master Naturalists In Action

Growing Native Plants for Local Homeowners and Non-Profits

By Rose Gergerich, Member, Wild Ones Ozark Chapter

Master Naturalists collecting seeds and learning about native plants from Warren Fields, who has converted his urban yard to native plants.

This is the second of three articles describing the Northwest Arkansas Master Naturalists Native Plant Project. These articles are not designed to convince folks to grow native plants. If you need convincing, we recommend two books by Douglas Tallamy: "Bringing Nature Home: How you Can Sustain Wildlife with Native Plants," and "Nature's Best Hope: A New Approach to Conservation that Starts in Your Backyard."

The three articles in this series are:

1. Native Plant: A Year's Timeline (see Fall 2020 Newsletter of Wild Ones, Ozark Chapter)
2. Native Plant Production: Educating Ourselves and Others about Native Plants and Their Value (this article)
3. Native Plant Production: What Works for Us

Native Plant Production

Educating Ourselves and Others about Native Plants and Their Value

By Rose Gergerich, Member, Wild Ones Ozark Chapter

Many resources are available to learn about native plants (see partial list at end of this article), but we have found that the most effective and enjoyable way to gain knowledge about native plants is through the hands-on activities that have evolved naturally as our native plant project has developed over the past eight years. Volunteers who attend these workshops and become familiar with the materials and methods used to produce plants are more likely to propagate native plants on their own. These activities in our chapter include:

A WORKSHOPS

Seed Collection: In late fall, we gather for a seed collection workshop at the home of Warren and Holly Fields, who have converted their urban yard to an amazing, diverse collection of native plants. The workshop starts in the garage with an informal presentation in which important considerations about seed collection are emphasized. This includes information on treatment and storage of collected seeds as well as the importance of careful labeling to include collection location, date collected, collector's name, and the common and scientific name of the plant. After this introduction, we ramble through the yard with Warren as he identifies each plant and waxes eloquent on their benefits and beauty. Each plant type is evaluated for timely seed collection, and those seeds that are ready for harvesting are collected, bagged in paper sacks and carefully labeled. Many seeds in Warren's yard are ready for harvesting before or after the date of the workshop, and these seeds are harvested by Warren when they are ready and added to the seed collection. Demonstrations include stripping seeds from grass heads, correctly determining whether seeds are mature enough for collection, and the identification of seeds that require immediate cleaning, such as those seeds in fleshy berries.

We learn a lot by observing the diversity in seedlings such as these chlorophyll deficient mutants of milkweed and purpletop grass seedlings

Seed Cleaning: In early fall, after most of our native seeds have been collected and dried, we hold an indoor seed cleaning workshop in a classroom where folks sit at tables, working in pairs, to remove excess materials from seeds. This allows us to produce seed that is free from organic debris that could lead to mold formation during storage. Tweezers, pliers, and funnels are on hand for use. A dissecting microscope and magnifying lenses are made available for folks to closely examine seed collections, and volunteers are encouraged to use reference books and websites on an available laptop computer or their phones to determine the size, shape, and color of the seeds they are cleaning. Kitchen sieves with different size meshes are used to separate seeds from debris. Once the seeds are satisfactorily cleaned, a 3 x 5 card with information about the seed collection (common name, scientific name, site and date of collection, collector, and detailed information about seed treatment that is required before planting) is packaged with the dried, clean seed in a small plastic bag, which is stored in a refrigerator until time for seed treatment and eventual planting.

Seed Treatment: Many native plant seeds will not germinate unless they are exposed to winter elements. In order to mimic the natural conditions that lead to germination and thus promote quicker and more consistent germination of seeds, many of the native seeds in our collection are treated in various ways before being planted in a controlled environment in a greenhouse setting. The workshop begins with a presentation on various types of seed treatment (reference), but the "work" of this workshop is for volunteers to treat (stratify) about two-thirds of the seeds in our collection that require a two-month "winter" in order to germinate. A review of the information on seed treatment reveals that there are many techniques and materials that can be used to stratify seeds. Following is the procedure that has worked well for us. We thoroughly mix one volume of seeds with two volumes of moist milled sphagnum peat moss and two volumes of moist sand. To prevent mold, special attention is paid to make sure the mixture is moist, but not wet. Treated "stratified" seeds are stored for two months in sealed plastic bags at refrigerator temperature before planting.

Learning how to treat Kentucky coffee tree seeds prior to planting by scarifying to break the seed coat. Just one of many "hands-on" workshops where we learn about plant propagation techniques.

Seeding and Transplanting: During February and March, volunteers gather in the greenhouse to plant appropriately treated seeds in a commercial soil mix that contains mycorrhizal fungi. These mycorrhizal fungi colonize the root system of growing seedlings and provide increased water and nutrient absorption capabilities to the seedling. Volunteers learn some of the special considerations that some native plant seeds require, such as the need for light to germinate, the addition of nitrogen-fixing bacteria needed by the seeds of many legumes, the need for bottom watering for very tiny seeds, and appropriate watering to encourage seed germination while discouraging the growth of mold and fungal gnats which proliferate with excess moisture. When seedlings are large enough, volunteers transplant them into individual pots in the mycorrhizal fungi-containing soil mix. The success rate for transplanted seedlings is always almost 100%, a good indication of the care and concern that these "baby" plants receive from our amateur horticulturalists.

A system for cataloging and labeling seedlings using recycled Venetian blinds was developed and implemented by volunteers.

B PLANT SALES

We conduct plant sales through various local non-profit organizations in the spring and fall of each year. During these plant sales, we display collections of the various native plants we grow in our nursery. Some of the native plants are arranged by groups, such as collections of trees and shrubs, grasses, pollinator plants, plants that tolerate shade, etc. This helps customers who are searching for a particular type of native plant. Each native plant is carefully labeled so customers can research the characteristics of each plant (such as height, bloom color, usefulness for native fauna, sun and moisture requirements) by referring to literature that is provided by us as well as through websites on their phones. Also, our knowledgeable volunteers engage customers in conversations about their favorite native plants. It is rewarding to see and hear the excitement of our volunteers as they promote their favorite native plants.

C NATIVE PLANT GARDENS

Several native plant beds in our community have been established and maintained by volunteers in our Master Naturalist Chapter. These demonstration beds have been planted in locations such as our local community college, elementary school gardens, state parks, local municipal parks, and several native beds located along our regional trail system. These plant gardens require a lot of volunteer labor and supplies to install the gardens, correctly label the plants, and, even more importantly, provide timely maintenance and replenishment of plants when necessary. The donation of native plants from the Master Naturalists Nursery reduces the cost of installing and maintaining these beds.

Several of the native demonstration beds have provided a testing ground for determining which plants are most resistant to feeding by whitetail deer. One of the most common requests we receive from customers is for information and availability of deer-resistant plants. While the demonstration beds illustrate the beauty and utility of native plants, the beds would be even more effective as educational tools if we provided more extensive labeling and additional information on the plants in these demonstration beds.

We learned a lot about soliciting funding and cooperation from a local municipality in order to install native plant beds along a hiking/biking trail.

D PRESENTATIONS

Spreading the word about native plants and native plant production to various audiences has been an enjoyable component of our program. Audiences have included Master Gardener groups, folks in our Master Naturalist Chapter, various garden clubs, potential commercial growers of native plants, etc. It is heartening to experience the growing interest in native plants and to play a part in this important endeavor through the activities of the Northwest Arkansas Master Naturalists.

USEFUL RESOURCES

Not a comprehensive list....just some of my favorites.

Lake to Prairie Wild Ones Germination Guideline for Native Plants

Explains the different seed treatments and has a wonderful long list of native plants and the specific seed treatments for those plants.
https://laketoprairie.wildones.org/wp-content/uploads/sites/12/2015/04/Seed-Germination-Instructions.pdf

Atlas of the Flowering Plants of Arkansas, Arkansas Vascular Plants Project

Publication of the Arkansas Vascular Plants Project. Gives native locations of plants in Arkansas by county.

Ladybird Johnson Wildflower Center

Lots of great information on many native plants. Simply type in the name of your plant followed by Ladybird, and find a wonderful trove of information on that plant. Very helpful for finding information on plant propagation of natives.
https://www.wildflower.org/plants-main

Prairie Moon Nursery

Lots of great information on many native plants. Very helpful for finding information on seed treatments for germination, and pictures of what the seeds look like for a particular plant.
https://www.prairiemoon.com/

Plant Finder, Missouri Botanical Garden

Great descriptions of native plants.
https://www.missouribotanicalgarden.org/plantfinder/plantfindersearch.aspx

Arkansas Native Plant Society

https://anps.org/

ABOUT THE AUTHOR:

Rose Gergerich grew up on a dairy farm in northern Wisconsin where she learned to grow and appreciate plants from her parents and grandparents. She is retired from the University of Arkansas in Fayetteville after a 30-year career as a professor in the Department of Plant Pathology with a specialization in virology. She lives out in the boondocks in southern Washington County, Arkansas with her husband. She is an active member of the Northwest Arkansas Master Naturalists and helped to form the Native Plant Team in that chapter. She enjoys working with fellow Master Naturalists in the greenhouse and nursery on her piece (peace) of land in the Arkansas Ozarks.

GROWING TOGETHER

AN OZARK WILD ONES QUARTERLY COLUMN

Welcome to Growing Together, a quarterly column dedicated to the medicinal and culinary plants of the Ozarks.

Nature's variety is vast. Her ability to provide everything to support human and environmental health is inestimable. Why, then, do we often see the same types of produce at local grocery stores and farmer's markets? Stores import food from around the country and world, and local farmers grow predominantly the same range of non-native foods. Where are the native foods or medicines from our local terroir?

Food and medicine have become commercially centralized at the expense of local independence and security. As a people, we've let the empowering knowledge of the land fade away, and with it, our ability to nourish and heal ourselves without paying someone – likely a wealthy corporation – for the privilege. As further insult to indigenous flora, our broader society equates native plants with noxious weeds. Weeds that mar perfectly manicured grass lawns and as such, are targeted for removal, most often with chemicals that damage our local ecosystem.

It's time to change that. Every quarter, I will introduce you to a native plant: a bit of the botany, growing and harvesting, and my favorite part – the ways the plant can be used to support and enhance health. It is my hope that this column will help build awareness of the incredible usefulness of native plants and inspire you to nurture their presence in your garden, yard, and community.

Let's grow together!

Jasmine Dorn
Wild Ones, Ozark Chapter
Member-at-Large and Newsletter Designer

NATURE ITSELF IS THE BEST PHYSICIAN.

-HIPPOCRATES

JERUSALEM ARTICHOKES

sunflower trees with food

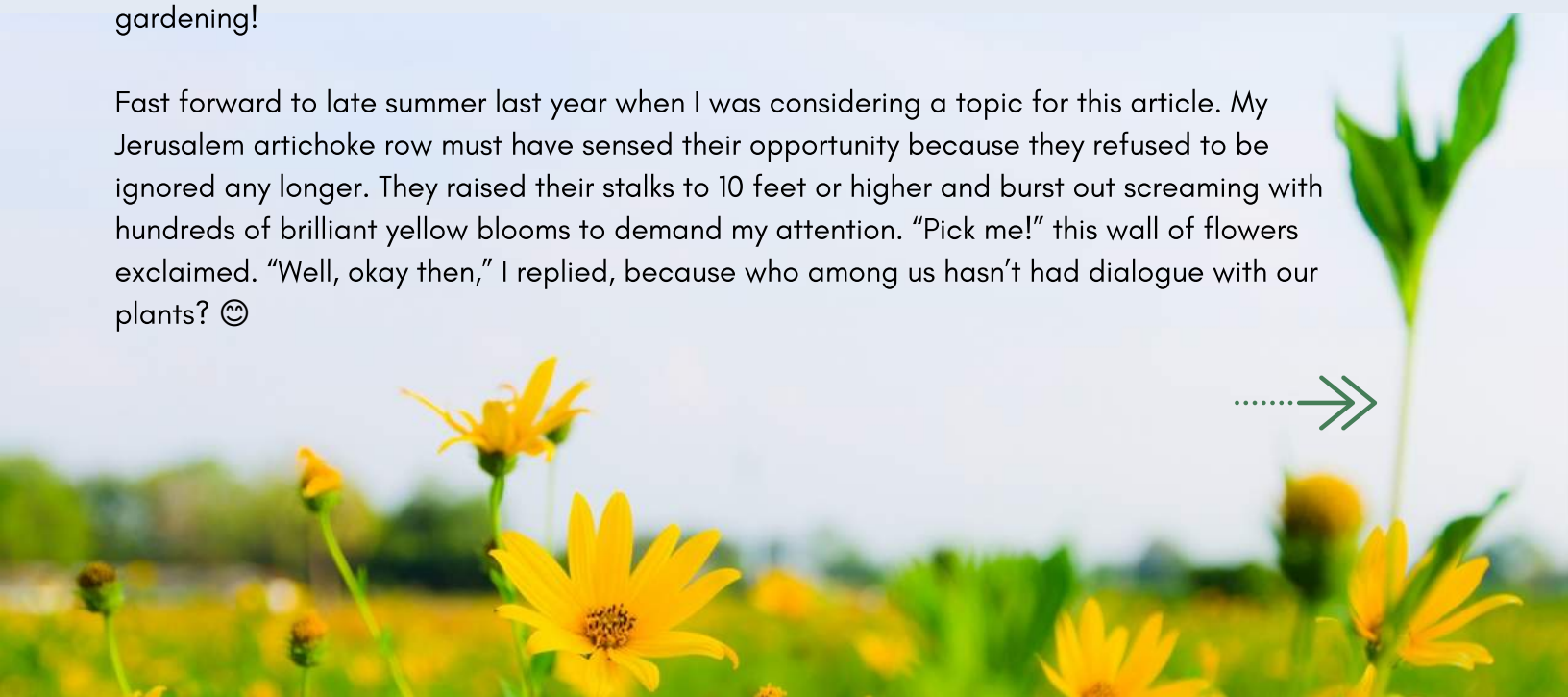
by Jasmine Dorn, an Ozark Wild One

My husband Joe and I have been on a mission to rewild our land and take steps toward self-sufficiency over the last few years. Foot by foot, we're removing invasive plants and (re)introducing native plants in their place. As with everything I plant, I do preliminary research on growth needs and human and ecological benefits, then defer my inevitable deep dive until just before my first harvest.

When I learned that Jerusalem Artichokes are a native perennial and nutrient-dense food, that they're great for pollinators, gardens, and the native ecosystem, and that they require little to no maintenance, that's all that I needed to know. I hastily bought some starts and planted a row of 20 or so tubers a couple years ago in my most favorite gardening method, STUN: *S*heer *T*otal *U*tter *N*eglect.

That means I dropped them in the ground and forgot about them for a couple years. That's *my kind* of gardening!

Fast forward to late summer last year when I was considering a topic for this article. My Jerusalem artichoke row must have sensed their opportunity because they refused to be ignored any longer. They raised their stalks to 10 feet or higher and burst out screaming with hundreds of brilliant yellow blooms to demand my attention. "Pick me!" this wall of flowers exclaimed. "Well, okay then," I replied, because who among us hasn't had dialogue with our plants? 😊



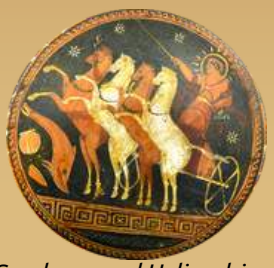
You might be saying to yourself, "Hey, those look like sunflowers," and you'd be right. Jerusalem artichokes (*Helianthus tuberosus*) are neither from Jerusalem nor are they artichokes (which are in the thistle family), but instead are a species of sunflower (*Helianthus*).

As with many common plants, different people know them by different names locally and globally. Jerusalem artichokes are also known as: sunchoke, sunroot, earth apples, Canada potato, girasole (Italian), topinambur (German), and my personal favorite "fartichokes," but I get ahead of myself.

Before I dive in, let me thank you, *Helianthus tuberosus*, for making this quarter's topic selection easy, for being a delight to my eyes, a food to our winged friends, a windbreak to tender plants, a fortress that crowds out invasive plants with your statuesque stems and tasty tubers, for helping us retain the water that falls on our land, and for being a wildly nutritious, delicious, and versatile food that me and my family can depend on for years to come.

Friends, come join me in an enlightening exploration of one of our most little known but most useful native plants, the delightful Jerusalem artichoke.

ETYMOLOGY NERDALERT



Greek sun god Helios drives his chariot across the sky.

Genus: Helianthus
hḗlios (ἥλιος, sun) +
ánthos (ἄνθος, flower)
Species: *tuberosos*
tūberōsus (with tubers)

"SUNFLOWER WITH TUBERS"

Photo: Jerusalem Artichoke disk flowers. Photo by author. 2019.

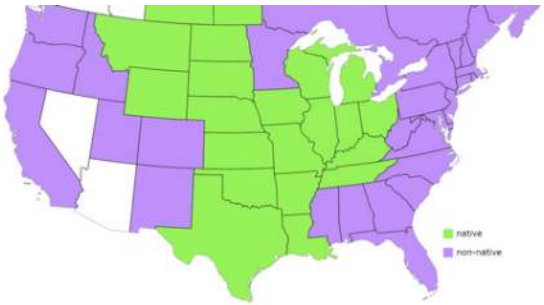
Plant Overview

geography & history

Jerusalem artichokes are native to the Americas and, in North America, specifically to the central states -- though they've been introduced to both coasts.

In Arkansas, they mostly occur across the northern half of the state and are scattered in several counties.

Native Americans have a long history of cultivating this plant as a valuable food source for times when game was scarce, and especially along seasonal migration routes and during winter.

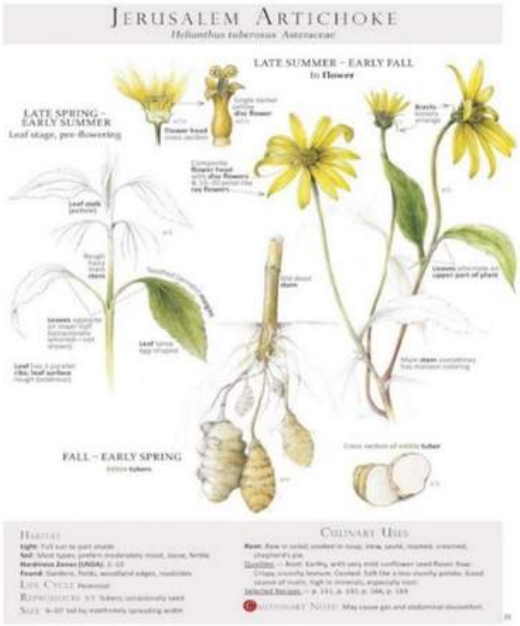


Source: https://gobotany.nativeplanttrust.org/species/helianthus/tuberosus/

Just as different plants were brought to America from other countries and became invasive as they escaped cultivation, the explorer Champlain took our Jerusalem artichoke to France in the early 17th century. Over the years, Europeans increasingly used it use as human food and livestock feed. It became mainstream in Europe after the food scarcity following World War II due to its ease of cultivation and fast production of large amounts of food.

And now ... it's considered an invasive species in Europe.

aboveground parts: stems, branches, and leaves



Source: Falconi, Dina. Foraging and Feasting p35

Above ground, Jerusalem artichokes resemble ordinary sunflowers, especially when in bloom. They tend to be taller than common sunflowers, up to 12 feet tall with smaller flowers. The stem is thick, rough, often reddish, with multibranched stalks.

The leaves are ovate-lanceolate and coarsely-toothed. They're opposite on the lower half of the plant and alternate on the upper. Leaves are coarse and medium-green on top with the bottom of the leaf smoother and lighter in color.

Jerusalem artichokes (foreground right) bloom at the same time as goldenrod (background left). Photo by author, 2019.

Jerusalem artichokes have composite flowers, which are many flowers gathered together in an inflorescence, typical to other plants in the aster family. As with all sunflowers, the flowers are actually a combination of a central disk flower and perimeter ray flowers. The yellow flower heads are smaller and more abundant than their sunflower relatives. Depending on the maturity of the plant, it can produce up to several dozen flower heads in a month. The flowers bloom in late summer/early fall, and in my gardens, they bloom at the same time as another favorite late summer native, goldenrod.

The above-ground parts will keep reaching for the sun and throwing continuous blooms until the plant dies back in late September or October. The fertilized disk florets produce grayish achenes (one-seeded fruits that do not spontaneously open to release seeds when mature).

underground parts: stems, branches, and leaves

Unlike common sunflowers, Jerusalem artichoke seeds are too small to make satisfying snacks for anything but pollinators. Humans (and livestock) must dig underground for our bounty, and the brilliant yellow of these flowers in full bloom signal that tubers are being produced at the end of their long rhizomes, quietly out of view.

The edible tubers of *Helianthus tuberosus* grow close to the surface. They resemble ginger root and can either be irregularly shaped or have rounded edges, and the color of the tuber's thin skin ranges from pale white to reddish-brown. Tubers reach maturity in 110-150 days, depending on variety and growing conditions, and they can be harvested in late fall or early spring.

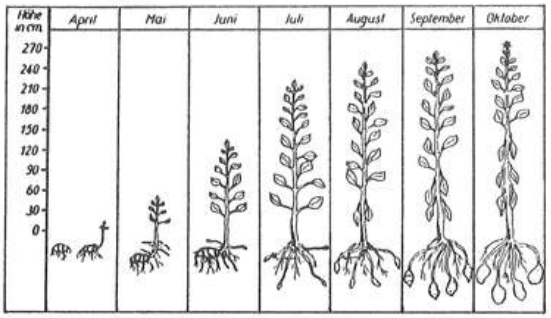


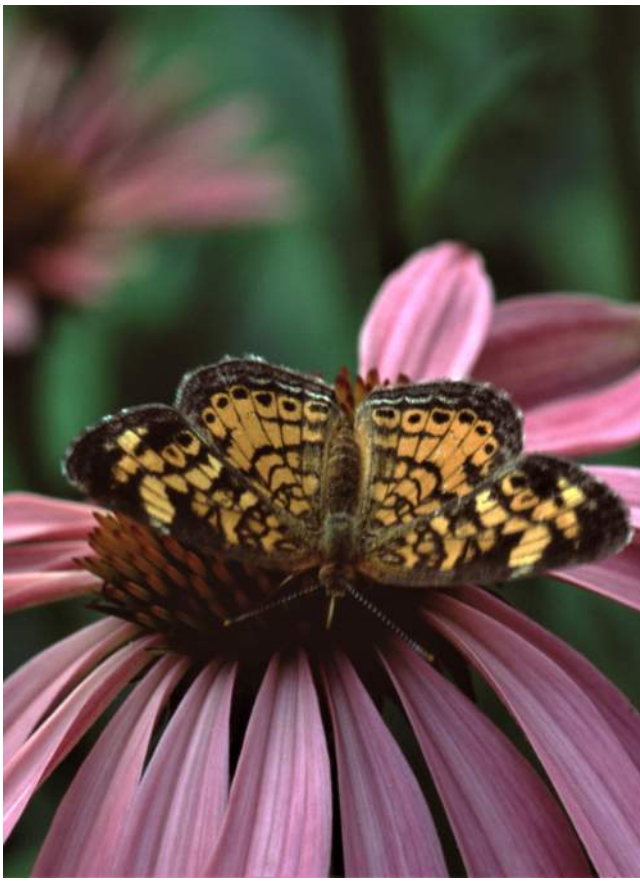
Abb. 1: Entwicklung einer Topinamburpflanze im Vegetationsverlauf (nach FISCHNICH & PÄTZOLD 1954)

Source: https://www.researchgate.net/figure/Development-of-a-Jerusalem-artichoke-plant-in-the-course-of-vegetation-after-FISCHNICH_fig1_271503913

benefits of jerusalem artichokes

Before I share how I use Jerusalem artichokes, I want to share some of the many reasons why you might want to include these native gems in your gardens and in your diet.

wildlife & garden value



Jerusalem artichokes are a sweet gift to late-season pollinators. Because they start blooming when everything else is starting to die back, they are an important source of nectar for pollinators from late summer through early fall.

I witnessed all sorts of winged things visiting my Jerusalem artichoke row from July through October, and learned they are a larval host plant for the Silvery Checkerspot (*Chlosyne nycteis*).

Aside from being food for pollinators, they also serve impressive functional roles in garden spaces.

Their dense tuber structure can be used to manage water flow. They can be used on steep slopes or embankments in combination with other long-rooted plants to avoid surface runoffs in heavy rain (Holzer 61). This was the deciding factor for my site selection.

Our Rose of Sharon thicket is along a slope that is particularly affected by runoff during periods of heavy rain. I planted Jerusalem artichokes as a curved boundary at the low end of the thicket with the hope that their dense root and tuber structure would capture and/or slow the runoff. The thicket appeared to be less affected by the summer's dry spells than in years past.

Jerusalem artichokes can act as "fortress plants" because their thick and tall growth above and below ground can block the sun and crowd out and roots of nearby invasive plants (Hemenway 41). Their sturdy, tall stems can serve as windbreaks or shelterbelts for more delicate plants (Hemenway 41, 137).

Jerusalem artichokes are also perfect candidates for the permaculture food forest root layer, along with other shallow rooted foods such as garlic, onions, or potatoes. This crop can be overplanted in early spring with other cover crops when the plants are beginning to regrow.

easy to grow

Did you catch earlier when I said Jerusalem artichokes are considered invasive in Europe?

That alone should tell you how easily they grow and spread. For the record, I call native plants with aggressive growth habits "aggressive," and leave the "invasive" label for introduced, non-native species that grow aggressively. Well, Jerusalem artichokes are … aggressive.

Being a native plant, Jerusalem artichokes are already adapted to our environment and are exceptionally hardy, pest and disease resistant, and thrive in our soil and unique (wacky!) weather conditions. They don't even require fertilizer or watering. I literally dropped some tubers with eyes (think potato) into the ground a couple of months before last frost, spaced about a foot apart, covered with regular topsoil and wood chips, hosed them down once, and forgot about them for a couple of years. Looking back at that moment now, "plant it and forget it" feels like the equivalent of a gardening mic-drop.

Jerusalem artichokes reproduce primarily by tuber; believe me when I say it's near impossible to find all of the tubers at harvest time. They will come back year after year and will continue to spread. For this reason, some gardeners suggest growing them in a bounded location like a container or raised bed, or in an area where you want them to grow thick -- like where I planted them to help slow the flow of water over our land. Me? I control aggressive spread by harvesting the tubers for food.

Getting started is easy. Find a sunny spot with moist but well-drained soil. Drop tubers. Cover. Water deeply once. Forget about them until one late summer day in the future when their vibrant blooms scream for your attention.

Part shade will work too, but for the most abundant blooms and tubers, full sun is better. The soil should not be waterlogged because the plant will not likely survive in those

conditions, and if it does, the tubers growing in saturated soil will likely not be good eats.

Remember that they grow tall and have dense root systems, so unless you plan carefully, they may crowd out the sun and roots of other desirable plants. They may fall over under the weight of their sheer height and numerous blooms like this 10' stalk that decided to lay down as it kept pushing more and more flowers.

Fallen over under the weight of its own flowers. Photo by author. 2019.

To be abundantly clear, the most demanding part of growing Jerusalem artichokes is selecting the site with a plan to control spread if need be, and to be mindful of your current and future garden plans for the surrounding area. The rest is easy as precision harvesting and eating your way to better health.

While researching for this article, I'm excited to have discovered a Native American polyculture tradition previously unknown to me. Many of us are already familiar with the Native American food production method called the "Three Sisters." In that method, corn, beans, and squash are grown together in synergy: corn serves as a ladder, beans climb the corn and fix nitrogen, and squash leaves shade out weeds. The Three Sisters have to be replanted every season.

In a lesser-known tradition, the "Three Brothers" is a perennial food garden that's really, really exciting to me. Groundnuts (*Apios americana*) replace the beans in the Three Sisters setup, wild ginger (*Asarum sp.*) replaces the squash, and Jerusalem artichokes (*Helianthus tuberosus*) replace the corn (Jadrnicek 48). Oh yes. This is going to happen THIS … YEAR. 😊

Now that we know how Jerusalem artichokes can benefit the wildlife and can be enacted as a functional tool in our gardens, we can turn to my favorite topic: how it can improve human health.

tuberlicious! the mind-boggling nutrient powerhouse of jerusalem artichokes

Anyone who knows me (or meets me!) knows that I'm passionate (obsessive!) about nutrition. As a plant-based eater on a perpetual quest to find more varieties of nutrient-dense whole plant-based foods to play with, I grew giddier and giddier the more I learned about Jerusalem artichokes, because here's a ridiculously easy-to-grow perennial food that can actually make people healthier with every bite.

Jerusalem artichokes are a low glycemic food and are often called the "diabetic's potato." There are even Jerusalem artichoke-based sweeteners that are said to be safe for diabetics! (Curious? Do a web search for "topinambur syrup helianthus"). With a Glycemic Index of 32, they can be compared to broccoli, napa cabbage, and artichokes.

Though the Jerusalem artichoke is commonly considered a drop-in substitute for potatoes, there's a drastic difference in its composition. Instead of storing energy as starch as potatoes do, Jerusalem artichokes – like other members of the Asteracaea family, store it as inulin (not insulin).

Agitating the tubers in a bucket of water is an easy way to clean soil from between the nodules. Photo by author. 2019.

Inulin is a water-soluble fiber that is mostly indigestible to humans. While that may not sound ideal, these water-soluble fibers feed the healthy bacteria in our guts and are known as prebiotics. Think of **pro**biotics as reinforcing the good soldiers in your gut biome with calvary, and **pre**biotics as their food rations. Prebiotics act as a substrate for the beneficial bacteria that colonize our gastrointestinal tracts.

And through the care and feeding of our microbiome with inulin, we support our biome's efforts of fighting harmful bacteria in the intestines, preventing constipation and promoting homeostasis in our microbiome.

Cleaned red and white tubers, ready to eat raw or prepare. Photo by author. 2019.

When our biome is balanced, our immune systems are better able to defend against harmful viruses and bacteria, and our bodies are able to efficiently break down, use, and eliminate the waste products of the food we feed it.

Aside from the many benefits of inulin, the tubers are loaded with nutrition. An extremely low-calorie and low-fat food containing more potassium than over 80% of other foods, they're also rich in iron which, when combined with its copper content, aids the formation of new blood cells. Their high potassium and low sodium content contributes to improved blood pressure, while their high fiber content is credited with reducing inflammation, attaining good cholesterol levels, and improving digestion.

Shall I continue? Sure, why not! They're also rich in Vitamins C and B1 and are good sources of other micronutrients such as manganese, phosphorus, and selenium.

Words of gustatory caution: the same inulin that feeds beneficial bacteria can cause gas, bloating, or even abdominal pain and diarrhea for people with a sensitive digestive tract. They're nicknamed "fartichokes" for good reason (gas is a natural byproduct of feasting microbes), but this reaction can be reduced or mitigated with different food preparation techniques. If you have a sensitive digestive tract, it's advisable to start with very small portions and listen to your body carefully as you gradually increase your portion size. Also, introduce them slowly or avoid them if you are allergic to artichokes, lettuce, dandelion, sunflower, radicchio, or chamomile.

Onward to the Kitchen!

Not only are Jerusalem artichokes nutritious, but they're a new kind of delicious I never tasted before.

They have an earthy, light taste, but with a mild, nutty, almost sunflower seed flavor that's mildly reminiscent of water chestnut. They can be eaten raw or cooked and are one of the most versatile culinary ingredients I've ever had the joy of playing with.

The fragrance is spectacular. Some sources describe varieties of Jerusalem artichokes as having a smoky aroma, while others only refer to its earthy fragrance. From my experience over several harvests before and after first frost, I'll say that the harvest before first frost yielded tubers that developed that delectable smoky aroma while harvests after first frost did not.

In my first pre-frost harvest, I pulled out over 12 pounds of tubers from two plants. After cleaning the soil from all the nooks and crannies (think ginger straight from the ground), I laid out my bounty to dry while reading up on what other people have done with them to give me an idea of what I wanted to do.

Over the next couple of days, a tantalizingly savory, smoky aroma started to fill the house, firing up my brain and triggering my salivary glands. This magnificent fragrance continued to magnify around the tubers until this bewitching aroma kept drawing my nose and attention to the kitchen like some Looney Toon cartoon, just like the flowers did when they burst forth to claim my attention in the field. In the harvests after first frost, I expectantly waited for that glorious smokiness to greet my nose, but alas! The earthy fragrance lacked any trace of smokiness.

And once I started experimenting with these fragrant, crunchy, salubrious lumpy knobs of nutrition, the chef in me fell as hopelessly in love with this plant as a culinary ingredient, just as the gardener in me fell in love with its beauty and function in the field.

And now we've come to some of my favorite ways to use Jerusalem artichokes that feature their versatility.

raw innocence

The texture of the raw tuber is similar to a water chestnut, jicama, or young raw potato: crisp and crunchy. They're wonderful raw with just a sprinkle of salt, grated or shaved in salads, or, in my new raw favorite, rolled up with complementary flavors and nutrition in vegan sushi rolls.

Chef tip: toss sunchokes in an acid like lemon juice or vinegar to prevent oxidative discoloration.

Jerusalem artichoke, squash, carrots, red onion, green onion, spinach, and sweet brown rice rolls, wrapped in nori. Food and photo by author aka Chef Jazzy D. 2019.

metamorphosis by fermentation

A great way to enjoy Jerusalem artichokes raw, while avoiding the potential gastrointestinal discomfort that some may experience, is to ferment them -- which is essentially about creating an environment for beneficial microbes to thrive. These bacteria break down the inulin in Jerusalem artichokes into fructose, making them more easily tolerated by those with sensitive digestive systems.

Jerusalem artichokes, beets, carrots, ginger, garlic, turmeric, shiitake mushroom, sea salt, and the key ingredient, time, is all that's needed to convert these raw ingredients into probiotic goodness. Food and photo by author aka Chef Jazzy D. 2019.

heat transformation

Jerusalem artichokes are so versatile that they can be prepared with every cooking method I can think of. Boil with (or instead of) potatoes and cauliflower for a unique tuber + cruciferous mash. Bake them like potatoes. Slice, salt, and fry them for chips. Use them as a substitute for water chestnuts in a stir-fry. In other words, go to town! Broil, simmer, poach, blanch, steam braise, roast, bake, broil, grill, griddle, or sauté to your heart's (very literal) delight!

Jerusalem artichoke lentil burgers for the win! Link to recipe in Additional Resources.
Food and photos by author aka Chef Jazzy D. 2019.

Bottom line, you are limited only by your imagination.

The most important thing to remember when using Jerusalem artichokes as a potato substitute in established recipes is that their lack of starches and high-water content requires that the recipes be adjusted.

Those of you with sensitive digestive systems should cook Jerusalem artichokes for several hours to allow the heat to convert the inulin to fructose and make for a less gassy meal outcome.

Got a firepit or coal grill? Try a method similar to that of the Native Americans: toss the tubers onto hot coals covered by dirt or leaves, and let them cook that way all day.

"Frying" intentionally omitted. Standing request from human circulatory systems worldwide ☺

Conclusion

I hope this introduction to Jerusalem artichokes inspires you to add this native beauty to your landscape and to your diet. In the short time that I've been growing it and playing with it in my kitchen, it's become a new favorite staple, made even more awesome because it's a stunning plant by summer that gifts us with perennial nutrient-dense food in winter, when all other crops are done for the season.

I invite you to continue your journey into the realm of the humble Jerusalem artichoke by exploring my list of select resources below.

Ohhhh, and I may not yet have mentioned that I never tasted Jerusalem artichokes my first harvest. This journey was a leap of faith that will pay dividends for years to come.

Additional Resources

botany & general

- Arkansas Native Plant Society. https://anps.org/2017/12/29/know-your-natives-jerusalem-artichoke/
- Denison, Edgar. Missouri Wildflowers. Missouri Department of Conservation. Jefferson City, MO. 2017 p. 159
- Maine Organic Farmers and Gardeners Association. http://www.mofga.org/Publications/The-Maine-Organic-Farmer-Gardener/Spring-2003/Jerusalem-Artichoke

growing & foraging

- Hemenway, Toby. Gaia's Garden. Chelsea Green Publishing. White River Junction, VT. 2009.
- Holzer, Sepp. Sepp Holzer's Permaculture. Chelsea Green Publishing. White River Junction, VT. 2004.
- Jadrnicek, Shawn. The Bio-Integrated Farm. Chelsea Green Publishing. White River Junction, VT. 2016.
- Self Sufficient Me. 5 Tips How to Grow a Ton of Jerusalem Artichoke/Sunchoke. https://www.youtube.com/watch?v=0MTjqwghYMA

culinary & nutrition

- Apelian, PhD, Nicole and Claude Davis. **The Lost Book of Herbal Remedies**. The Healing Power of Plant Medicine. 2019.
- Food Revolution Network. **Everything You Need to Know About Jerusalem Artichokes**. https://foodrevolution.org/blog/jerusalem-artichokes/
- Full of Plants. **Jerusalem Artichoke Lentil Burgers**. https://fullofplants.com/jerusalem-artichoke-lentil-burgers/
- Grow Forage Cook Ferment. **How to Cook Jerusalem Artichokes**. https://www.growforagecookferment.com/how-to-cook-jerusalem-artichokes-sunchokes/

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About the Author

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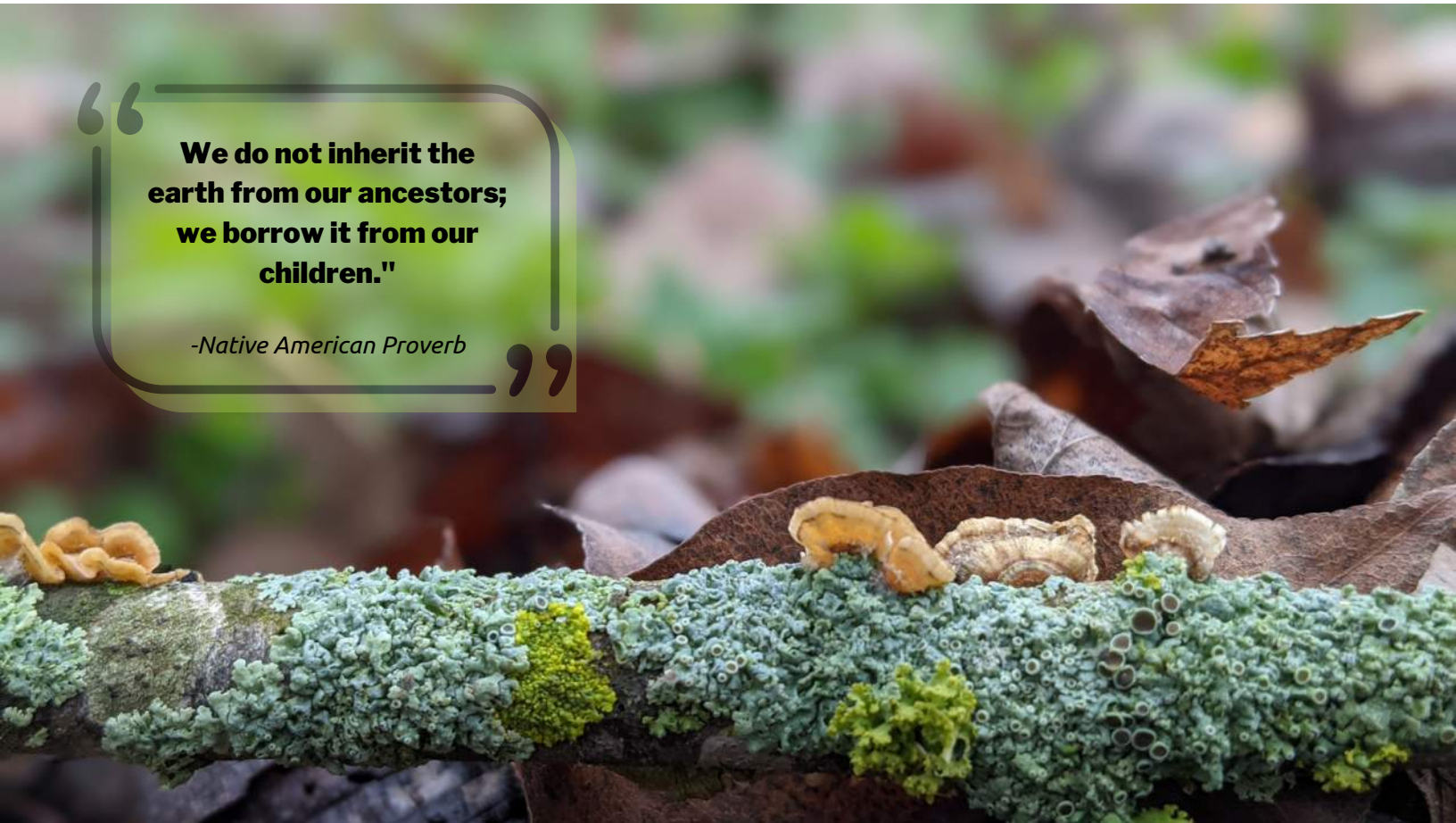
"Life starts small". Photo by Jasmine Dorn. 2020.



The Arkansas Native Seed Program is pleased to announce we have another partner

Pollinator Partnership has joined forces with the Arkansas Natural Heritage Commission, Arkansas Native Seed Program, Audubon Arkansas, Arkansas Game and Fish Commission, Arkansas Monarch Conservation Partnership, and Quail Forever to expand **Project Wingspan** into Arkansas and help us increase the quantity, quality, and connectivity of wildlife habitat through the collection and distribution of native wildflower seeds.

Project Wingspan is a short-term, grant-funded initiative that will help our collective projects build the capacity of our volunteer native seed collection network and further enhance the landscape for imperiled pollinators and other wildlife that rely on native wildflowers and habitats in which they are found. Project Wingspan will also provide free online training resources in seed collection and habitat enhancement best management practices.

To learn more about this project visit: https://www.pollinator.org/wingspan

Questions? Let us know!

Project Wingspan - Sara Wittenberg: sw@pollinator.org
Audubon Arkansas - Jonathan Young: jyoung@audubon.org
Arkansas Native Seed Program - Jennifer Ogle: jennifer.ogle@arkansasnativeseed.com