



Gaillardia

Oklahoma

Native Plant Society

The purpose of the Oklahoma Native Plant Society is to encourage the study, protection, propagation, appreciation and use of Oklahoma's native plants.

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COPY AND ART DEADLINE

FOR NEXT ISSUE IS

February 5th, 2018

"A supposedly daring insight came up, disguised as a question: Dr. Cole, aren't humans the most invasive species of all? She'd fielded that one many times before, during public lectures and even in her days as a teaching assistant {...} 'I'm not unsympathetic to that line of thinking she answered, 'but even if it's true, we're also the only species in any position to do anything about it.'"

Joe Pitkin, Analog Science Fiction and Fact, June 2012

Upcoming Events/Activities

(check the ONPS website for more details)

Fabulous Wildflower Fridays, at 5:30 the third Friday of each month at Panera Bread at 5601 E. 41st St. (reopened)

December 4 NE Chapter at the TGC, 6:30 snacks, 7:00 meeting. Abby Moore, Director Bebb Herbarium, "Plant Characteristics"

March 5 NE Chapter at the TGC 6:30 snacks, 7:00 meeting "Welcome to a Virtual Bioblitz"

Save the Date February 3rd, Indoor Outing hosted by Central Chapter



Juniperus virginiana Red Cedar Photo: Melody Hobbs

WELCOME TO THESE NEW MEMBERS

Linda Adkins	Tulsa
Ashley Anderson	Yale
Suzanne Kitchens	OKC
PJ & David Moore	Park Hill
Brooke Morris	OKC
Denise & Jim Palmer	OKC
Crystal Sizemore	Jones
Laura Chalus	Tulsa

DONATIONS

Marion Homier & John Cleal	General Fund
Ellen Jonsson Y Mohanty Rashmi	General Fund
Mary Korthase (Memory of Mary Price)	
	Harriet G. Barclay Fund

ATTENTION ALL PHOTOGRAPHERS

Your nature sightings are needed.

The ONPS Photo Contest is changing for 2017. The Special subject is "Host Plants". These are plants which are hosts to butterflies, bees, flies, birds, mammals, etc., whether it be as a food source, or housing or any other use nature has developed.

The entry deadline is December 1, 2017. Other changes include no entry fees, and winners will only be acknowledged for their excellence and appreciated for sharing their experience. Winners will be announced at the Indoor Outing in February 2018.

Watch our website and Facebook page for more details about entering.

Mycology chapter member Nancy Hamill is planning a trip to the Austin area in the fall of 2018 to visit the Lady Bird Johnson Wildflower Center and Selah with possible tours to Pendergast Falls State Park and Zilker Gardens. Tentative dates are October 25-28 and take the Amtrak from Oklahoma City to Austin.

We will keep you updated!

President's Paragraph

Joe Roberts

The last cold front has all but wiped out any remaining flowers in our garden and in the field. The vibrant colors of spring and summer have been replaced by the more demure ones of autumn, my favorite season.

This has been an eventful year for the ONPS, with lots of interesting activities and speakers. I hope you were able to join us often. Native plants, and their pollinators, seem to be turning into a hot topic everywhere. Next year promises to bring even more opportunities to enjoy natives and the company of other ONPS members. Mark your calendars for the Indoor Outing in Norman, OK on February 3.

The ONPS Board finally wized up to my attempt to become dictator-for-life of the society, so I am afraid I must retire as President at the end of this year. The job has sometimes been difficult, sometimes fun, but always worthwhile. I have never volunteered for any position in any organization before, and I have never regretted for even one minute volunteering for positions in this society. It is rewarding, educational, and important. What could be better? I encourage everyone in ONPS to consider volunteering when and where you can, or supporting those that do. I will still be around in my new role as Past President, and Bruce Smith will be taking the wheel as President in 2018. Hope to see you soon, and Happy Holidays to all!

From the Editor

The focus for this Gaillardia issue is something we all love to hate—invasive plants. Perhaps they were planted by a bird or blew in with a tornado or came as ballast in a ship or are escapees from the horticultural industry. In many cases they were planted for agricultural purposes. The battle against these thugs may be unwinnable, but as gardeners we must try our best to eradicate them when possible so our native flora and fauna can thrive.

Under the ONPS umbrella is the organization called the Oklahoma Invasive Plant Council. This group works to raise awareness and educate the public about these plants which compete with our native flora and impact the environment in costly and detrimental ways. They have published a poster listing the Dirty Dozen invasives in our state and in these pages you will find articles about some of these. The remainder will be published in the spring newsletter. There are actually thirteen on the Dirty Dozen list and we have added Callery Pear as one which is rapidly becoming out of control.

Botanist's Corner

Dr. Karen Hickman, Oklahoma State University

Terminology associated with invasive species can be extremely confusing and commonly misused. Through my years of teaching an ecology of invasive species class, I have found it easiest to start the students with very clear definitions, allow them time to firmly grasp those definitions and then move the discussion towards the exceptions. Noxious, invasive, nuisance, encroacher, and native-invader are five terms that need to be clearly defined and before further discussions into the important concept of invasive species can take place.

Noxious species are typically referred to as noxious weeds. These species are legally defined by federal, state, and local legislation. Noxious weeds cannot be bought, sold, traded, transported or possessed, and landowners are legally required to implement some sort of control practice (e.g. biological, mechanical, or chemical control) if found on their property. Most noxious weeds have historically been associated with agricultural production, while more recently, species listed as noxious weeds include species we have identified as invasive or nuisance.

The term nuisance is typically used in reference to aquatic nuisance species, or ANS. These species are found to be either aquatic species or species that invade areas close to aquatic systems. Species identified as ANS are also legally defined, typically at the state level through the official state ANS Management Plans. In Oklahoma, an aquatic nuisance species is one that poses both ecological and economic threats to native aquatic ecosystems. Species identified as ANS cannot be bought, sold, traded, transported or possessed. Within the past 20 years or so the federal government required states to have official ANS management plans to be eligible for federal funds to battle those aquatic nuisance species. These management plans serve as guidance documents to implement educational outreach, research, species monitoring, and prevention of spread.

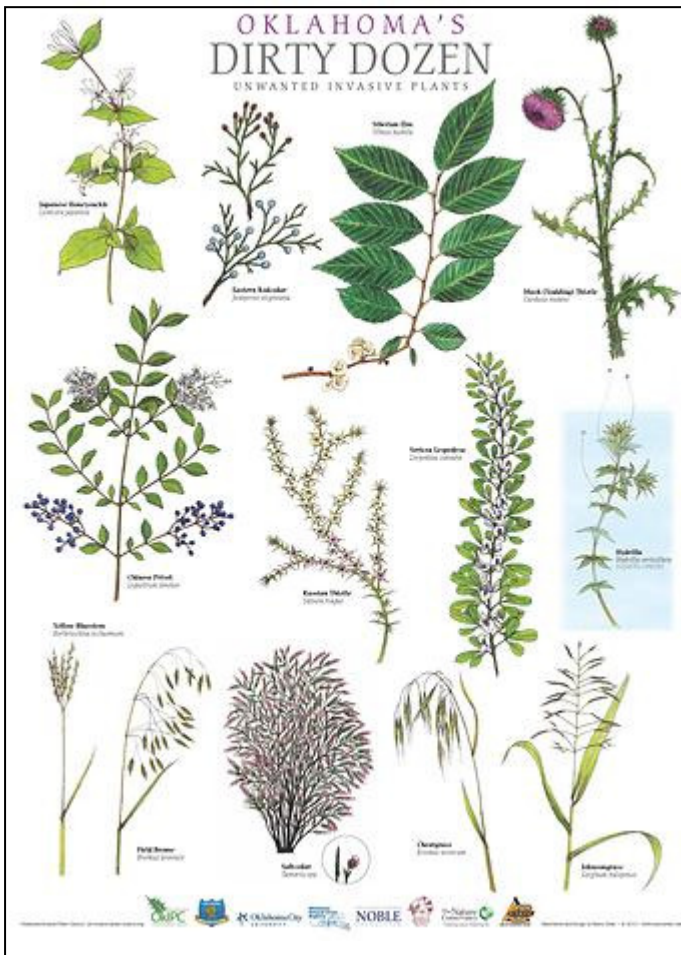
In the United States, President Clinton's Executive Order 13112 provided the first formal definition of an invasive species: *"an alien species which does or is likely to cause economic or environmental harm or harm to animal or human health."* While both Presidents George W. Bush and Obama modified this executive order, this federal definition of invasive species remains in place. Based on this definition, used in the discipline of invasion ecology, "invasive species" is a descriptive, situational-dependent term. To be considered invasive, a species must have been introduced by humans (intentionally or accidentally), subsequently established a self-reproducing population (i.e. naturalized), dispersed to secondary locations and established other sustainable populations, and have been shown to cause an impact such as harm to human health, harm to the economy, or harm to the environment.

This definition is "situationally dependent" because a species might meet all of these requirements in one location and not in another, or experts may disagree about the extent of impacts or likelihood of causing harm. The definition is descriptive, because unlike "noxious" and "ANS", "invasive" species does not require any particular management and unless they are also on noxious weed and or ANS lists, an invasive species can legally be bought, sold, possessed and traded. Importantly, however, an invasive species on the noxious weed list must also be controlled.

Now, let's move to the terms which I try to use very carefully in the first conversations I have with someone about invasive species: **encroachers and native-invaders**. To clarify, noxious weeds, aquatic nuisance species and invasive species can be non-native (i.e. alien, exotic) whereas the terms encroaching and native-invader are more specifically used in reference to native species that have become problematic. A common example would be mesquite in the southwestern part of Oklahoma. Shifting management practices have prompted further range (or population) expansion and increased density of mesquite in some areas. Since it is a native species and is at undesirable levels in some areas, the term encroaching could be used as a more acceptable term for those wanting to protect the native species. To my knowledge, mesquite hasn't been planted commonly by humans, prompting its expansion, rather, management practices (e.g. overgrazing) have been instrumental in its expansion.

In contrast, another problematic, native Oklahoma species, Eastern Redcedar, has been extensively planted by humans in habitats from which it was commonly not found. The success of this tree is not only tied to its extensive planting throughout Oklahoma, but also to the absence of fire in the prairie landscape. For many native plant enthusiasts, it is difficult to apply the term "invasive" to this native tree. That is why, when I first start teaching a group about invasives, I use the terms encroaching and native-invader when referencing Eastern Redcedar. However, it is important to re-emphasize that invasive species are 1) introduced by humans, intentionally or accidentally; 2) capable of establishing and spreading; and 3) cause an impact, such as harm to human health, harm to the economy, and/or harm to the environment. Given the extensive planting of Eastern Redcedar in prairie landscapes; reduction in grassland obligate species in the presence of Eastern Redcedar; reduction in forage production for livestock; increased fire intensity in the presence of Eastern Redcedar, invasion ecologists can easily and correctly apply the term native-invader (or just invader) to Eastern Redcedar.

As I typically say in my classes, "what a tangled web we have" when discussing invasive species. Control of invaders can be an emotional issue, and even which words are used can result in many differences of opinion. Regardless of one's position on any particular invasive species, we must be careful to correctly use the appropriate terminology in our discussions.



To receive a free poster contact the Oklahoma Invasive Plant Council at www.okinvasives.org. The website also lists species which are on the watch list and provides information about how all of us can help by becoming citizen scientists.

Color Oklahoma Pearl Garrison

Christmas and Color Oklahoma? They go together when you start wondering what to give as Christmas presents. Who wouldn't want one of the beautiful vehicle tags? As a bonus, every tag you purchase from the state generates \$20 for the purchase of native wildflower seeds to be planted along state highways. Details are at www.ok.gov/tax. Follow the trail to specialty license plate forms. Each costs \$38. Learn more about Color Oklahoma at coloroklahoma.org.



Connie Murray Awarded the 2017 Anne Long Service Award

A Charter member of the Society, Connie has had a long and distinguished career as educator, leader and proponent of all things related to Oklahoma's biodiversity. Connie's record of accomplishments on behalf of ONPS includes two terms on the State Executive Board as a Director-at Large, three years as State Vice President, and two years as State President. She currently serves as State Secretary. She also held the chairmanship of the NE Chapter on two separate occasions. Her lengthy career in the biology department of TCC provided students with expert knowledge and understanding of botany, ecology and environmental matters. A founding member of the Flora of Oklahoma project and an active participant in the activities of the Oklahoma Academy of Science, Connie continues to demonstrate her appreciation for furthering the state's biological and botanical well-being. The gaillardia-embossed glass plaque symbolizing the Anne Long Award was presented to Connie during the ONPS Annual Meeting in Stillwater on September 16 by Sue Amstutz, Chairman of the Awards Committee.



Bothriochloa ischaemum* var. *songarica

King Ranch Bluestem
Rahmona Thompson

In the 1980's, I noticed a grass in Stillwater that I had not seen in Oklahoma. It was King Ranch bluestem *Bothriochloa ischaemum* var. *songarica*). This species was brought to OSU in the 1950's to study its potential as an Oklahoma forage grass. Now it has been collected in at least 38 Oklahoma counties (Oklahoma Vascular Plants Database). SEINet.org indicates its "twin", yellow bluestem (*B. ischaemum* var. *ischaemum*), has not been officially documented in Oklahoma but shows that this variety is in neighboring Texas and Kansas counties.

The genus *Bothriochloa* consists of old world bluestems while new world bluestems are placed in the genera, *Andropogon* and *Schizachyrium*. A native of Asia, *B. ischaemum* var. *songarica* has hairy stem (culm) nodes while var. *ischaemum* with glabrous nodes has native populations ranging across Europe, Africa and Asia. All are C₄ bunch grasses with an inflorescence of rames (a pair of spikelets, one sessile and the other pedicellate). *Bothriochloa ischaemum* has slender culms more similar to silver bluestem (*Bothriochloa saccharoides*) than little bluestem (*Schizachyrium scoparium*). Its rames are hairy, but with far fewer hairs than either little bluestem or silver bluestem. The common name yellow bluestem is because some people describe the rames as yellowish in color. Yet the rames commonly have a distinctly reddish cast to them. Thus a possible explanation for the specific epithet *ischaemum* (Greek *ischaemos* meaning styptic or blood restraining).

Bothriochloa ischaemum is a species that thrives in mesic to dry habitats with poor to weak soils. It can even tolerate some salinity. So it flourishes in rich soils but dies in oversaturated soils (Old World Bluestem. http://www.illinoiswildflowers.info/grasses/plants/ow_bluestem.html). While it can form bunches, *B. ischaemum* is capable of producing both vigorous stolons and rhizomes. These aspects of its habit allows *B. ischaemum* to overtake native species.

The Texas Invasive Species Institute (<http://www.tsusinvasives.org/home/database/bothriochloa-ischaemum-var-songarica>) states that mowing to prevent seed development, controlled-burning, and grassy herbicide applications can knock back this species. However, eradication methods are currently not known. This is unfortunate because not only is *B. ischaemum* reducing grassland plant diversity, it is simultaneously decreasing animal diversity.

What is an invasive species? An invasive plant has the ability to thrive and spread aggressively outside its native range. A naturally aggressive plant may be especially invasive when it is introduced to a new habitat.

USDA National Agricultural Library

Ulmus pumila

The Frisky Siberian Elm
Rebecca Carlberg

The Siberian Elm (*Ulmus pumila*) could be the twin of Lacebark Elm (*U. parvifolia*). The two species are often confused. Look close. The Siberian leaf veins are thicker, the leaves turn yellow in autumn, not reddish as with Lacebark, the leaf bases are unequal as are American elm leaves and the main bark is furrowed and rough, not the delicate flaky, lacey trunk wrap of the Lacebark. The most striking difference is the timing of samara production. In spring the Siberian forms clusters of typical elm samaras; each seed is centered inside a papery wrap and is wind-dispersed. Our native Water-elm, Winged elm, Slippery elm and American elm follow suit. We watch the samaras twirl to the ground and ooh and ahh. The Lacebark elm, the native Cedar elm in southern OK and September elm in far eastern OK form short-stalked samaras in the autumn that often fall unobserved with the rest of the leaves.

Native to Turkestan, Siberia and China, the Siberian elm does have variable resistance to Dutch Elm disease and is the backbone of many cultivars. Unfortunately the Siberian lacks the typical American elm canopy shape. It is fast growing, tolerates drought, poor soils, pollution and Verticillium Wilt, but is susceptible to other fungal infections, elm leaf beetles, aphids, Elm yellows, flooding and shady areas. The Siberian elm can self-pollinate, a feat most elms are unable to pull off. First grown in North Dakota in 1905, the tree was planted in windbreaks after the Dustbowl and spread rapidly, often forming thickets that now crowd out native vegetation. The promiscuous Siberian hybridizes with native Slippery elm, putting that species at risk. Railroad bed gravel has proven to be excellent growth media and the train corridors are helping distribute Siberian elms. Proper management centers on early detection and use of mechanical or chemical controls. Good luck.

Invasive Plant Resources

[How to Eradicate Invasive Plants](#) by Terri Chace

[Nonnative Invasive Plants of Southern Forests](#) by James Miller

[Invasive Plants Guide to Identification, Impacts and Control of Common NA Species](#) by Sylvan and Wallace Kaufman

[Native Alternatives to Invasive Plants](#) by C. Colston Burrell

[Beyond the War on Invasive Species](#) by Tao Orion

The following websites are excellent resources about invasive flora and fauna:

invasive.org

invasiveplantatlas.org

texasinvasives.org/plant_database

okinvasives.org

Annual Meeting 2017

The 2017 ONPS Annual Meeting was held at OSU September 16th. In the morning at the theater in the student union we were edified by Heather Holm, horticulturalist, biologist, native bee researcher, author and publisher. She educated us regarding the roles of the native bees in natural and agricultural ecosystems, how to attract and feed those bees and how to provide over-wintering habitat. (Who knew there were more than 20,000 native bees in North America?) Her books are *Pollinators of Native Plants*, 2014 and *Bees: An Identification and Native Plant Forage Guide*, 2017.

With box lunch in hand, many of the participants went off to explore Horsethief Canyon for the afternoon. While there were not many wildflowers, it was an enjoyable and rigorous hike in the native forest.

In the evening we assembled for the Annual Meeting and dinner at the Educational Building at the OSU Botanical Garden. Before and during dinner there was a silent auction, primarily of books donated by Ron Tyrl. At the meeting officers and board members for 2018 were elected.

Joe Roberts Awarded the 2017 Betty Kemm Service Award

Outgoing ONPS State President Joe Roberts was the astonished recipient of the 2017 Betty Kemm Service Award, presented at the Society's Annual Meeting in Stillwater on September 16, 2017. A Life member of ONPS, before assuming the state presidency in the fall of 2014, Joe had already served as Chairman of the Central Chapter in Oklahoma City and State Vice President. Cited for his down-to-earth, yet informative President's columns in the *Gaillardia*, his easy-going management style, and helpfulness in solving problems, Joe received the traditional glass gaillardia-embossed plaque from Sue Amstutz, Chairman of the Awards Committee during the Saturday evening member meeting.



Field trip at Horsethief Canyon near Coyle.



Heather Holm speaking at OSU about native bees and pollinators.



Bothriochloa ischaemum
King Ranch Bluestem



Tamarisk sp. Salt Cedar

Pyrus calleryana
Callery Pear



Ulmus pumila Siberian Elm
Photo: Steve Dewey, Utah State University, bugwood.org



Hydrilla verticillatum Hydrilla

Photo: Leslie J. Mehrhoff, University of Connecticut,
bugwood.org



Salsola tragus Russian Thistle

Photo: Eric Coombs, Invasive.org

Juniperus virginiana

Eastern Red Cedar

Melody Hobbs

Eastern Red Cedar is the specie that proves the old saying that "too much of a good thing can be terrible". Fragrant, long lived, evergreen Red Cedar must have been a welcome sight in the dead of winter for the early settlers who had moved to the grey, leafless cross timers and the seemingly endless expanse of plains covered in red and gold grass. They planted it in hedgerows around their fields and barns to shelter livestock and it was often given a prominent place in their yards around their homes. The settlers also effectively ended the natural cycle of wildfires that had kept it confined to craggy limestone hills and rocky ravines, and in less than 100 years it obligingly responded by expanding it's range to over 8 million acres in all but four of the state's 77 counties.

Eastern Red Cedar is dioecious, meaning there are both male and female plants. The specie is named for the overall rusty red color of the pollen producing male trees in winter, while the female trees are covered in a bountiful crop of bright blue "berries". While the berries are a favored food of birds like the Cedar Waxwing and Cardinals, left to its own devices Red Cedar can create a monoculture, overwhelming grasses, and choking the oaks and other species that provide food and habitat to actually drive away birds and other wildlife. Research has shown that one tree can consume up to 30 gallons of water a day, and an acre of Red Cedar can use up to 55,000 gallons of water a year, negatively impacting ground water as well as ponds and wetlands depending on water run off. There are several methods used to control Red Cedar once they have overrun an area. Prescribed burning is most effective on trees less than 4 feet tall and the labor intensive use of tree loppers, chainsaws, blades attached to tractors, even bulldozers are utilized for larger trees.

Pyrus calleryana

"Too Good to be True" : Callery Pear

Fran Stallings

Pyrus calleryana promised everything we wanted in an ornamental tree: pretty flowers and foliage; grow anywhere; free of pests (our insects won't eat it); and no messy critter-attracting fruits. The single cultivar originally came from China and Viet Nam early in the 1900s as rootstock for grafting European pear (*P. communis*). Like any pear or apple, the monoculture was self-sterile. By the 1950's, the "Bradford" cultivar became very popular, but all had the same shape. New genetic samples from Asia provided more varied shapes. Now they can cross pollinate and bear fruits, not juicy or tasty but appealing to birds who spread the seeds. Unfortunately these can indeed grow anywhere! and are hard to eradicate, cheerfully sprouting from stumps. They look pretty in abandoned fields, blooming with our redbuds, but they smell like rotting fish... And the cross-breeds often have thorns...

Some towns have banned the planting of any variety of Callery pear in city parks or streets, and discourage homeowners from planting them. Instead, we can plant native species that look pretty but are not invasive, that support native insects for our birds to eat.

Recommended trees include common serviceberry (*Amelanchier arborea*), Allegheny serviceberry (*Amelanchier laevis*), cock-spur hawthorne (*Crataegus crus-galli*), green hawthorne (*C. viridis*), Mexican Plum (*Prunus Mexicana*) and the native sweet crabapple (*Malus coronaria*).

***Hydrilla verticillata* (L.f.) Royle**

C.R. Ledford

I got the subject of a wet one. An aquatic invasive plant, aggressive in growth, problematic, that creates conditions that can weed out native species and otherwise alter ecological systems. The finger points to the introduction of the non-native plant in association with the aquarium trade in the 1950s.

There are two biotypes of Hydrilla that have escaped to find a home in the United States; one originating from India, the other from Asia/Korea. The Indian type officially documented in Oklahoma counties of Carter, Love, and Murray, is dioecious bearing only small, white female flowers. Vegetative propagation is the door that opens to expansion. Plant parts transported to other locations on boats or boat trailers, or by other unintentional means, can introduce it.

The perennial plant grows from small potato-like tubers which can produce slender stems up to 25 feet in length or increase by rhizomes. The saw-toothed leaves of an inch or less in length are arranged in whorls of 4 to 8. One or more teeth can be found on the underside of a leaf's midrib. The specialized axillary buds, called turions, also contribute to vegetative establishment.

The economic and ecological impact of the plant is known to be significant. By some it is considered to be the most problematic aquatic plant. Clogging water intake systems, impeding irrigation, disrupting boat navigation, and negative impacts to tourism and recreation are examples. Crowding out natives and changing habitat structures is also a result of take over.

Ridding an aquatic area of the nuisance is neither fast nor simple. The least effective is most likely by mechanical means. Chemicals have been used with some success and the use of sterile grass carp is an option. If interested in aquatic plants, the Noble Foundation, has an identification book for purchase titled, "Common Aquatic Vegetation" which includes a section on Hydrilla.

Salsola tragus

Russian Thistle, Tumbleweed

Alyssa Whiteman

On highway 412, heading to Black Mesa State Park, I watch milo fields, barren fields and old fields pass by in random succession. Common in all of these land types is the ubiquitous tumbleweed rolling across the horizon. A hallmark image of the Old West, the tumbleweed is in fact Russian-thistle (*Salsola tragus*), an introduced noxious annual. Originally brought to South Dakota in contaminated flax seed in 1873 from Russia, it has invaded every contiguous state barring Florida. A single plant can produce 250,000 seeds, which can be viable for a year and germinate with little moisture availability. Distribution of Russian-thistle has been so successful due to the broadcasting of seeds when the plant stem separates from the root and tumbles away in the wind. This detachment and flight also poses a fire hazard in drought stricken areas and makes it very difficult to control wildfires originating in tumbleweed stacks. It thrives in dry, arid conditions, in sandy soils on sites disturbed by overgrazing and tillage that have removed native topsoil and mycorrhizal fungi. Due to this advantage Russian-thistle can not be controlled by prescribed fire, however research has shown that introduction of mycorrhizae-rich topsoil to an infested area organically kills the weed and encourages the re-establishment of native forbs and grasses. Herbicide treatment has also been effective when applied properly, but a more economical option is the proper management of grazing during its vegetative state.

Invasive Watch
Is This Plant Invasive?
Chad Cox

Is that plant in my yard an invasive? Well if that plant has been around in Oklahoma for some time, then you can key it out. That will tell you if it is native or not. Not all nonnatives are invasive.

To settle whether your plant is invasive, check it out at invasiveplantatlas.org/. There you will find whether it is invasive but a lot more. Pictured will be leaves, fruits, diagnostic properties and the plant in a setting. The plant will be described and discussed as to history and invasiveness. Further, references to how to eliminate the plant according to a proving method are listed.

If your plant is not listed at the website above, try texasinvasives.org/plant_database/. Some invasive plants that are not found east of the Mississippi River might not be listed at invasiveplantatlas.org/. Likewise, some invasive plants that are found only in west coast areas might not be listed in the Texas list but will probably not be your plant.

You will no doubt notice some confusion between what is listed as invasive. That is because there is a difference between what is legislatively defined as invasive and what common sense says what is invasive. The above lists will give you the common sense version but also may indicate if it is backed by law.

The standardized common name of each plant is listed at USDA National Plant Database, though it might shock you to see what it is. This database is much improved now and will get better. The distribution of plants is substantively more inclusive of all data. If your invasive plant is not mapped there for your area, you could report that to the County Extension Service. This does make this list less useful since you need to know what that standardized name is to search the list by common name. Ohio spiderwort is not recognized but bluejacket is, if you are searching for *Trandescantia ohioensis*. Were you shocked to read that?

What if you have tried to key out your plant but not found it? Take the problem to the County Extension Service. There is likely a possibility that your plant could be an ornamental or hybrid and not be in your plant key. Of course you could have done this without doing any of the above but then you would not have learned what you will by having done the work above.

“There is evidence that invasive plant species may alter nutrient cycles differently from native species...Invasive plants also can exert profound impact on plant communities indirectly through the herbicides used to control them.”

Weidenhamer

Tamarisk sp
...I Think I Will Never See A Tree As Thirsty As Thee
Vonceil Harmon

Earlier in October I had the happy circumstance to spend a couple of weeks in the panhandle of Oklahoma. The western High Plains ecoregion is absolutely my favorite area in Oklahoma, wide open vistas, cacti, sand dunes, mesas, mixed grass prairies, playa lakes, and one hundred eighty seven vertebrate species including prairie dogs, swift fox, and pronghorn antelope. What is not to love!

As I was roaring (within the speed limit of course) across Texas County on SH-3 something suspicious caught my eye at the Palo Duro Creek bridge. I made a quick U-turn and to my consternation, my personal number one, most hated, invasive plant was gaily waving its deceptively attractive slender branches full of tiny, triangular, gray green leaves from the stream bed. GRRRR! My Grrrr-(very scientific) response was triggered by everything I know about this plant and the damage I have seen as result of its unique habits. Tamarisk (*Tamarix sp.*) or “saltcedar” is native to the Middle East, Asia, and parts of Africa, where it is accustomed to harsh landscapes with little rain. They became a very popular landscape shrub on the eastern coast of the United States during the 1800s due to their exotic, slender growth, red-brown bark, and a bloom period lasting from spring to fall that produces a mass of feathery pink blooms. Insidiously these flowers give way to hard, brown pods that break open to reveal cottony fluff that is packed with seeds. One plant can actually produce 500,000 seeds annually.

As with all our invasive species the story of Tamarisk in the United States includes the misguided attempt to control natural resources and the inevitable escape from cultivation. Farmers and ranchers in the southwest saw the Tamarisk as the answer to the loss of desert stream forests due to over cultivation of fields along river beds. They planted Tamarisk as windbreaks, soil stabilizers, and shade trees to alleviate evaporation of impaired streams. Naturally they thrived in the desert southwest with their downy seeds floating into river bottoms, streams and playa lakes. The inevitable result is an extremely invasive shrub that can efficiently replace native vegetation with impenetrable thickets. They also sequester salt in their foliage and if flooding does not flush out soil salts the leaf litter can increase the salinity of soil surfaces. Naturally these dense stands of salt cedars have also been found to support lower biodiversity than the plant communities that they displace.

Tamarisk control methods have swung through several extremes including fire management and the importation of tamarisk munching beetles. The success of these methods has been mixed and in the case of one of the species of beetles, close to disastrous for other species that share the southwest ecosystems. There is no silver bullet and eradication of tamarisk will never be complete but vigilance, research into more effective control methods, and restoration of affected waterways must be sustained. As native plant gardeners we should continue to advocate for environmentally friendly plant choices in our public and private landscapes. We can also help by supporting research and sustainable riparian reclamation in our own rural and urban communities. GRRRR!

Order Your Oklahoma Native Plant Record Now

We will print only enough journals for Volume 17 subscribers this year. So if you don't order before December 1, 2017, you'll miss having the beautiful cover in hand and you'll only be able to access these fine articles from the OSU electronic journal website. Be sure to take advantage of the order form in this issue and order any back issues you may have missed.

There are six great articles this year. First, the search for historic articles that would be important to botanical research often leads us down surprising pathways to sources that are sometimes hidden in plain sight. Lynn Nabb mentioned her grandmother's 1959 Master's thesis from the University of Tulsa in a Facebook post that honored her work and her life. Until then, Maxine Clark's "A Study of the Flowering Plants of Tulsa County, Oklahoma" had been quietly sitting in the university library for almost 60 years. Maxine was a graduate student of Dr. Ralph Kelting and a friend of Dr. Harriet Barclay, one of our founding members.

Second, we chose Paul Buck's "Allelopathy" from a previous issue of *The Gaillardia* for our "Critic's Choice Essay", because it explores deeply, the "War in the Garden", and the "vicious world in nature". Dr. Buck's 2004 article may help us better understand several issues discussed in "Allelopathic Effects of Eastern Redcedar" by Dr. Erica Corbett and Andrea Lashley, and in "Comparative Transpiration Studies on the Invasive Eastern Redcedar", by Dr. Adjoa Ahedor and his students at Rose State College. Both of these works involved undergraduate students in important research opportunities, and both explore possible negative interactions between plant species.

We have a couple more "firsts". Urban species have historically been overlooked by botanists because their habitats had been altered by human activity. Researchers have changed that perspective. Urban studies are now valued **because** they address the effects that humans have had on species. "Vascular Flora of Hafer Park, Edmond, OK", is from Dr. Gloria Caddell and students, Katie Christoffel, Alonna Price, and Carmen Esqueda at the University of Central Oklahoma. It is the **first** species list for Edmond's Hafer Park, which was established in 1979 after having served as a *sewage treatment facility*!

For another "First", Dr. Clark Ovrebo reports on an interesting earth star fungus that, until now, was known only in Texas and Japan. You'll want to read the article so you can be on the lookout for it. Evidently, it has a much wider distribution than previously thought.

Sheila retired from teaching biology at UCO in May, and she has been looking for new editorial leadership for the *Record*. Responsibilities and tasks for editing the journal have increased and become more complex as we have grown through these last 17 years, so the job has been split into several, more specific roles. Two years ago, Mark Fishbein took on the role of Manuscript Editor. Erica Corbett has joined the editorial board as a Technical Advisor. As well as uploading the finished journal to the OSU library website, Sandy Graue has taken on the job of getting the journal printed and shipped to subscribers beginning with Volume 16. Paula Shryock continues to format the whole journal and get it finished for printing and uploading. This year, Gloria Caddell has been taking on some of the editorial duties and learning about how to manage the journal's webpages. She is serving as a co-editor with Sheila for this year. This will allow her to learn what the responsibilities and time constraints would be. Sheila will begin working on her next lichen book, a field guide for the lichens of the Great Plains.

As we move the journal toward being an online journal, with a print option only for subscribers, we would like to clear out all back issues so we won't have to store any in the future. Please check your library to see if you are missing any back issues and order any that you need to fill in, or would like to donate to a local or school library.

Northeast Chapter News

Lynn Michael, Chair

Mark your calendars for September 21-23, 2018, because Northeast Chapter has already been planning next years ONPS Annual Meeting. We are excited about the location at Sequoyah State Park. We will be headquartering at the lodge which has recently been completely renovated and they are setting aside a block of rooms for us. The long drive through the park sets the mood as you are encircled by relaxing pines. There are activities for everyone with watercraft and horse-back riding for rent, and activities at the nature center. They have live animals such as fox, coyote, beaver and turtles. There are even goats for petting. The facilities have everything from primitive camping to lodge rooms, so something should appeal to everyone. The myriad of trails exhibit varying skill levels and types of vegetation. A silent auction, hospitality rooms and social events will also be scheduled. Give yourself extra time if you can - you won't want to leave!

Northeast Chapter is continuing its Fabulous Friday get-togethers at 5:30 p.m. every 3rd Friday each month at the Panera at 7110 S 101 E Avenue in Tulsa, until our old Panera location reopens.

The speaker for our meeting on December 4, 2017 will be Abby Moore who is kind enough to come give us her program on identifying plants by family characteristics. Meeting begins with snacks at 6:30 in the ballroom of the Tulsa Garden Center and the meeting starts at 7:00 p.m.

Our meeting March 5, 2018 will be a program on Welcome to a Virtual Bioblitz. We will plan field trips for the whole month of April 2018 so we can each have our own Bioblitz. Come join the fun and let's learn about our spectacular native plant diversity in Oklahoma.

Central Chapter News

Patrick Bell, Chair

The Central Chapter had a native plant/ wildlife smorgasbord of meetings this fall.

The September meeting featured Matt Fullerton with the Oklahoma Department of Wildlife Conservation discussing the Oklahoma Monarch and Pollinator Collaborative (OMPC), which is a group of organizations, agencies, stakeholders and individuals that are working on the development and implementation of a state-wide plan for the preservation and further expansion of Monarch butterfly and pollinator habitats.

In October, Ray Moranz with the Xerces Society (and also part of the OMPC), gave an insightful and enjoyable talk on the use of native plants for the development of butterfly gardens, landscapes and habitats.

We concluded our 3 part *natives for wildlife* series in November with Mark Howery, also with the Oklahoma Department of Wildlife Conservation, giving an astute and much enjoyed talk about the use of native plants for attracting wildlife, especially birds.

The Central Chapter will host the 2018 Indoor Outing on Saturday February 3rd in Norman. Details are being worked out and will be on the ONPS website when completed. Mark your calendars and plan to join us.

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