



Gaillardia

The Oklahoma Native Plant Society Newsletter

CALENDAR

Note: the events dated below are followed by either a page number for further descriptions or the contact person.

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

**Volume 28, Number 3
Autumn 2013**

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ONPS website www.oknativeplants.org

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FOR NEXT ISSUE IS**

15 November 2013

Mark your calendars!

ONPS Annual Meeting

Saturday, Sept. 28

@

Arcadia Conservation

Education Center

More info at oknativeplants.org

Sept: 9, NE Chapter Meeting at Tulsa Garden Center at 6:30, Page 7

Fabulous Wildflower Fridays, the 3rd Friday of each month, Page 8

Note: all members are invited to all meetings, including board meetings, and are encouraged to bring guests.

ONPS THANKS THESE DONORS

General Fund

Carol I. Eyster

PRESIDENT'S PARAGRAPH

Adam Ryburn

In the *Summer 2013* edition of the *Gaillardia* I wrote an article titled "Where is Spring?" in which I expressed my dissatisfaction of the half-week winters we were having at the time (April). It was looking like winter wouldn't end. I want to apologize for my remarks since apparently the man upstairs thought I wanted spring and the spring rains to start right away. Well He definitely started spring and I now think spring may never end. With record, drought-ending rainfalls and lower than average temperatures, the landscape is looking much different this year than in recent years. Flowers are staying on much longer and plants that I have not seen in several years are popping up all over the place. Also, I now need to mow my *Cynodon dactylon* (Bermuda grass) lawn about twice a week, when normally my lawn has a nice "crunch" sound when walking on it in August. This is surely my punishment from God for complaining about the never-ending winter.

I can't wait to see what the rest of the year is going to look like. The fall flowers and foliage is forecasted to be excellent this year. I'm especially looking forward to doing some botanizing at this year's Annual Meeting of ONPS. The meeting is going to be held on Saturday, September 28 at the Arcadia Conservation Education Area located near Edmond on Lake Arcadia. I hope you are making plans to join me and other botanist for this fun-filled day. More information on registration should be coming in the mail soon; so be on the lookout.

Happy botanizing!

IMPORTANT GENERAL NOTICES

Proposed changes to the ONPS By-Laws to be voted on at Annual Meeting on September 28 at the Arcadia Conservation Education Area.

ARTICLE VI, The Governing Body

Section 2:

Existing: The Executive Board shall consist of the elected officers of the Society, Directors at

Large, Chairs of standing committees, and representatives of chapters, with the immediate Past-President as an ex-officio and voting member.

Proposed change: The Executive Board shall consist of the elected officers of the Society, Directors at Large, Chairs of standing committees, the Membership Coordinator, and representatives of chapters, with the immediate Past-President as an ex-officio and voting member."

Article XI Dues

Section 3:

Existing: Membership becomes effective upon payment of dues and lapses when dues become delinquent. Dues paid through 31 August will apply to the current year; dues paid after 31 August will apply to the next calendar year. Members will be dropped from the Society when their dues are in arrears one calendar year. Memberships may be reinstated by payment of current dues. To maintain an unbroken or Charter membership, the payment of all delinquent dues is required.

Proposed change: Membership becomes effective upon payment of dues and lapses when dues become delinquent. Dues paid through 31 August will apply to the current year; dues paid after 31 August will apply to the next calendar year. Members will be dropped from the Society when their dues are in arrears six months. Memberships may be reinstated by payment of current dues. To maintain an unbroken or Charter membership, the payment of all delinquent dues is required.

Article XII Fiscal Year

Section 1:

Existing: The fiscal year of the Society shall be the calendar year.

Proposed change: The fiscal year of the Society shall be from Nov. 1 to Oct. 31 of each year.

Gloria Caddel reports that she has not received a nomination for the Anne Long Award. The announcement is in Vol 28.2.

BOTANIST'S CORNER

***PHACELIA STRICTIFLORA*:
A BURST OF BLOOM AFTER FIRES**

Sonya L. Ross
Southeastern Oklahoma State University

Phacelia strictiflora (prairie phacelia) is a native wildflower that grows in southeastern Oklahoma's Cross Timbers forest. The Cross Timbers is a deciduous forest made up mostly of post oaks growing on poor soils. *P. strictiflora* is normally rare and appears in small numbers in the spring. However, after wild fires it germinates, grows and blooms profusely in some places.

A wild fire along Blue River near Wapanucka in 2011 resulted in massive germination of *Phacelia strictiflora* from March through April of 2012. A sea of light purple blooms flowed through the burnt remains of the forest. Dr. Stan Rice and I gathered seeds from this abundant growth. We used these seeds to test the hypothesis that the massive *P. strictiflora* germination was caused by smoke from the wild fire.



We were curious to know if the germination response was due to exposure to chemicals in the smoke. Another plant of the same genus, *Phacelia grandiflora*, which grows in the California chaparral, has a smoke exposure requirement to break dormancy and germinate. This species is native to a biome which has a regular fire cycle whereas *P. strictiflora* is not. When cellulose material is burned it releases karrikins, a family of plant growth regulators that naturally occur in the smoke. These chemicals are able to break seed dormancy, causing germination in many species of plants that are adapted to a regular fire cycle.

Seeds of many other species, even of garden vegetables, have been shown to germinate at higher rates from smoke exposure whether they are from biomes which have a natural fire cycle or not. However, unlike these other species, very few of our phacelia seeds germinated without exposure to smoke chemicals.

In order to test our hypothesis that smoke exposure was the cause of the massive germination of *P. strictiflora* we first needed to find out if it was caused by something other than smoke exposure. We exposed seeds to various treatments which would have been present during the fire. These included exposure to distilled water only as a control, heat shock while wet and dry, ground ashes, physically scarifying the seed coats, chemical fertilizer, sulfuric acid, and ammonium hydroxide. None of these seeds germinated.

Next we made a smoke water solution. Since our budget was limited, we needed to think outside the box as to how to make the solution. We finally settled on burning small amounts of oven dried oak wood in a commercial hookah bowl using a nasal aspirator to draw the smoke from the bowl through distilled water in the water pipe's glass chamber. We refilled the bowl and drew smoke through the water until the resulting smoke water solution was visibly tinted an amber color. The solution was then diluted from full, to half, and quarter strengths and used as a pre-treatment on the seeds.

The smoke-water greatly enhanced the germination of the phacelia seeds. These results show that *P. strictiflora* is very strongly enhanced by smoke. The almost complete failure of the

seeds to germinate in conditions other than with smoke water clearly shows the strong dependence of *P. strictiflora* germination on smoke. We believe the massive germination after wild fires causes a buildup of the seed bank which then germinates profusely after smoke exposure when extra nutrients have been released into the soil and most competing plants have been eradicated by fire.

Wet, cool conditions during the winter can stratify seed. But we found that the phacelia seeds do not have to be cold stratified in order to germinate. In fact, seeds which have been insulated from cold began germinating at seven days which was 14 days faster than the cold stratified seeds.

When a fire burns through a Cross Timbers forest that is hot enough to eradicate most vegetation, even killing the hard tenacious post oaks, hundreds of thousands of seeds lying in the soil are suddenly exposed to a rush of smoke mixing with the remaining moisture in the soil and coating the seed hulls. Chemical signals are sent and the seeds are ready to germinate.

Seeds of many plant species germinate after fires, when they are exposed to sunlight and nutrients. But most of them germinate after any kind of disturbance that gives them a flush of resources. The prairie phacelia is a rare example of a species that germinates mostly after just one kind of disturbance—a major wildfire.

Although *P. strictiflora* seed germination is greatly enhanced by smoke exposure, there will be a small percentage of seeds which will germinate without a fire cycle. This is also reported in its relative *P. grandiflora*. It is such a small percentage that it effectively limits *P. strictiflora*'s growth to post fire conditions which makes this plant closely resemble the plants of a fire-dependent community more than it does the plants of a deciduous forest. At this time there has not been any other Oklahoma plant species reported with such a high smoke enhanced germination, though we suspect that the wild mustard *Selenia aurea* may have a similar requirement. It, too, is most abundant after large fires in the Cross Timbers.

Oklahoma Native Plant Record on the Cutting
Edge of Digital Publication
Sheila Strawn

You will be proud to know that the Oklahoma Native Plant Society is at the forefront of a new age in the publication of scientific research. Thirteen years ago when Pat Folley and I began publishing the *Oklahoma Native Plant Record* for the Society, the first decision we made was that it would always be an “open source” journal. There would never be a user charge for access to the articles, that the authors would own their work, and that their work would be made digitally available, worldwide. This was a break with the historic “publisher owns the copyright” policy. Open source publishing is drastically changing the way commercial publishers handle serial journals.

Just decades ago, publishers recouped the costs of editing, proof-reading, printing, and advertising by selling the authors’ work in the form of subscriptions to institutions and libraries for a profit they could pass on to their stockholders. In most instances, authors were not paid, and their work was not released until publishers had reviewed, formatted, and proofed enough articles to fill the next issue. There was usually a backlog of articles waiting to be published, since there was a limited number of pages that could be included in each issue. Very often there were “page charges” that an author’s institution had to pay to get the research published. Such charges and subscription costs were the way publishers financed the release of research data. This exclusivity enhanced the reputation of the journal as well as the institution and, in a circular fashion, the author whose work was chosen to publish. Authors, whose work had been accepted previously, found their work was more likely to be accepted again. This phenomenon is tied up in a journal’s “impact factor”, which deserves its own explanation – some other time.

With the arrival of the digital age, printing costs came down, but salaries went up. At the same time, libraries and institutions that had been paying huge sums of money for a large selection of journals found it impossible to continue to subscribe to “publishing house journals” as their budgets were cut, and cut again, and again. Formerly successful publishers went out of business. Meanwhile, having access to the very

latest data has become vitally important to researchers, and authors have much more data to be published. All these changes have opened a need and a niche for open access electronic publications with print-on-demand capability.

When an author's reputation and promotion depend on their having the earliest publication date and the widest global accessibility, they often cannot wait until a large print-journal publisher releases their data. But, to reveal data before the publication could go on sale, would be unethical, since the author does not own the copyright. Some commercial publishers are either releasing articles online before they print them or allowing authors to release data early, as a means of raising interest and sales of their journals.

As the digital age matures, big publishers are now in big trouble because authors who formerly ignored our "micro-journal" are now passing up those well known journals that "sequester" or hold their data in order to profit from selling research data to the few remaining institutions that can afford their premium subscription price. They are submitting their research to small journals, like ours, with minimal volunteer staff and desk-top publishing programs in order to get them published in a timely manner to as many colleagues as they can. On a very low budget we can fill that publishing niche by providing quality color images and almost unlimited space for data.

Currently, global accessibility of data is the main publication objective. Our authors can release their data to anyone they wish, any time they wish. All accepted articles are published online the same year they are submitted. There are none waiting to be published in the next issue. Our abstracts are indexed in *Centre for Agricultural Bioscience International*, and our journal is listed in the globally searchable Directory of Open Access Journals.

MONARCH MIGRATION & BUTTERFLY FESTIVAL

Monarch Migration & Butterfly Festival is a great educational and celebratory event, now in its 6th year. It's free and family-friendly. Bring your kids, grandkids, spouse, neighbors, Sunday School class, science and biology students, parents, grandparents, and friends!

Saturday, September 21st, 10 a.m. – 4:00 p.m.
Jerusalem Community Park
Fernwood & State Hwy 74B (270th)
Washington, OK 73093
Just 15 miles southwest of Norman
Free admission. I-35 to Goldsby exit 104 & follow signs.
Butterfly releases: 11:00 to 1:00, Parade: 2:00

Park gardens, planted especially for butterflies with host and nectar plants, attract many different butterflies. Learn about Monarch migration, habitat needs, butterfly gardening and water conservation. Enjoy arts, face painting, educational displays, butterfly plants & seed sales, good food and the great outdoors. Bring your family, your lawn chairs and your camera and enjoy this fun & educational event! Anyone dressed as a butterfly, caterpillar or flower can join our finale, the Parade of Butterflies, beginning at 2pm!

Contact Zereta Sucharski 630-802-6366 or Pam Adams 405-227-7423 for more info

WILDFLOWER WORKSHOP

Elaine Lynch

Many plant lovers from across the state gathered in Alva, Oklahoma on June 7th and 8th for the 36th annual Wildflower Workshop. We gathered in the Student Center Ballroom of Northwestern Oklahoma State University on Friday at 9:00 a.m. We were welcomed by Alex Mantz of the Community and Economic Development department of the Alva Chamber of Commerce. All attendees received a packet of Alva information. Then Brooke Bonner, Botany Doctoral candidate from Oklahoma State University talked about the "Vegetation of the Great Salt Plains." She described the different types of vegetation she observed at the Great Salt Plains while doing her Master's thesis research. She illustrated with slides the degree of diversification in plant species varied based on the salt tolerance of the species and the proximity to the lake. There are few species that can thrive in the high saline levels of the water and soils close to the lake. Species diversity increased with distance from the shore.

Dr. Adam Ryburn, Professor of Botany at Oklahoma City University, next presented “The Flora of Oklahoma – Past, Present, and Future.” He gave the history of the Flora of Oklahoma project, which is working toward developing “full descriptions and illustrations for each genus of vascular plants in the state of Oklahoma.” (Flora of Oklahoma website: <http://www.biosurvey.ou.edu/floraok/about.html>) Adam told about the ongoing work of the team of botanists to identify and write keys for all of Oklahoma’s vascular plant genera.

Adam was followed by Craig Williams of Color Oklahoma who described the work they are doing to plant wildflowers along Oklahoma highways, turnpikes, parks and other public lands. The effort is partially funded by the sale of Color Oklahoma license plates and Craig urged everyone to consider buying and displaying the plates. Craig brought bags for all attendees that contained a potted wildflower and two packets of wildflower seeds. My bag contained a potted *Asclepias tuberosa* (Butterfly weed) and packets of *Callirhoe involucrate* (Wine cup) and *Gaillardia pulchella* (Indian blanket) seeds.

After lunch, Dr. Karen Hickman, Professor of Natural Resource Ecology and Management at Oklahoma State University, gave her presentation on “Oklahoma Invasive Plant Council’s Dirty Dozen,” a list of the twelve most invasive or noxious plants in Oklahoma as determined by the Invasive Plant Council. She described how the plant arrived in Oklahoma or how it is believed to have arrived, if the method was not certain. Some species were accidentally introduced but others were deliberately brought to the state for agricultural use for grazing animals or as landscape and garden plants.

Dr. Sheila Strawn, managing editor of the Oklahoma Native Plant Record, gave us the “Evolution of the Oklahoma Native Plant Record.” Sheila described how submission of articles, editing and publishing the Record has changed over the years with the development of new technologies.

Our final speaker of the afternoon was Dr. Rod Murrow of Murrow’s FrameArt in Alva. He gave us his tips on photographing flowers in “From

Petals to Pixies: an Introduction to Flower Photography.”

Friday evening we enjoyed a delicious meal catered by the Student Center and had a “Preview of the Great Salt Plains” presented by Dr. Steven Thompson, Professor of Biology at Northwester Oklahoma State University.



On Saturday, June 8th, Dr. Thompson led our field trip to the Great Salt Plains National Wildlife Refuge. We went first to a viewing area that provided a great example of the effect of the salt water on plant diversity. We were able to see the change in vegetation depending on how close we were to the lake. Unfortunately, we also saw many examples of the very invasive *Tamarix* salt cedar. We made a short visit to the Wildlife Refuge’s visitors’ center then followed a trail through a wooded area to a bird observation platform and a short distance along the lake shore. We saw many native wildflowers in both places but I don’t remember the names of most of them. I do remember some large patches of *Gaillardia*, some spiderwort (*Tradescantia*), and a few prickly poppies (*Argemone*). We saw



milkweed (*Asclepias syriaca*) and beautiful *Catulpa* blossoms. A sack lunch ended the field trip and a very enjoyable Wildflower Workshop.

CHAPTER ACTIVITIES

Cross-Timbers Chapter

Elaine Lynch

The Cross-Timbers Chapter has been quiet over the summer. Mark Fishbein has been doing field work and Elaine Lynch was involved in organizing the Wildflower Workshop. We are planning to do a resurvey of the Cow Creek Restoration area in October. Other activities are in the early planning stages. We will announce our events to the ONPS list and Facebook when we have dates and details.

Central Chapter

Joe Roberts

On June 15th, a mixed group of 28 native plant enthusiasts gathered at the Wichita Mountains Wildlife Refuge for a day of botanizing. We were graciously hosted by the new Southwest Chapter of the ONPS and members of the Friends of the Wichitas, a group supporting nature education on the refuge. We were fortunate to have fairly mild weather, with clouds keeping the sun at bay for most of the day.



We met at the refuge visitor's center in the morning, and caravanned around the refuge in buses and private cars, stopping frequently to enjoy a riot of summer color. The improved rainfall this year really made a difference over

past years. From the road, we passed impressive stands of *Monarda citriodora* (Horsemint or Lemon Monarda), *Ratibida columnifera* (Prairie Coneflower), and *Gilia rubra* (Standing Cypress).



We took several walks around the prairies and woods in the refuge, and found some interesting new friends and many old ones, too. Personal highlights were *Scutellaria drummondii* (Skullcap), *Delphinium virescens* (Prairie Larkspur), and *Manfreda virginica* (False alo). We retreated to the Education Center for lunch. Doug Kemper from the Southwest Chapter then led a tour of the Medicine Park Aquarium and Natural History Museum. The aquarium/museum is now under construction, and it has native plant gardens with walking trails for easy access. The site sits on a hill overlooking the town of Medicine Park, located just outside the wildlife refuge boundary.

Be sure to mark your calendars for the ONPS Annual Meeting on 28th of September at the Arcadia Conservation Education Center near Lake Arcadia, just east of Edmond, OK. We will get together with like-minded folks from around the state, make some new friends, meet some old ones, and have a lot of fun!

Northeast Chapter

Alicia Nelson

Greetings to our members! If you have an interest in native plant gardening and how to attract butterflies, come to our next meeting on September 9th, at the Tulsa Garden Center beginning at 6:30 pm for desserts and social time. Sandy Schwinn is a retired educator, and local expert on growing and propagating OK native

plants. For over 30 years, she has raised and released over 20 different species of butterflies. She is currently working on a 2.5 acre project/butterfly meadow near Lake Bixhoma. Her presentation “*Best Natives for the Butterfly Garden*” will educate and inspire you towards success in your own landscape. Take the “native plant challenge” and go home with native plant seeds for your garden, compliments of our speaker.

As the summer is coming to an end, this is not the time to lie back for fall and hibernate for the winter. As native plant enthusiasts, we know it is time to put on our hiking shoes and be out in nature discovering Oklahoma’s beautiful fall flowering native species. What should we expect to see in our area this season? Blue sage, blue lobelia, red cardinal flower, pink gaura, many yellow flowering plants in the Asteraceae family, snow on the mountain - unique with variegated white and green leaves, and the emerging purple spikes of *Liastris sp.*, just to name a few.

Our chapter is planning two fall field trips, the Tulsa Botanic Garden (early September) and the Nature Conservancy Tallgrass Prairie preserve (mid October), near Pawhuska. The Tulsa Botanic Garden is located on 170 acres in the Osage hills NW of Tulsa. The gentle 1.5 mile trail will lead us to crosstمبر woodland and open prairie native species. The website ocbg.org, will

give directions and information about the history and development of the Tulsa Botanic Garden.

This is the year to visit the Tallgrass Prairie preserve. On my recent visit, vast amounts of purple and yellow herbaceous native plants were covering the landscape with several herds of bison resting by the roadside. Take this opportunity and learn to identify OK native grasses. We may very well see Big Bluestem 6 ft tall and Indiangrass profusely flowering. The conservancy will provide our group with a guided tour. Visit nature.org to view directions and information about the Tallgrass Prairie preserve.

Statewide ONPS members are welcome to join us on our fall field trips. Contact me directly for the dates, details and to RSVP, at aknlsn@att.net or call 918/599-0085.

Wildflower Fridays are held the third Friday of every month. We meet at Panera Bread on 41st and Hudson in Tulsa around 5:30 pm for a social time of sharing wildflower photo’s, and sometimes identifying live native plants. Please join us!

WELCOME THESE NEW MEMBERS

**Donna Marsheck, Bartlesville
Janet and Greg Sheik, Carmen**

FOR JOINING OR RENEWING USE THIS FORM

Fill out this form or supply the same information. Make checks payable to Oklahoma Native Plant Society and mail to Oklahoma Native Plant Society, P. O.Box 14274, Tulsa, OK 74159.

Membership is for Jan. 1 - Dec. 31 of current year and dues include subscription to *Gaillardia*.

Name: _____

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Annual Membership Choice: \$15 Individual or \$20 Family , or \$5 Student

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Add \$5.00 to cover cost of copying and mailing a complete ONPS directory

PDF copies of the membership directory are available at no cost to any paid member. You can request a copy by emailing Tina Julich (tjulich@hotmail.com) for an e-copy. Printed directories are also available for \$5.00 by requesting one when you renew your membership, or by sending a check to ONPS.

FIELD TRIP RULES

- Participation is at your own risk.
- Preregistration is required for all field trips.
- Field trip announcements will contain the name, address, and telephone number of the leader. If you have doubts about the terrain, difficulty, etc., ask.
- Collecting any plant parts or other materials at the site must be approved by the field trip leader.
- Field trips take place rain or shine. Hiking boots, long pants and a hat are essential.
- Bring water and lunch or a snack. Sunscreen and insect repellent are always in demand. Field guides, a camera and binoculars are nice.
- All ONPS field trips are open to the public at no charge, unless charges per-member are specified in the announcement. Visitors and newcomers are always welcome.
- Children old enough to keep up are welcome. Pets are not.

Volume 13 of the *Oklahoma Native Plant Record* to be published December 1, 2013

This year we have a special article, "Cavalcade of Field Botanists" by Ron Tyrl. It is a tribute to all those botanists who have contributed to the database of native plant species in Oklahoma. Many are native Oklahomans, many have been members of the Oklahoma Native Plant Society. All were dedicated to documenting the state's diversity. He has been compiling biographical and professional information to write this article for us for several years. We are excited to announce that it is just about ready and we can hardly wait to share it with you.

While many researchers have reported on the effects of fire, a common environmental factor in Oklahoma, Stan Rice and Sonya Ross have been looking at several different effects of fire, including the effects of chemicals in smoke on plant establishment after a fire. It is a preliminary report that looks at germination rates of *Phacelia strictiflora* seeds watered with smoke produced chemicals dissolved in water. Also in this issue, Amy Buthod, of the Oklahoma Biological Survey and Oklahoma Natural Heritage Inventory, provides us with another valuable flora, that of the Oxley Nature Center in Tulsa.

Remember to tell everyone you know that all volumes of the *Record* are now available online through Oklahoma State University's Edmon Low Library, as an e-journal publication. It can be accessed globally at <http://ojs.library.okstate.edu/osu/> But if you want a printed copy of any of our future volumes, get your order in early. Only 50 copies will be printed again this year.

Sheila Strawn
Managing Editor

Volume 13, the 2013 issue of the Oklahoma Native Plant Record is being offered to members, non-members, libraries, colleges, and universities in print at the subscription rate of \$10.00 plus \$2.00 shipping. It is also available in electronic format on CD at \$10.00 for all volumes. If you would like to receive the journal please return this notice with your payment to the address at the bottom of the page.

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Enclose order form with your check (email sastrawn@hotmail.com if you need an invoice) and mail to ONPS

This is what the new Color Oklahoma Rack card look like front and back.



WHAT'S THAT WILDFLOWER?

Color Oklahoma Sow Some Wild Seeds wants to help you identify native wildflowers as you travel our state.

Visit the Photo Gallery at coloroklahoma.org or use the QR codes to find the pictures and names of some of Oklahoma's most common wildflowers.



Wave when you see a *Color Oklahoma* license plate. The driver is helping pay for our annual seed sowing along state highways and turnpikes.

You can buy one of the special tags at a tag agency. *Color Oklahoma* receives \$20 of your \$35 purchase. You will help make our roadsides even more beautiful!

Color Oklahoma Sow Some Wild Seeds, a committee of the non-profit Oklahoma Native Plant Society, supports preserving and planting native plants.



Color Oklahoma Website *Color Oklahoma on Facebook*



Spring
Indian Paintbrush



Late Spring/ Early Summer
Indian Blanket



Late Summer/Fall
Maximilian's Sunflower

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The Gaillardia

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