



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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Autumn 2001

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Gaillardia

The Oklahoma Native Plant Society Newsletter

CALENDAR

Note: the events dated below are identified by either a page number where the event is fuller described or the name of the contact person for that event.

September 8: Eastern Oklahoma loop route, stop off at Natural Falls State Park and a couple of other sites to be determined. Meet at 8:00 a.m. at Tulsa Garden Center parking lot. Contact Jim Elder at (918)747-0735 or jfeok@aol.com.

September 15: Cross-Timbers Chapter Meeting. Local field trip in search of fall wildflowers. parking lot between Life Sciences East and Physical Sciences Building, OSU campus at 10:00 a.m., Ron Tyr1

September 24: Central Chapter regular meeting, Page 10

October 19-21: ONPS Annual Meeting, Stillwater, Page 2

October 28: Cross Timbers old growth, Lake Keystone. Meet at 1:00 p.m. at Tulsa Garden Center parking lot. Contact Jim Elder at (918)747-0735 or jfeok@aol.com.

October 29: Central Chapter regular meeting, Page 10

November 10: Cross-Timbers Chapter Meeting, Potluck dinner and slide presentation, site to be announced, at 6:30 p.m., Ron Tyr1

November 26: Central Chapter regular meeting, Page 10.

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

ONPS THANKS THE FOLLOWING CONTRIBUTORS

Anne W. Long Fund
Larry Magrath

Harriet G. Barclay Fund
Davida E. Phillips
Kim Shannon
Bruce A. Smith
Larry Magrath

General Fund
Oklahoma Garden Club
Marcialy Robinowitz
Marjorie Greer

PRESIDENT'S PARAGRAPH

During the years when I was editor of the *Gaillardia*, I often heard from the current presidents that writing this column was the hardest part of the job. So, I must be "wired funny", as my children used to say, because it is my favorite part.

This time, I can tell you that our courageous and generous Board voted to underwrite the first edition of our ONPS Journal, so that every member can have an opportunity to read and enjoy it. You will get a response slip in this issue that entitles you to a free copy upon return of the form with your address. Those now in printing and not ordered will be donated to statewide libraries and colleges. I urge you to take this opportunity to see what Sheila Strawn and her able botanical corps can do with an opportunity to publish longer, more detailed material than the *Gaillardia* can handle. I think you will be surprised, and pleased.

There is so much information on the flora of Oklahoma that never sees the light of publication outside of the university that requires it. For example, this first edition will contain the complete text of Dr. U.T. Waterall's master's thesis survey of the plants of Oklahoma County, produced in the early 30's and never published. That historic list is accompanied by a draft of the current flora of Oklahoma County out of the Oklahoma Biological Survey's database. You will find new keys and descriptions of all our native orchids and ferns, and one of Jim Norman's classic essays on a great field-trip site.

It is our hope that, in addition to enjoying the current work, our members will be reminded of other, previously-unpublished information on Oklahoma native plants, and call them to Sheila's attention. We would be very much interested in biographical information on G. W. Stephens of Alva, who first made an attempt to document the contents of Oklahoma from within. You will know of others. To be included in a future issue, the material should be scientifically accurate but not necessarily be produced in an academic discipline. Several fine private and corporation sources are generating information that our members should see, too.

The Board also approved triplication of the portable display set that I mentioned in the Summer issue. Now, each of the three local chapters can have a readily-available kit to take to events where we need to have a presence. Each kit contains a fold-out display panel of twelve full-page prints by Charles Lewallen, membership forms, colorbook pictures, collecting guidelines, and entry blanks for the photo contest. Chapters can add other materials of their

own choice. To borrow a kit, see your chapter chairman.

What next? ONPS has such a wealth of talent that it seems the possibilities are endless. One goal we have never attempted would be the establishment and maintenance of a native-plant garden in a major city. We simply do not have the manpower to take on so much manual labor, but – wouldn't it be nice? Our field trips are legendary, and new leaders are stepping forth to pass on the legacies of the past, as reflected in the Orchid Tour report. How about a campaign to get Oklahoma homeowners, city councils and others to support delaying mowing until the spring flowers have gone to seed, about 1 July? There's a cause we could sink our teeth into! Or, perhaps it is now time to print up a brochure listing addresses and dates of privately maintained wildflower plots that can be booked for a tour? What's *your* idea? Let someone know!

Happy fall wildflowering

Pat Folley
President, ONPS

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IMPORTANT GENERAL NOTICES

NOMINATIONS FOR OFFICERS: Jim Elder, the chairman of the nomination committee for the coming year, definitely needs nominations for the ONPS secretary and for a board member. Call Jim Elder (918)747-0735 or email at jfeok@aol.com Most of the other officers continue to serve but would be most ready to step down if there was a volunteer to replace them. Nominations must be in before the Annual Meeting where the new officers will be voted in.

ANNUAL MEETING OF ONPS: The annual meeting of the society scheduled for October 19-21 will be a joint meeting with three other societies—the Oklahoma Section of the Society for Range Management, the Oklahoma Chapter of The Wildlife Society, and the Oklahoma Ornithological Society In addition to our traditional activities of an ONPS annual meeting—Friday night dinner and speaker, field trips, Saturday night banquet and speaker—there will be technical paper sessions scheduled on Friday that comprise a series of 15-minute talks by students and scientists who present the results of their research endeavors. A full description of the meeting is in the Summer *Gaillardia* along with the registration forms for the meeting and for presenting a talk. If you have observations and/or slides that

you think would be of interest to the other participants, please consider giving a talk. If you have questions do not hesitate to call Ron Tyrl at (405)744-9558 or rjyrl@okstate.edu. The deadline for preregistration is October 8.

PUBLICATION OF ONPS JOURNAL: The premier issue of the Journal of ONPS will be distributed this December. All members will receive free this issue when requested of Sheila Strawn, the Editor. Our thanks to her for bringing to fruition what has been discussed for several years. See President's Paragraph and enclosed response slip. Future issues will be by subscription.

DISPLAY KITS: The display kits are ready for all the Chapters, see President's Paragraph.

THANKS TO DR. MCCOY AND MIKE ELLISON: The Oklahoma Native Plant Society owes a debt of gratitude to people who help us obtain books for display and sale at gatherings. Dr. Doyle McCoy of Lindsey, author of several books about OK wildflowers, trees, etc., has for many years been providing us with those books at wholesale prices and allowing us to sell them at retail prices and keep the proceeds for ONPS projects.

This year, just before the Wildflower Workshop, we learned that Steve Dobbs, author of "Gardening in OK" would not be at the workshop and it was too late to make arrangement for obtaining the books from him as he lives in eastern OK. Ellison's Feed and Seed in Norman had a supply of them and allowed us to purchase ten at their price. Since we never intend to charge less than retail because we don't want to provide unfair competition, we were allowed to keep and use the difference.

Our sincere thanks to Dr. McCoy and Mike Ellison for their support in our efforts to spread the gospel of native plants in Oklahoma. Ruth Boyd

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BOTONY BAY

Paul Buck

INCEST:

There are Biblical admonitions regarding incest. Sexual relations between closely related individuals are clearly discouraged (Leviticus, Chap. 18). Why?

I hope that introduction caught your attention and interest quicker than if I had said, 'Botanical outbreeding is more beneficial than inbreeding. How

is the latter suppressed?' That is what I would like to discuss.

First, why is outbreeding, the fusion of gametes (sperm and eggs) between distantly related individuals more beneficial than inbreeding in which offspring are produced by the union of gametes from closely related, or in some cases a single individual? The latter is termed selfing.

Outbreeding produces genetic diversity by combining the traits of dissimilar parents resulting in varied offspring. Populations produced in this manner have a better chance meeting shifting environmental conditions such as fluctuations in the composition of atmospheric gases, changes in water quantity and/or quality, an increase or decrease in temperature or any of a multitude of changes which could result in extinction. Inbreeding, on the other hand, produces a population of individuals so similar there is less chance they could meet an environmental change. A moment's thought and you realize there is an advantage to diversity in populations since environments are not static. Yet, there may be advantages to inbreeding as well..

At this moment I am certain many readers are skeptical. After all don't we self many of our crop plants and isn't it a common practice for dog breeders to mate offspring with parents seeking the 'ideal' progeny? Yes, that is true but think about it. Those populations are not subjected to natural environmental pressures. They are carefully managed. Every pup meeting the fancy of the breeder receives excellent medical care and nutrition. Those not fitting the perceived requirements are destroyed. In reality, manipulated evolution, only those 'fit', survive to pass on their genes.

It is evident selfing or inbreeding is less desirable but how do wild plants avoid it? What approaches have evolved to guarantee outbreeding? Once again, give the subject some thought. Most Gaillardia readers have had enough experience with our native flora to speculate intelligently. Assume you have been given the task of designing plants to avoid inbreeding. Consider some of the species we have encountered on field trips. How do they discourage inbreeding and selfing?

As in higher animals, some plants may be adapted to producing only sperm or eggs, requiring two organisms for sexual reproduction. Such is the case with cottonwood, buffalo grass, Eastern red cedar, and persimmon. One individual produces sperm-bearing

pollen in stamens (staminate plant) and another eggs in pistils (pistillate plant). Obviously this approach will permit only outbreeding.

A similar adaptation is found in individuals producing staminate and pistillate unisexual flowers. Look about. This occurs in pecans, oaks, sycamores and native melons. These plants are often wind pollinated. Even though sperm and eggs may be produced simultaneously within a population the wind borne pollen generally originates in other individuals.

Mechanisms promoting outbreeding may be found in individuals producing perfect flowers, those bearing functional stamens and pistils. In some cases the pollen is available before the stigma (pollen receiving structure) is receptive, thus assuring outbreeding. This is termed protandry (pro-; Greek for before, -andry; Greek for male). Examples are beilflowers, mallows, and many of the sunflowers. Of course the reverse exists, the stigma being receptive before pollen is liberated from the same flower and is termed protogyny (-gyny; Greek for female). Protogynous species include pipevine, horse chestnut, and several figworts.

There are many approaches to assuring outbreeding via floral modification. One example is the intriguing flower of the mint *Salvia*. The flowers are bilaterally symmetrical with the lower three petals of the united five forming a broad landing platform for pollinators drawn to the flower by its color and the scent of nectar emanating from the open flower. Foraging insects landing on the platform immediately move toward the nectar supply. Arching stamens hold anthers loaded with pollen in the center of the open throat but that is no problem. The insects merely push them aside and gain passage but at the same time their backs are liberally dusted with pollen which, due to its location, is difficult for the animals to transfer to pollen baskets. At this time the stigma is withdrawn into the vaulted chamber of the upper petals. Ultimately the arrangement shifts, the anthers are withdrawn and the stigma moves down into the center of the opening where it too is pushed aside, but in this case by pollen-laden backs of subsequent visitors. The source of that pollen is another flower and generally another plant.

Other approaches to assuring outbreeding via floral modification come to mind. Examples are the right hand/left hand flowers of buffalo bur, the bizarre pseudocopulation of orchids, and in gentians, oxalis, and bluets the production of styles of different lengths (heterostyly). However, there is neither time nor space to pursue them now.

It was suggested earlier inbreeding does have advantages. What might they be? First, an example of inbreeding in Oklahoma, then you answer the question. One approach to selfing is the production of small, drab flowers that never open but self-pollinate within closed petals. This is not rare. Examples are *Stellaria media* (chickweed) and *Lamium amplexicaule* (henbit), two common winter annual weeds of our lawns. In the late winter and early spring the closed flowers successfully produce an abundance of fruit and seed. With the last frost and arrival of spring they produce open, showy flowers pollinated via outbreeding. This might give you an idea why conscientiously pulling each and every *Lamium* plant from the yard in mid-May fails to eliminate the population.

I hope these brief comments have alerted you to a few reproductive strategies of flowering plants and at the same time left you with additional questions to consider. As I've said before, it is an interesting world in which we live!

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The Natives

By Joyce Carey

I decide to claim my garden, a developer who, after all, owns this land.
Armed with tools of aggression, I set out to vanquish the natives.
Old-timers, these aborigines have prospered for a thousand years.
I want to choose my own tenants, exotic immigrants with fancy pedigrees.
Surnames exuding gentility, three syllables of Latin.
I set to work with fork and hoe, tossing away old souls.
My squatters chose perfect sites, unbothered by pests or drought.
However deep I dig I find the sound foundations of citadels
Whose day is not yet done.
At last, I usher in new families, "Will build to suit."
Soil, food and light altered for finicky tastes.
They arrive in latest fashions, sporting colorful hats and snooty ways.
They expect this, demand that, refuse to raise their families. One by one, they fade away, vanish and never write.

Wise to the ways of carpthaggers, the natives wait out the siege,
Rebuild their forts and raise their flags
Ready to reign again for a thousand years.

This poem was selected by Ruth Boyd from "Green Prints "The Weeder's Digest """, PO Box 1355, Fairview, NC 28730 and is printed here with permission from Pat Stone, editor. The issue containing this poem can be obtained from Bonnie Winchester, ONPS Librarian, for review. Most of the stories in this publication contain similar wit, humor and philosophy.

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BOOK REVIEW

Pat Folley

Book Report: *The Botany of Desire*, by Michael Pollan

It was just a year or so ago that I wrote you about another book by Michael Pollan: "Second Nature: A Gardener's Education". If you liked that, I'm sure you'll like this too.

In *The Botany of Desire*, Pollan traces the process of domestication of four plants through a considerable period of time. What makes the book different, and most interesting, is that it is a history of the way that plants have domesticated us to serve their own ends! These are the plants that offered the human tribe individual gifts for which we became the willing propagators. Each satisfied (or at least, promised to satisfy) a different desire. We desired sweetness, we got the apple. We desired beauty, we got the tulip. We desired intoxication, we got marijuana. And we desired control, and we got the potato.

My copy of this book is underlined frequently. Some of the memorable lines include: "A group of angiosperms refined their basic put-the-animals-to-work strategy to take advantage of one particular animal that had evolved not only to move freely around the earth, but to think and trade complicated thoughts." "All of nature is now in the process of being domesticated"...a premise we know to be false but can't seem to shake: that we somehow stand outside, or apart from, nature." He quotes Wendell Berry "In human culture is the preservation of wildness."

The apple is tracked as it moved through the settling of North America. Of course, Johnny Appleseed figures prominently: "Johnny Appleseed was bringing the gift of alcohol to the frontier". Every farmer knows that apples "don't grow true from seed" - yet Johnny Appleseed spread his trees from seedling stock. It was the extreme variability of the

apple plant that finally produced an apple for every taste and nearly every climate.

As America was the stage upon which the apple story was most completely played, the tulip, a Turkish wildflower, went to Holland to make good. This time, Polan goes all the way back to the Garden of Eden, in which, he says, there were no flowers! And yet "humans, like bees, are drawn instinctively to flowers." "Symmetry is an unmistakable sign that there's relevant information in a place." "The birth of beauty goes back further still, to a time before Apollo and Dionysus, before human desire, when the world was mostly leaf and the first flower opened."

About marijuana: "If it sounds as if I'm speaking metaphorically about forbidden plants and knowledge, I don't mean to. In fact, I'm no longer so sure the author of Genesis was, either." Describing the curious relationship between the mechanisms of memory and intoxication, he remarks "forgetting can be a curse...but forgetting is also one of the more important things healthy brains do". You'll have to read the book to see what he has to say about the potato, but even if you don't make time, remember this "What a reenchantment of the world that would be, to look around and see that the plants and the trees of knowledge grow in the garden still."

ROACHES BEWARE: Osage orange fruits can be gathered in late summer or fall and rolled under a raised floor like those in my old farmhouse to repel cockroaches. Folks who live in those new-fangled slab-floor houses will have to put their osage oranges beneath the sink and behind the 'fridge. Incredibly, it works. These fruits slowly dry up and do not make mushy messes. Pat Folley

POND TIPS

Chad Cox

There is not much chance that these tips are original but they are partially ones that have evolved during my proprietorship of a backyard pond. They may be of use to others that have similar ponds and are so offered.

Enough dirt and other debris accumulates, even without grandkids, that the bottom of the pond collects sludge which can be quite nasty and probably should be removed. I have in the past drained the pond and bailed out this sludge by hand. The typical impeller pump is too finicky for such a job; the blades get stuck on the debris or whatever is used as a filter plugs up too quickly. My trusty hand-

operated bilge pump from the boat works well for this chore. This pump looks somewhat like a tire pump, even has 2 valves like one, but the discharge hose is at the top. The lower valve, intake valve, is a rubber disc that lets sludge and sizable debris through without jamming. So you can pump the sludge from the bottom of the pond without draining it. The pump can be obtained from a boat supply store for about \$20.

Our pond has several large water plants that require sizable pots. Our cattails occupied quite a large pot. After the second year, some of the cattails were growing outside the pot. These were cut off and placed between 2 plastic trays, the kind nurseries used to hold many small pots, along with a few bricks, and then laced together. The next year, those that grew outside the tray were then used as that year's plants between a new set of trays. Cattails grow very well this way and probably many other plants that root in soil under water will do as well. Some of the parrot's feather is rooted in moss in net bags tucked in under the rocks lining the pond.



THE PRAIRIE STATE

By Neil Diboll

The following 2 part article was selected by Susan Chambers and reprinted here with permission, *American Nurseryman*, April 15, 2001, Vol. 193, No. 8.

Prairie meadows are becoming an increasingly popular alternative to traditional high-maintenance landscapes. Native prairie flowers and grasses are not only stunning as individual specimens but as complete prairie plant communities. Perhaps best of all, the prairie helps us reconnect with the earth and creates a haven for the native plants and animals with which we share this beautiful planet.

Not only are prairie meadows attractive, they are great for the environment. Prairie plantings require no fertilizers or fungicides and few, if any, herbicides. Prairie grasses and flowers also create high-quality habitats for birds, butterflies and other beneficial wildlife. The deep-rooted plants encourage infiltration of rainwater into the soil, helping to reduce storm-water runoff and flooding. Prairies also can serve as excellent buffer strips between maintained turf and wetland areas such as ponds, waterways and marshes. The cover provided by prairie grasses also complements adjacent wetlands, improving the environmental quality of existing water features.

Although the initial costs of a prairie seeding are often a little higher compared with those of turf seedings, there are significant long-term savings due to greatly reduced maintenance requirements. Any additional initial costs are usually recovered by the

second year. Maintenance savings continue to accrue in following years, yielding low life cycle costs. And because native prairie flowers and grasses are almost exclusively perennials, they bloom year after year. A properly installed and maintained prairie meadow is itself-sustaining plant community that provides landscape beauty for decades to come.

Despite the easy maintenance of prairie land, installation is not quite as simple as tilling the soil and sprinkling some seed on the ground. There are five critical steps that must be followed to ensure success with this landscaping style.

- 1) Site selection. Sunny, well-ventilated land with low weed densities is required.
- 2) Plant selection. Plants must be matched to the soil and growing conditions.
- 3) Site preparation. All weeds must be killed before planting.
- 4) Planting time and method. Landscapers must decide whether to plant in spring or fall, what seed dispersal method to use and what nurse crop to plant.
- 5) Post-planting management. Land is mowed and burned.

By following each step carefully and completely, outstanding results can be achieved, even by those with little or no experience in establishing native prairies.

SITE SELECTION. The area to be transformed into prairie must be sunny, open and well-ventilated. Prairie plants require *at least* a half-day of full sun. Full sun is best, especially for wet or heavy clay soil. Good air movement is also critical, as prairie plants are adapted to open sites not subject to stagnant air. Poor air circulation in closed-in areas can lead to fungal diseases, which are seldom a problem on sunny, open sites.

Areas with a history of heavy weed growth should be avoided if possible. This is especially true if a site has well-established, perennial noxious weeds. A full year or longer is required to properly prepare such a site for planting. Good candidates for prairie establishment include areas currently planted with turf, corn, soybeans or alfalfa. Beware of residual herbicides that may have been applied to agriculture fields, and always check the herbicide history from the past two to three years. Test the soil for residual herbicide activity if in doubt. Areas of open soil that result from new construction can also work well for prairie establishment, provided soil conditions are not inhospitable (raw subsoil) and all weeds have been eliminated prior to planting.

Avoid planting meadows in locations with adjacent weedy vegetation that cannot be eliminated or controlled. Although established prairie meadows are resistant to invasion by most weeds, three to four years of growth is required for full development. During these first few years, weed seed can blow into

the meadow and become established. Also, rhizomatous weeds such as quack grass, Canada goldenrod and Canada thistle can creep into the meadow from adjacent areas. If weedy land is located near the potential meadow site, it should be mowed once or twice a year before the weeds produce seed, or the weeds should be replaced with noninvasive plants.

PLANT SELECTION. Every plant is adapted to a certain set of growing conditions. Some grow only in well-drained, sandy or gravelly soils while others prefer heavy clay soil. Some require moist soil while others demand dry growing conditions. A few species grow in almost any soil, be it dry sand, rich loam or damp clay.

It's important to remember that a prairie is different from a garden. Prairie meadows are low-maintenance and require minimal, but specific, care. Meadow plants have to fight it out with weeds in the first few years as they become established.

Therefore, it is essential to select plants adapted to the specific site conditions.

There are different prairie seed mixes available designed to match a variety of soil conditions. These mixes are carefully balanced between showy flowers and ornamental grasses. Some people prefer to select specific plants for given mix. It is, however, important to include a wide variety of flowers and grasses to ensure year-round interest in the prairie meadow.

SITE PREPARATION. Preparing the future prairie site is a critical and commonly overlooked step that, if left out, can lead to disaster in short order. This is especially true of areas with a history of weed growth. All the weeds or existing vegetation must be killed prior to seeding. It takes only a few rhizomes of quack grass, brome grass, Canada thistle or Canada goldenrod to quickly recolonize the planted area.

The mantra for soil preparation for a prairie planting is simple, Take no prisoners!

There are many different methods preparing a site for seeding to create prairie meadow: Smother the soil with black or clear plastic for a full growing season; smother the soil with thick layer of leaves or grass clippings for a full growing season; plant a summer buck wheat smother crop, and follow that with a fall planting of winter wheat; repeat deep-soil tillage every three weeks for full growing season; remove sod on lawn with no weeds using a sod cutter; or treat the area with herbicides such as Roundup or similar glyphosate herbicide.

Pernicious perennial weeds must be killed, which requires yearlong smothering, repeated sprayings with herbicides or repeated tillage with equipment that can uproot and kill them. Weed seed that is harbored in the soil then must be allowed to germinate so it, too, can be killed through tillage or spraying. If a weed-ridden old field is selected for prairie establishment, a minimum of one full year of site preparation is required. Sometimes it can even

take up to two years to get the weeds under control before planting can occur.

Preparing agriculture fields. Old fields with heavy weed growth can be prepared using Roundup as follows: First, mow the field in late July and allow vegetation to regrow. Then spray with a 3 percent solution of concentrated Roundup in early September, when regrowth reaches 1 foot tall. If noxious, broadleaf weeds such as Canada thistle or Canada goldenrod are present, mix an appropriate broadleaf herbicide with the Roundup tank mix. Make sure to follow labeled instructions for use of the selected broadleaf herbicide for eradication of the targeted weed species. Allow the area to sit undisturbed over winter, and do not till. When weeds reach 1 foot tall the following spring, spray with a 3 percent solution of Roundup or, if necessary, a mix of the Roundup solution with the recommended rate of the selected broad-leaf herbicide.

If the site is uneven, regrade it to prepare the seedbed after spraying, but be sure to burn or mow dead vegetation prior to grading. (This is the final grading before planting.) Then let the weed seed germinate, and kill them for the rest of the summer with just the 3 percent solution of Roundup. If broadleaf perennial weeds are present, add a broadleaf herbicide according to the recommended rate. Allow weeds to regrow, and spray them again with the solution of Roundup or a mix of Roundup with a broadleaf herbicide when they reach 6 inches to 12 inches tall, likely around mid-July. Allow the weeds to regrow one more time, and spray *only* with the 3 percent solution of Roundup in late August or early September. The site is then ready to seed.

Planting can occur any time after Sept. 1. Fall plantings are referred to as dormant seedings, as the seed does not come up in fall when planted but over winters in the soil and germinates the following spring. No-till seeding is best, as it minimizes soil disturbance and brings up fewer weeds than tilling and broadcast seeding. Since it is a dormant seeding, a nurse crop should be used to hold the soil. Annual rye makes an excellent nurse crop. It should be seeded at a rate of 15 pounds per acre at the same time as the prairie seed. Do *not* use winter rye, as it produces toxins in the soil that inhibit germination of other plants.

Former agriculture fields (corn, soybean and small grains) with low weed densities can usually be seeded after only one or two sprayings with Roundup. If perennial weeds are present on such sites, a full year of site preparation prior to seeding is recommended. **Preparing turf sites.** Preparing turf-covered sites for prairie establishment can be accomplished by spraying the area in September with only a 3 percent solution of Roundup. If perennial weeds are present, add a broadleaf herbicide at the appropriate rate. For fall seedings, the dead thatch can be burned off or thoroughly dethatched to remove dead grass. Seed can be distributed directly onto the resulting mineral soil, and winter frost action will position the

seed in the lower soil for spring germination. A no-till turf overseeder can also be used; however, calibration of these machines can be difficult when using prairie seed. To overcome this problem, mix seed with pelletized lime. This dilutes the seed to ensure more even application and also improves the flow of seed through the machine. Application and also improves the flow of seeds through the machine. For spring seedings, till dead turf thoroughly once it turns brown after the fall spraying. This encourages decomposition of thatch over winter. Allow weeds to germinate in spring. Spray with *only* Roundup in late May to kill germinated weed seed. No broadleaf herbicide should be used due to carry-over in the soil that can retard germination of the prairie flowers. When weeds are dead, seed the area with a minimum of soil disturbance. Again, a turf overseeder can be used for applying the seed.

When preparing dead turf for a fall seeding, beware of poor seed-to-soil contact due to thatch buildup in the turf. Not only can thatch prevent the seed from mineral soil contact, it can wick moisture out of the seedbed and cause seedling mortality. The thatch must be removed, and burning thatch off prior to planting is the best method, as it typically burns away the thatch and sod below. Dethatching is a good second choice. Irrigating the planting in the spring and summer of the first year during germination can greatly improve seedling development and survival and is strongly recommended.

PLANTING TIME AND METHOD. Before prairie seed is planted, it should be evaluated. Currently there are no seed-quality standards enforced by state or federal agencies for prairie wildflower seed, and there is tremendous variation in seed quality among suppliers. Many prairie seed blends are sold mixed with leaves, stems, fluff and other nonseed plant parts. Often the actual percentage of germinable seed is 50 percent or less. The only guarantee you have is to know your seed supplier and the quality of the products he or she offers. If you receive seed that contains foreign material and nonseed plant parts (including the pappus, or seed "flyers"), there is a high probability the seed is of low purity and quality. The success of your planting is a direct function of the quality of the seed you plant. Do not accept cheap, low-quality seed if you want your prairie planting to be successful. Prairie seed can be successfully planted from spring thaw through June 30 and from Sept. 1 through soil freeze-up. Planting in July and August is generally not recommended since drought is common during this time. Seed planted too late often does not have sufficient time to develop strong root systems before the onset of winter. If irrigation is available, planting can be extended until July 15. Spring and early summer plantings tend to favor warm-season prairie grasses. Many prairie flowers germinate with spring plantings, while others remain dormant in the soil and come up the following

spring. If possible, irrigate the area for the first two months after planting to encourage high seed germination and survival.

Fall plantings typically result in higher germination of prairie flowers and lower germination of most prairie grasses. The inclusion of a fast-growing nurse crop that germinates in fall, such as annual rye, is generally recommended with fall plantings to reduce soil erosion in winter. Annual rye typically dies in winters in zones 1 to 5 and usually does not present a competition problem the following spring. In the event annual rye does survive winter, simply keep it mowed to a height of 4 inches to 6 inches during the first year as part of the standard weed-control program the initial year of establishment.

To be continued in next issue



PRICE PRAIRIE

By Connie Murray

On May 20th, 2001, several members of the Northeast Chapter of ONPS met some citizens of Bartlesville at a small patch of prairie adjacent to a city park at the south edge of town. The land had been donated to the city by the Price Family with the stipulation that it remain 'natural prairie.' We were invited by Kloma Laws to determine just how 'natural' this area was. Was it worth tangling with the Park Department, which was already mowing paths and planting ornamental crab apples at the perimeter?

The aspect of this area and its species composition support the local lore that this is native tallgrass prairie, never plowed, never grazed by cattle. Particularly when contrasted with the mowed and pruned park to the west or to the abandoned oil field to the north, the natural beauty of the area was dramatic. We identified 26 genera in 14 plant families. As expected, most common were the native bunch grasses, knee high and blue green. Is there any place more fragrant or more beautiful than a tallgrass prairie undulating in the spring breeze? Surely this is worth conserving.

We recommended that they encourage the Park Department to build a walking trail around the perimeter, to reduce the edge effect, and to mow and burn occasionally. If they wanted to have trees, plant native woodland species and attach labels to encourage park visitors to use native trees and wildflowers themselves in their landscapes. Thus, they could make the area not only recreational and attractive, but educational as well.

The outing provided a service to the community. We enjoyed an afternoon on the prairie, on a sunny day in May. And were home before the tornado.



YEAR 2001 ORCHID FIELD TRIP

By Charles Lewallen & Pat Folley

Eleven of us gathered at Raymond Gary State Park at 9 a.m. on August 11. There had been some rain overnight, but it was apparently too soon to trigger the rain lilies (*Cooperia drummondii*). We looked for them in the park and later along the roadsides. My grand exit from the park was marred by a dead battery, but quickly remedied by a jump-start from one of the attendants. On to nearby Schooler Lake, where we parked across the highway and walked into the dry woods, skirting the shallow eastern edge of the lake.

Yes, the orchids were there, and in bloom, though suffering sadly from the drought. While inflorescences of the yellow fringed orchis (*Platanthera ciliaris*) were small, the individual flowers were as beautiful as ever. For those who have never found one before, the "yellow" is a misnomer: they are a mouth-watering orange-sherbet color. Jim Elder pushed on a bit farther, and found one plant in full sun. The outbreak of shutter-clicking nearly drowned out the hum of insects. At Schooler we also saw "nits 'n lice" (*Hypericum drummondii*), and butterfly peas (*Clitoria mariana*) in bloom.

Another start, another dead battery (not mine, this time). The delay served as an excellent excuse to have lunch while resting it, before leaving for Battiest.

The Battiest Bog is a small site near the small town of Battiest, in McCurtain County, where a long abandoned railroad spur holds enough moisture in the woods to create pockets for sphagnum moss and, in good years, an incredible 7 species of orchids. Enroute, we saw the nicest population of meadow-beauty (*Rhexia mariana*) we'd ever found, along with St. Andrew's Cross (*Hypericum mutilum*) and Baldwin's ironweed (*Vernonia baldwinii*). After parking along the narrow unpaved road, we walked into the forest, and found Pat and Chad Cox lounging on camp chairs in the middle of the trail. Skipping that photo-op, we pushed on to find the crane-fly orchids (*Tipularia discolor*) in bloom, but the three-bird orchids (*Triphora trianthophora*) were still in bud. Battiest is usually a great mushroom site, and did not disappoint with a cauliflower mushroom, (*Sparassia spathulata*). There were elephants' foot flowers (*Elephantopus caroliniana*) along the trail.

Driving slowly back to Raymond Gary Park, we found cardinal flower (*Lobelia cardinalis*), jewelweed (*Impatiens capensis*), and monkey-flower (*Mimulus alatus*) along the road. Jim Elder and Berlin Heck had fun handing out jewelweed seed pods and watching the response as the pods exploded in their hands. It is wonderful, even in a dry year after three other dry years, to see the vigor of these tough but so delicate-looking blooms.

This was our first year to make an orchid tour without either Jim Norman or Larry Magrath, both of whom were not well enough to attend. Somehow, we carry on. Could you say that wildflower watchers are as tough as the summer flowers? You who missed the tour can join those who now wish to relive it by viewing the flowers on Charles Lewallen's website: www.biosurvey.ou.edu/okwild/.



CHAPTER ACTIVITIES

NE Chapter
Jim Elder

The hot weather has not discouraged us from enjoying our native plants. Charles Lewallen and Jim Elder drove to southeastern Oklahoma on an orchid outing. The Yellow Fringed Orchid was worth the trip in spite of the hot weather, humidity, and car trouble.

Make Every Home A Wildlife Habitat donated \$100 to ONPS for the volunteer efforts of Connie Murray, Kristie Taylor, Donna Pelkey, and Claire Miller at the 2001 Backyard Habitat Garden tour.

We are working on some fieldtrip ideas for September and October, with outings to the Tall Grass Prairie Preserve, an Eastern Oklahoma loop, and the Cross-Timbers area near Lake Keystone as possibilities. Specific details will be worked out at our next monthly happy hour.

Connie Murray produced a report and species list for the proposed Price Prairie Park in Bartlesville.

Our next meeting is scheduled for September 10th. Donna Horton from the Oxley Nature Center will be presenting a program on native plants and butterflies. The last meeting of the year will be on December 3rd when Pat Folley will be presenting a program.

The Northeast chapter has made arrangements to obtain some of the ONPS articles - cups, shirts,

mouse pads, etc. We will be offering these items for sale at future meetings.

Central Chapter

Susan Chambers and Judy Jordan

Selman bat caves trip:

Thirteen native plant society members went on this trip. We gathered at about 6:30 for orientation by Wildlife Diversity coordinator Melynda Hickman. After a surprise appearance (at least to the uninitiated) by a 3'-4' rattlesnake that also accompanied us out to the bat cave, we were on our way to see close to a million bats leaving their cave to feed for the evening. Before and after the emergence, we learned how the guano from the cave affects the creek and surrounding vegetation, the other night creatures that co-exist with the bats, and such interesting things as how to 'track' spiders at night and how to dip kangaroo rat bottoms in florescent powder to see where they will wander. After the evenings educational portion was pretty much over, we toasted marshmallows and made 'smores', a real treat for those who'd never had them before. At the very last, we had the opportunity to look through a high-powered telescope at a couple or three star clusters and the Andromeda galaxy, as well as the Milky Way and the more familiar stars. Eventually off to bed by about 2 or 2:30 AM. Well worth the drive and losing a nights' sleep.

Field trip to the Chamber's residence:

31 people decided it wasn't going to be hot as ---- and came on out for a guided tour of 2 1/2 acres of our of what had been over-grazed pastureland just 18 years ago. After Wayne was running out of land in the process of garden development and prairie restoration. We met at 9:00 and Wayne led folks through a chronological as well as physical jokes and terrible puns, we stopped to eat brown bag lunches and visit, and all too soon, everybody was heading home again.

Upcoming events:

Many thanks to Susan Chambers for arranging an excellent series of programs and field trips for 2001 and 2002. We hope all members will attend and bring guests. We will continue our practice of sending out reminder cards in advance of meetings



This whimsical birdhouse at the Chamber's is all the more whimsical because it is and has been since installed occupied by a tree frog

and fields trips. Please notify Judy Jordan (321-1611) or Maurita Nations (721-4227) if your address has changed or if you wish to verify that you are on our central chapter mailing list.

Monday, September 24: Central Chapter regular meeting, 7:30pm, probably at Kirkpatrick Horticultural Center, N. W. Fourth and Portland, Oklahoma City. Program will be a presentation by Terry Fisher on "Winter Care of Bluebirds." Members and guests are also invited to bring plants and/or seeds for our annual fall plant exchange.

Monday, October 29: Central Chapter regular meeting, 7:30pm, probably at Kirkpatrick Horticultural Center, N. W. Fourth and Portland, Oklahoma City. Program will be given by Deborah Dalton, Landscape Architect, on "Incorporating Native Plants into the Modern Landscape."

Monday, November 26: Central Chapter regular meeting, 7:30pm, probably at Kirkpatrick Horticultural Center, N. W. Fourth and Portland, Oklahoma City. Program will be a slide presentation

by Frank Carl on "Butterflies and Butterfly Gardens."

There will be no Central Chapter meeting in December.

An Eagle Watch field trip is being planned for January--watch for information on this and spring programs in the next Gaillardia.

Cross-Timbers Chapter
Ron Tyrl

Be sure to register for the Annual Meeting before the October 8 deadline for preregistration. Also, if you have material that you think would be of interest to others, please consider presenting this during the technical sessions. The registration forms for both the meeting and technical presentations is in the Summer issue of the Gaillardia

WELCOME THESE NEW MEMBERS

Matt Albright, Sapulpa
Melanie Beery, Norman
Patricia Cole, Oklahoma City
Patricia L. Daniel, Altus
Lou Duke, Norman
Katherine & Paul Ellgen, Oklahoma City
Charles T. Everett, McAlester
Howard & Cleo Haines, Norman
Lillie Harris, Mead
H. Stanton Hudson, Altus
Mary Beth Logue, Oklahoma City
Nadine McLain, Duncan
Lynn Michael, Claremore
Shirley & Bob Miller, Broken Arrow
Trina Morrison, Oklahoma City
Donna & Charles Pelkey, Tulsa
Penny Powhatan, Park Hill
Kathy Scurlock, Oklahoma City
Carolyn Showers, Norman
Joann Wilson, Blanchard

A GARDEN IS THE SLOWEST FORM OF THE PERFORMING ARTS

Author Unknown

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The Gaillardia

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Edited by Chad Cox
Copy to: 2241 Ravenwood
Norman, OK 73071
Phone (405) 329-8860
e-mail cox.chadwick@worldnet.att.net

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Oklahoma Native Plant Society
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Chad Cox
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The *Gaillardia* can accept material by disk (ASCII, rtf or Word format), e-mail to cox.chadwick@worldnet.att.net.

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