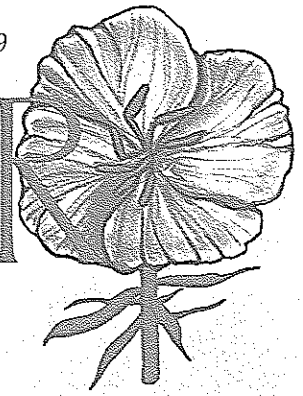


WILDFLOWER



A nonprofit organization dedicated to researching and promoting wildflowers to further their economic, environmental, and aesthetic use.

Wildflower Network Operates in Louisiana

When Louisiana Project Wildflower president Randle Hunt Moore notices aggressive weeds germinating in wildflower plantings, she alerts Louisiana highway department personnel. If they are unable to apply an herbicide, Moore may load a canister of Roundup in the car and treat the planting herself.

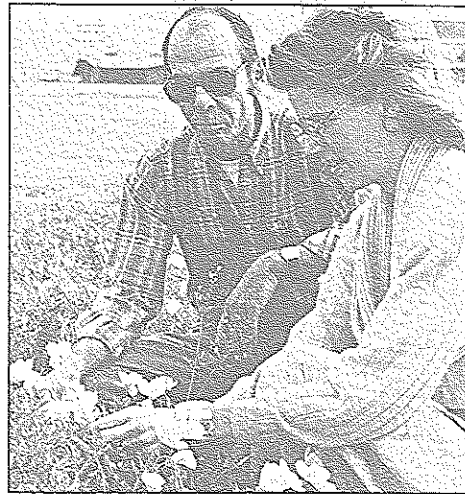
Her organization, Louisiana Project Wildflower (LPW), is a nonprofit group working cooperatively with state government to preserve and plant stands of wildflowers native to Louisiana — *Coreopsis lanceolata* (tickseed), *Oenothera speciosa* (Mexican primrose, pink evening primrose), and others.

Moore, a landscape architect in Alexandria, Louisiana, and a proponent of using wildflowers, started LPW two years ago after groups such as the Lafayette Natural History Museum, and Cenla Pride, part of Keep America Beautiful, had stirred public enthusiasm for wildflowers.

Now, LPW counts around 300 members and is planning its second annual meeting, May 16-17, in Alexandria. David K. Northington, Executive Director of the National Wildflower Research Center, will speak at the meeting.

Moore and 25 other LPW board members form a communications network that plugs into Louisiana district highway departments. Board members call highway personnel to recommend herbicides, mowing, and

other maintenance for existing wildflower stands. State roadside specialists call board members for information, as well.



Robert Rozas, a Roadside Development Specialist for Louisiana, and Randle Moore inspect a stand of *Oenothera speciosa*.

"We stress that we want to be a resource for the highway staff; we're not just going to demand plots of wildflowers," says Moore, adding that board members also try to avoid "constantly calling the staff."

"It's person-to-person work and not always easy. The highway staff recognizes wildflower projects are good, and a lot of them think of projects and get them done. Others are bogged down by personnel and budget cutbacks," says Moore.

LPW members meet regularly with state officials, including Robert Waggoner, Secretary of the Department of Transportation. "You need to keep in the politicians' eyes because they allocate the money, then you work on the nuts and bolts," Moore says.

(Continued on page 6)

Wildflower Handbook Published

The stack of mail the Clearinghouse at the National Wildflower Research Center receives daily is evidence of the public's interest in designing ecology-conscious landscapes with native plants.

Wildflower Handbook, a guide to landscaping with native plants in the United States, is a response to this interest. The handbook, written by Wildflower Center staff and illustrated by wildflower artist Rosario Baxter, is co-published by the Wildflower Center and Texas Monthly Press.

Wildflower Handbook is a source of basic information that can be used by the general public and professionals. Two comprehensive directories list places to buy native plants and seed, and obtain sources of information about them in all 50 states, making up the bulk of the book. The book also tells how to buy wildflower seed in bulk, recreate a prairie, organize a roadside wildflower project, propagate wildflowers from seed, and collect and store seed.

(Continued on page 5)

Catalog Inside!

Research Director's Report: Objectives

The National Wildflower Research Center is strongly committed to basic research on wildflowers and other native plants, and is supportive of activities and efforts that promote their conservation and utilization. Our natural plant communities have been reduced in size and significantly altered by the loss of critical plant and animal species and by the addition of nonnatives. World population, which now exceeds 5 billion, has put great pressure on our land to produce more food. More and more land, much of it marginally arable, is being cleared for cultivation. There are, in temperate North America, some 20,000 species of native plants with about 3,000 at risk of extinction, mostly as a result of habitat loss. A similar percentage, but a higher number, of animal species also is at risk.

The loss of these vegetative communities, besides being a primary cause for species extinction, reduces natural erosion control, removes much of the genetic potential from such populations, and replaces the natural vegetation in resting and feeding habitats for regional fauna

with a much reduced diversity of cultivars and other nonnative plants. This vegetation supports proportionately fewer animal species, upon which plants depend for such ecological services as pollination and seed dispersal.

Endangered species require special attention, but more information is needed about all organisms. Experimental studies conducted by the Wildflower Center and similar organizations probably should emphasize the most common species. What is learned from them then can be applied, at least in general terms, to species with more limited populations. It is important to understand organisms in context of their relationships to other species in their communities.

For most native plants we also need to know such things as general range or distribution, which species are common, and which are rare. We need to know specific habitat preferences and the breadth of their ecological tolerances, flowering times, breeding systems, and how plants are pollinated. As such data is accumulated, we should gather information on

basic methods of propagation and the general culture conditions required to bring plants to flowering and fruiting stages. The knowledge required is essentially the same, whether we wish to establish plants in gardens or reestablish native vegetation in disturbed sites such as parks, roadsides and private land.

Answers to such questions, especially those related to interspecific interactions, are a primary objective of the research program at the National Wildflower Research Center. A number of exciting research projects are underway at the Center, including an experimental prairie. The Center's Spring Season, from April 11 to May 21, offers visitors an excellent opportunity to learn about these projects and the Center's research program.

John Averett, Ph.D., is Research Director at the National Wildflower Research Center.



Wildflower

Founder: Lady Bird Johnson
Executive Director: David K. Northington, Ph.D.
Editor: Candace Kiene
Art Director: Patty Alvey
Copy Editors: Beth Anderson, Jim Hankins

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Wildflower Center Events

Spring at the Wildflower Center means color and a calendar full of wildflower events. Set aside time for good times during **Spring Season** at the Center, from Tuesday, April 11, through Sunday, May 21. Hours are Tuesday through Thursday, from 10 a.m. to 1 p.m., and Sunday from 1 to 3 p.m. Everyone is invited to the Center to take wildflower walks, tour the facility, and learn about the Center's efforts to conserve wildflowers and other native plants, and use them for environmental benefits.

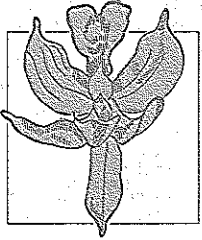
Wildflower Days are Saturday and Sunday, April 15-16. Hours are from 10 a.m. to 4 p.m. on Saturday, and from 1 to 4 p.m. on Sunday. This is the Center's annual spring festival, with wildflower tours, speakers and demonstrations, a seedling sale, wildflower arts and crafts, and a kids' corner. Visitors may shop for wildflower T-shirts, books, potpourri, and other items. Refreshments will be available.

Center staff members will take wildflower information on the road to the **Lawn and Garden Show**, March 18-19, in Hope Arena/Moody Gardens in Galveston.

Wildflower Roads

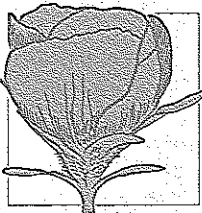
One of the most outstanding sights wildflower photographer Bill Bransford has focused on in the spring is the area from Uvalde to Del Rio, Texas. "You see every kind of wildflower imaginable — yellow, red, white — it all goes together. Engelmann daisy, paintbrush, coreopsis, winecups, white yuccas and red cactus flowers are blooming. Late April and early May are the best times; I'm driving to see them the first week in May," says Bransford, who has photographed wildflowers across the country for over 25 years.

As fresh breezes hint of spring, photographers and other wildflower enthusiasts begin to chart paths toward wildflowers. Here are some routes to follow to sights as diverse as delicate wetland orchids and hillsides painted with poppies. More regions (where wildflowers bloom later) will be covered in the May/June newsletter. Watch for it!



Southeast

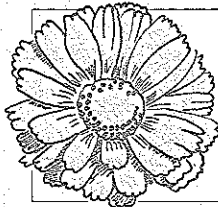
In the southeastern United States, the route from Louisiana to the Florida panhandle offers a wealth of wetland species from April through May. From the eastern Louisiana border, take Interstate 10 east, turn south onto Highway 85 to Valparaiso, then follow Highway 20 to Tallahassee. On this route, you'll find "pitcher plants galore," says Bransford. As many as eight *Sarracenia* (pitcher plant) species are represented, as well as *Calopogon tuberosus* (grass pink). One of the best places to see orchids is the Okefenokee Swamp.



Central Texas

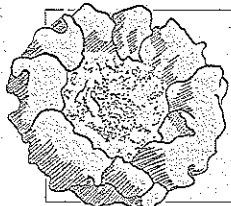
Moving west, a Texas area that often has spectacular displays is the Highland Lakes region in Central Texas. The Highland Lakes area extends along the Colorado River west of Austin in the Hill Country. From mid-March to April, in response to

good fall and winter rains, fields of *Lupinus texensis* (Texas bluebonnet), *Castilleja indivisa* (Indian paintbrush), *Argemone albiflora* (white prickly poppy), and *Callirhoe digitata* (winecups) lavish the landscape with color. The Willow City loop is an excellent route. Take Highway 290 West from Austin and turn north on Highway 281 to Johnson City, then west on RR 1323 to Willow City. You can complete the loop by heading south on Highway 16 to Fredericksburg, or go north to Llano. The Highland Lakes Wildflower Club presents an annual wildflower display, scheduled this year for the first weekend in April. Call the Highland Lakes Tourist Association for details on wildflower events, (512) 478-9085.



Big Bend

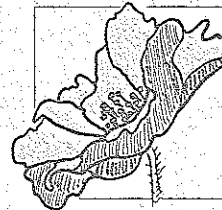
Part of the Chihuahuan Desert, Big Bend areas vary considerably in elevation, temperature, and moisture, creating diverse habitats for plants. Highly dependent on rainfall, desert wildflowers appear in small, scattered pockets, rather than extensive fields. Starting in late February, the first species to bloom include the tall *Lupinus havardii* (Chisos bluebonnet), *Baileya multiradiata* (desert marigold), and *Yucca* spp. From March through May the progression of wildflowers and cacti in bloom continues. For an especially scenic drive, en route to Big Bend take Highway 90 west from San Antonio. The stretch from Uvalde to Del Rio is usually abundant with wildflowers. The Big Bend National Park staff lists species in flower and their locations throughout the spring. Call (915) 477-2251.



Arizona

Arizona offers a glimpse of a different desert — the Sonoran. The region is characterized by a high percentage of arboreal and succulent plants, including the giant saguaro

cactus or *Cereus giganteus*. One of the richest areas for desert wildflowers and cacti is the Chiricahua National Monument in the southeastern corner of the state. Touted as the only place in the United States where you can travel from low desert to above timberline in less than six miles, this area begins to show color in April and continues through late summer. From Willcox, Arizona, take Highway 186 southeast to the park entrance. Species within a 50-mile radius are represented here, including fields of golden Mexican poppy or *Eschscholzia mexicana*.



California

Visit the southern part of California for early spring wildflowers. Northeast of San Diego in Julian, the Julian Woman's Club presents a wildflower exhibit for one week in May. Go east from San Diego on Interstate 8 to Highway 79, then north to Julian. Thirty miles southeast of Julian, view desert wildflowers of the Borrego Valley at Anza-Borrego Desert State Park. Or, outside of Los Angeles follow Highway 14 northeast to Lancaster to see wildflowers of the high desert steppe (2,800-3,000 feet). Lancaster Woman's Club members gather wildflowers for an exhibit at the Lancaster Museum/Art Gallery, to be held April 1-16, from 9 a.m. to 3 p.m. Continuing on Highway 14, take the Avenue "I" exit to reach the Antelope Valley California Poppy Reserve. This 1,800-acre area displays some of the finest expanses of California poppies or *Eschscholzia californica*. Call the Lancaster hotline number (see page 4) for an update on species in flower.

To share favorite wildflower locations, write the Clearinghouse, National Wildflower Research Center, 2600 FM 973 North, Austin, Texas, 78725.

Beth Anderson,
Resource Botanist,
National Wildflower Research Center

One Romantic Evening

Just after sunset on spring and summer evenings, evening primroses growing from the northeastern United States to Southern California begin opening their blooms to the night sky. Night-flying insects are attracted by the flowers' scent, which intensifies at dusk. These pollinators navigate accurately toward the light-colored blossoms — yellow, white or pink — that stand out against the night sky. The flowers usually last one evening, closing by noon and dying, to be replaced by a new bloom the next night.

Evening primroses are not true primroses, which belong to the Primulaceae family. Evening primroses belong to the Onagraceae family, and are members of the genus, *Oenothera*. Onagraceae also includes such familiar genera as *Clarkia* (farewell-to-spring), *Epilobium* (fireweed), and *Fuchsia*. In this family, flower parts usually occur in multiples of four: four sepals, four petals, and eight stamens. The *Oenothera* members have distinctive, cross-shaped stigmas and inferior ovaries that form a dry fruit. The genus includes about 100 species.

Evening primroses form colonies by extending underground stems, and during the first year they develop strong root systems, hence are resistant to fire and drought. Seed for some *Oenothera* species is commer-

cially available on a local basis, and also from a small number of major seed producers.

Everything was
a sheer glorious pink...
It was evening primrose —
one of the most exquisite and
feminine of all wildflowers.

Lady Bird Johnson
Wildflowers Across America, 1988

One of the largest species of *Oenothera* is *O. hookeri* (Hooker's evening primrose). This biennial plant forms a rosette of leaves the first year, then bolts to eight feet tall and flowers the next year. *O. hookeri*'s yellow flowers grow from two to three inches wide. The petals look uniformly yellow to humans, but to insects, which have ultraviolet vision, they appear yellow and purple. *O. hookeri* produces abundant seed that is high in oil and is used in products such as soap and pharmaceuticals.

On the eastern side of the United States, from Texas to North Carolina and northward grows *O. biennis* (common evening primrose). This perennial plant is similar to *O. hookeri*

and grows up to seven feet tall. The flowers are yellow, with petals one-half to one inch wide. The seed is high in oil extracts.

Oenothera macrocarpa (Missouri evening primrose), ranges from North Central Texas to Nebraska, and east to Missouri. It grows only eight or ten inches tall, but has large, showy, yellow flowers that are three inches in diameter. This plant thrives in full sun and has low water requirements, characteristics that make it a good rock garden plant. Contrary to its common name, this evening primrose often blooms in the day.

Oenothera speciosa (pink evening primrose) is, in spite of its name, a day bloomer in much of its range. In Central Texas and southward it blooms in the day; north of Central Texas it blooms in the evening. *O. speciosa* has two-inch pink flowers, is mostly a sprawling plant, and can grow to two feet tall. It blooms along roadsides and in open prairies in Texas, Kansas and Missouri. Pink evening primrose appears on the National Wildflower Research Center's newsletter, letterhead stationery and other items as part of the Center's logo.

Elinor Crank,
Research Horticulturist,
National Wildflower Research Center

Hotlines - Hotlines - Hotlines - Hotlines - Hotlines

To find out what's blooming in Texas, call the National Wildflower Research Center's **Wildflower Hotline** from mid-March to the end of May. A five-minute, updated message will tell you what is in bloom and routes to travel to find the best wildflower displays. Since the first hotline was a great success last year, the Center has expanded service, with Austin radio station KKMJ-MAJIC 95 FM as cosponsor.

The line can handle hundreds of calls at once, which means fewer busy signals! Call (512) 329-3900 by push-button phone, wait for the signal, and punch in 5565 (KKMJ).

The State Arboretum of Utah opens the **Utah Wildflower Hotline** on April 1: (801) 581-4969. The **Desert Botanical Garden** in Phoenix provides a message on Arizona wildflowers, beginning in March: (602) 941-2867.

In California, east of San Diego, **Anza-Borrego State Park** usually provides a spectacular wildflower display. Call (619) 767-4684. Rain is irregular, so desert flowers can bloom anytime, February to April.

In March, call the **Poppy Reserve** hotline at (805) 724-1180. The Lancaster Woman's Club opens a hotline for the **Antelope Valley** area in April; (805) 948-1322.

Guest Review

Wildflower Handbook

Recently the influential trade journal, *American Nurseryman*, ran a vivid cover photo of a burning prairie landscape surrounding a corporate headquarters. The prairie was being burned to help the grasses grow. Such interest in native plant landscapes was almost unheard of a few short years ago.

Now large and small nurseries are offering both woody and herbaceous natives and actively searching for additional native species. "Meadow-in-a-can" displays abound at local garden centers. The *Magazine Index*, which reviews 400 magazines, indexed 85 articles on wildflowers and meadows between September 1984 and August 1988. Interest in native plants is at an all-time high.

The idea of retaining the regional landscape by using native shrubs, trees, grasses and perennials has considerable merit. Substitution of drought-resistant natives for plants with high water requirements is a must in dry areas. Native wildflowers are also a welcome addition to gardens. Some misconceptions have arisen, however, such as the idea that you can just scatter wildflower seeds about for instant beauty.

In light of all this, the publication of the National Wildflower Research Center's *Wildflower Handbook* is timely. The book is loaded with badly needed factual information.

Where else could you find well-written instructions on establishing a drought-resistant buffalo grass lawn that needs little mowing and even less water? The Wildflower Center's staff has also provided detailed instructions on the direct seeding of wildflowers. What this reviewer really likes is the fact that the writers are cautionary about what to expect from meadow plantings.

Some reviewers seem to think it is their job to find fault with the book reviewed. Perhaps that could be done with this new work, but the merits of *Wildflower Handbook* clearly outweigh any minor faults. I highly recommend *Wildflower Handbook* to home gardeners as well as professionals in the nursery and landscape industries.

*Samuel B. Jones, Jr., Ph.D.,
Professor of Botany,
The University of Georgia, Athens*

Handbook Published

(continued from page 1)

Over a three-year period, Wildflower Center staff surveyed some 300 nurseries and seed producers, and 400 information sources, including heritage programs, conservation organizations, government agencies, botanical gardens, and native plant societies. In addition, individuals across the country contributed information they have gained working with native plants.

Beginning in late March, *Wildflower Handbook* will be available to bookstores across the country. The book will also be available at the Wildflower Center, and can be ordered from Texas Monthly Press. The approximately 344-page handbook is \$9.95 plus applicable taxes.

Coming Up

Watch your mailbox and news media for details about the following special events...**Wildflower Weekend** in historic Round Top, Texas, April 8-9. Gate receipts will benefit the National Wildflower Research Center...**Butterfly Gardening** seminar, presented by the Wildflower Center on March 23 at The Arboretum in Austin, Texas...**Iowa Operation Wildflower Workshop** in Decorah, Iowa, May 19-20...**Membership Open House** at the Wildflower Center...**Wildflower Photography** lectures and workshops in Santa Barbara and Berkeley, Cal. (May) Denver (June), and Washington Crossing, Pa. (July). For more workshop information, see page 6.

From the Field

Gardens of a New Nation: 1785-1930 March 11, Connecticut State Museum of Natural History, Storrs, Conn. Slide lecture by landscape architect Rudy Favretti covers Early American interest in native plant gardens. Contact: (203) 486-4460.

Landscape Ecology Symposium March 15-18, Fort Collins, Colo. Contact: Ingrid C. Burke, (303) 491-1620.

Poppy Day April 8, Theodore Payne Foundation Nursery, 10459 Tuxford St., Sun Valley, Cal. Wildflowers at the state's original native plant nursery; plants for sale. Contact: (818) 768-1802.

Home and Garden Open House April 9, Historical Society of Southern California, 200 East Avenue 43, Los Angeles. See a water-conserving garden, yarrow meadow, and wildflower plot. Contact: (213) 222-0546.

Solving Environmental Problems: The Past as Prologue to the Present April 27-30, Olympia, Wash. Contact: Carol Simila-Dickinson, (206) 866-6000, ext. 6405.

Riparian Resource Management May 8-12, Billings, Mont. On-the-ground management of riparian areas (areas relating to or on the bank of a natural watercourse, lake, or tidewater). Yellowstone Park within driving distance. Contact: Andrea Darling, (406) 652-5197.

Wildflower, Native Plant, and Seed Sale May 13-14, Brandywine River Museum, Chadds Ford, Pa. Wildflowers and native shrubs grown from seed or division. Contact: FM Mooberry, (215) 388-7601, ext. 127.

(Continued on page 6)

Network (continued from page 1)

LPW members also carry out local projects. LPW's Baton Rouge group has raised funds for research on natural re-seeding. In Alexandria, "Wildflowers are planted in medians from one end of the city to the other," Moore says.

LPW members primarily plant native Louisiana wildflowers, but high-color annuals and wildflowers native to other regions may be planted at strategic locations, such as city entrances. "It's the fire engine tactic to get attention, but not our focus," says Moore. A long-term project is to establish Louisiana Wildflower Trace, a network of preserved native wildflower stands and new plantings.

LPW has planted 600 acres of wildflowers, and highway personnel "are 100

percent more receptive to us now than at this time last year," Moore says. LPW's goal is to turn the preservation and planting program it is building over to the state highway system.

Sketch Quick

The Garden Club Federation of Pennsylvania and the Pennsylvania Department of Transportation are cooperating in a statewide planting program. In conjunction, a design contest is being held for a permanent metal marker for wildflower areas. You must live in Pennsylvania to enter, and entries must be received no later than March 24. For details, call (215) 565-4997.

From the Field

(continued from page 5)

Wildflower Photography Lectures & Workshops. Cosponsored by Eastman Kodak Company, and National Wildflower Research Center. Instructor: John D. Smithers, DeHart Media, Austin. Cities, dates, and contacts: Austin, April 14-16, Debra White, (512) 476-4113. San Antonio Botanical Center, March 31-April 2, Betty Hughes, (512) 821-5115. Fort Worth Botanic Garden, April 21-23, Jana Johnson, (817) 870-7687. Riverside, Cal., University of California Botanic Gardens, May 5-7, Shelly Lisker, (714) 787-4111. Portland, Oreg., Berry Botanic Garden and Leach Botanical Park, May 26-28, (503) 636-4112.

Celebrate Spring! Join the National Wildflower Research Center

Members of the National Wildflower Research Center support wildflower work across the nation. Benefits include *Wildflower*, the newsletter and *Wildflower*, the journal; 10% discount on unique Center products such as wildflower books, calendars, T-shirts and sculpture; special advance notice of and discounts to Center seminars; wildflower tours; a membership card and priority handling of requests to the Center's Clearinghouse of wildflower information.

- \$25 Supporting Member.** All benefits listed above.
- \$50 Sustaining Member.** All the above plus a set of specially commissioned wildflower note cards.
- \$100 Key Member.** All the above plus wildflower garden apron and invitations to special events.
- \$250 Center Sponsor.** All the above plus annual limited edition wildflower poster.
- \$500 Trust Member and \$1000 Benefactor.** All the above plus special privileges.

* Thank you! Your contribution is tax deductible to the extent permitted by applicable law.

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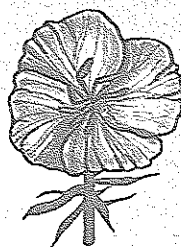
- Make your check payable to: NWRC
- Mail to: Membership, National Wildflower Research Center, 2600 FM 973 North, Austin, Texas 78725-4201

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