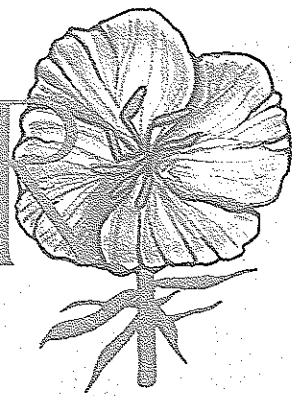


# WILDFLOWER



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

## Native plants provide a wealth of foods, fibers

Native Americans once relied on the wealth of native vegetation for all aspects of life — for food, shelter, tools, medicines, and ritual. Modern society has only just begun to rediscover and explore the possibilities native plants offer for sustainable landscapes and agriculture. Although the fall color of maples in New England bespeaks the economic importance of their sweet sap in early spring, thousands of other species across our land lie untapped.

When Lewis and Clark made their famous trek west, native peoples introduced the explorers to native plants along their route. Sacajawea, their Shoshone Indian guide, showed them how to cook biscuit-root (*Cogswellia coux*), one of several roots that would sustain their diet during the years of their journey. This root, which forms a series of small balls stacked on top of each other, each in descending size, is dug only after its seeds are ripe. Oregon Indians used it in the ceremony of the root feast, where singing and chants of thanksgiving preceded their meal. Meriwether Lewis found the tubers of arrowhead (*Sagittaria latifolia*) to be "nearly equal in flavor to the Irish potato" when boiled or roasted, and he purchased this staple from the Native American women who collected it in shallow waters by separating the bulb from the root with their toes, then floating the bulb to the surface.

In the inter-mountain region a beautiful blue-flowered lily, camass (*Camassia esculenta*), blooms in moist meadows in the early spring. Once an abundant bulb, it was roasted in wide open pits, the black skins removed, and the warm flesh pressed into cakes that had the aroma of vanilla and the taste of brown sugar.

Nuts and seeds were also important

food sources, much as they are today. In woodland regions, acorns of several varieties were soaked to split the shell, and the kernels ground into meal. By lining a sand pit with cedar twigs and pouring water through the meal, the bitterness was leached out and a sweet gruel or bread could be made. Pinyon pine as well as digger pine, common in parts of California, Utah, Nevada, Arizona, and New Mexico, renders a delicious nut, roasted simply by throwing the cones directly into the fire.

The unique culture of the Southwest grew up around the early domestication of Indian corn (*Zea mays*), and the wild rice (*Zizania palustris*) of the Great Lakes states is still harvested by the Ojibway from canoes.

Buffalo-berry (*Shepherdia argenta*), which makes a lovely hedge, has bright red berries that were eaten raw or dried for winter.

Local species of blackberries (*Rubus* spp.), huckleberries (*Vaccinium* spp.), and gooseberries or currants (*Ribes* spp.) offer a variety of

palatable fruits from coast to coast.

Today, the foods we eat, the fibers of our clothing, and the materials of our homes are no longer adapted from our locale. Fruits and vegetables shipped from distant states or countries and the synthetic materials made possible by petroleum have replaced a traditional knowledge of the land and use of its self-sustaining biological communities.

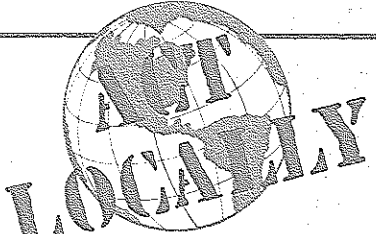
However well our European ancestors knew the vegetation of the Old World, we have not yet become so well acquainted with America's native flora.

We cherish the fine-grained walnut, maple, or black cherry furniture that has outlasted its makers, the colonizers, who once thought the forests of the continent to be inexhaustible. But replanting the walnut or the wild cherry tree, along with many other native species, is too often forgotten. The small fragments of our rich natural vegetation that we have retained in our planned landscapes ties us to our past, and to our "place."

If you would like to learn more about native plant uses, a bibliography of resources is available from the Wildflower Center's Clearinghouse. Members can receive this information sheet free by sending a self-addressed mailing label to the Clearinghouse, at the address listed on the back page. (Non-members please include a self-addressed envelope with first-class postage.)

Bonnie Crozier  
Resource Botanist  
National Wildflower Research Center





Call the highway department's local district if you see the department mowing before wildflowers and grasses have set seed.

**CATALOG INSIDE!**

## Letter from the President

What began as a dream of Mrs. Johnson's just eight short years ago has become an established institution whose work is recognized throughout our nation. Supported by more than 15,000 members, an impressive group of devoted trustees, and a hard-working professional staff, the National Wildflower Research Center is the only national organization whose mission is the accumulation and distribution of knowledge essential to the preservation and re-establishment of native wildflowers, grasses, shrubs, and trees.

With the solid base established by Mrs. Johnson, founding president Nash Castro, and many

others, we are ready now to respond in full to the American people's ever-increasing interest in protecting our fragile environment.

Our plans are ambitious and exciting! Thanks to Mrs. Johnson and several other generous contributors, we are hoping for a new facility on a scenic 37-acre site in Austin. This would allow for substantial expansion of our current programs — especially on-site educational exhibits, plantings for visitors, and other extensive seminars and conferences.

Plans are being developed for tripling our membership. We have established a Midwest Regional Office in Minnesota to create programs for that area of the country,

and other regional branches are being considered. A search is under way to add a professional education director to our staff.

Those of us fortunate enough to be involved with the Center share a thrilling experience — that of making a major contribution to our country's environmental needs.



Dana G. Leavitt is president of the Board of Trustees of the National Wildflower Research Center.

## WILDFLOWER CENTER NEWS

A number of Wildflower Center members from the Boston area helped greet the public at the Center's booth at the New England Spring Flower Show in Boston in March. The days were long at the event (8 a.m. to 9:30 p.m.) and members relieved staff for a couple of hours each day.

Research staff members have been presenting talks across the country. Elinor Crank, research horticulturist, spoke about establishing wildflower meadows at the "Creating Landscapes with Wildflowers and Native Plants" conference in March in Phoenix, Ariz. The conference was co-sponsored by the Wildflower Center and the Desert Botanical Garden. Community Ecologist Alison Hill presented a paper in April about the ecology of the pinyon-juniper woodlands of New Mexico at the Southwest Association of Naturalists in El Paso, Texas.

More than 50 long-time and new volunteers completed orientation sessions in February and March, which included a thorough overview of the Center's operations and a review of the numerous volunteer opportunities available.

Research Director John Averett will talk about native plants in the urban landscape at the June meeting of the Society for Economic Botany in Claremont, Calif. Elinor will present a paper on the interactions between plants within plant communities, and

Resource Botanist Beth Anderson will present a paper on the Center's reconstructed prairie at the American Association of Botanical Gardens and Arboreta annual meeting in Chanhassen, Minn., in June.

The *Wildflower* newsletter has received an Achievement Award from the Texas Society for Technical Communication's Technical Publications 1990-1991 Competition. *Wildflower*, Journal of the National Wildflower Research Center received the Award of Merit in the same competition.

The Alamo Chapter of the Telephone Pioneers of America distributed more than 2,500 copies of the Wildflower Center's educational poster to schools in the Central Texas area in March and April. The posters were underwritten by Southwestern Bell Telephone. The Center hopes to gain more corporate sponsorships. Please contact Peggy Budd at the Wildflower Center for more information.

Correction: Niche Gardens, a native plant nursery owned by Kim and Bruce Hawks, is located in North Carolina, not Tennessee, as reported in the March/April 1991 newsletter.

### Wildflower

Founder: Lady Bird Johnson

Executive Director: David K. Northington, Ph.D.

Editor: Tela Goodwin Mange

Graphic Designer: Elaine Walker

Copy Editors: Beth Anderson, Dyanne Cortez, Jim Hankins

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# Aggressive Russian olives invading Midwest and Plains

The Russians are here!

The Russians I'm referring to are Russian olives (*Eleagnus angustifolia*) and they are fast becoming an enemy in the Midwest and Plains.

When I moved to Minnesota in 1969, I saw my first Russian olive in Hastings Park. I still remember its attractive silvery foliage, dark bark, and almost sculpture-like form.

As a landscape designer in the 1970s, I installed many Russian olives in my landscape plans, although we worried then about the verticillium wilt that besieged the plant, rendering it wilted, brown, and partially dead. (Wisconsin nurseries actually stopped producing and selling it for awhile.) But the wilt passed and we continued planting the Russian olive, which is a native of Europe. After all, besides its aesthetic strengths, the plant also tolerates a wide range of soils, droughty conditions and a cold climate. We all planted a large number of the plants for screens and windbreaks.

But the Russian olive's broad range of tolerance is making it an enemy! When birds carry the tasty berries across the landscape, the dropped seeds have no problem

establishing anywhere, and the plants quickly take advantage of each new opportunity.

On a recent cross-country trip through Iowa, Nebraska, Colorado, and New Mexico, I saw Russian olives

trees. But that method further degrades the pastures, allowing pioneer weeds to quickly take advantage of the disruption.

I have no easy solution for stopping any of these aggressive plants.

But, based on my observations

during my driving trip, I will no longer plant or recommend planting Russian olives. If you need to see for yourself, you also can take a driving trip — not cross-country — but simply along T.H.

169 south of Shakopee, Minn.

You will see pasture land dotted with Russian olives

spreading across the landscape.

Birds aid the Russian olive's movement, and its broad range of tolerance allows its easy establishment. Believe what you see — we have a problem with this Russian!

Bonnie Harper-Lore  
Midwest Office  
Program Coordinator



Aggressive Russian olives are a menace to the Midwest region of the United States.

growing in pastures and river valleys, displacing prized grazing land and replacing valuable lowland wildlife habitat. The trees can be as much of a problem as red cedar in the Midwest and mesquite in the Southwest. Because all these plants are easier to establish than to eliminate, severe vegetation management techniques are used, further disrupting and degrading the land.

For example, in Texas, native juniper and mesquite trees are "chained off" by bulldozers dragging chains to uproot the

Bonnie Harper-Lore, program coordinator of the Wildflower Center's Midwest Regional Office, spoke this spring at the University of Wisconsin Arboretum in Madison and at the Michigan Wildflower Association's annual conference in Detroit.

Midwest Office information officer Maria Urice and Bonnie presented a number of talks at local workshops, conferences, and garden club meetings this spring. The staff also appeared on a call-in talk show on radio station KUOM in Minneapolis to discuss "Native Plants for Residential Use."

Bonnie has met with Bloomington,

## MIDWEST UPDATE

Minn., city officials to discuss changes in the city's lawn ordinance. The city is interested in making changes that will allow the use of native vegetation in planned landscapes.

This spring, the Minnesota-based environmental group "Kids for Saving Earth" distributed packets of wildflower seeds through Target stores to kids across the United States. The regional office was part of

the initial planning stages of the project, defining species lists, locating seed sources, and advising the project coordinators about the importance of using native plants.

A traveling display for the regional office is now available.

The book *Vascular Plants of Minnesota: A Checklist and Atlas*, by University of Minnesota emeritus professors Gerald Ownbey and Thomas Morley, is now available. The regional office is co-sponsoring a book-signing with the Minnesota Native Plant Society to honor the authors.

## Membership Department makes sure you belong

The thousands of National Wildflower Research Center members have one thing in common: their interest in wildflowers and native plants.

When Wildflower Center staffers meet members, they're always impressed with the members' knowledge of native flora.

"We're always amazed and delighted to learn how knowledgeable and enthusiastic members are about native plants. It's always a treat to discover," says Mae Daniller, director of development.

The Center's membership program started in 1984 with 1,700 members at year's end. Now, more than 15,000 people are members of the Wildflower Center.

Mae says the staff is always eager to serve Wildflower Center members better. "We want you to tell us what you like and don't like."

Besides Mae, two other Wildflower Center staff deal directly with members' concerns. Tony Martinez processes and maintains the Center's membership records, and Marianne Pfeil deals personally with member correspondence.

Wildflower Center members receive the newsletter and the journal as part of their membership benefits package. Both award-winning publications were developed to respond to members' requests for native plant information.

Other membership benefits in

the Center include free, priority handling of information requests from the Clearinghouse, a 10-percent discount on purchases through the gift shop and catalog, plus invitations to seminars, tours, and a special membership open house each year.

Sometimes members forget that the Clearinghouse can provide free native plant information; Mae wants to encourage you to take advantage of the service.

"Even if you live in Oregon, or North Carolina, or New York, or anywhere else, members can write to us and get free information on wildflowers and native plants," she says.

The seminars, tours, and open house allow Wildflower Center staff members to meet their "constituents."

"We know we can't meet each and every one of our members, but we want to meet as many of them as we can," Mae says.

Mae says the Center's goal is to grow to 35,000 members by 1994. Even when membership becomes that large, she says, the Membership Department will still be eager to serve members with the same prompt and caring attitude.

"The greatest compliment a current member can give us is to give a gift of Center membership to a friend! Then we know that you appreciate our programs and benefits so much that you wish to share them with others," Mae says. "It makes us all feel good!"

## New book offers "wildflowers all year long"

Wildflower Center trustee Bette W. Castro has published a book of poetry celebrating the beauty of American wildflowers.

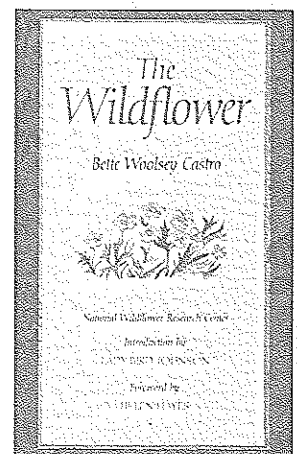
The hard-bound 5-inch by 7-1/2 inch book, with 48 pages and illustrated with watercolors by Marjorie Stodgell, features an introduction by Lady Bird Johnson and a foreword by Helen Hayes — co-chairs of the Wildflower Center.

Miss Hayes says the book has given her "spring on the coldest, darkest, winter days and wildflowers all year long."

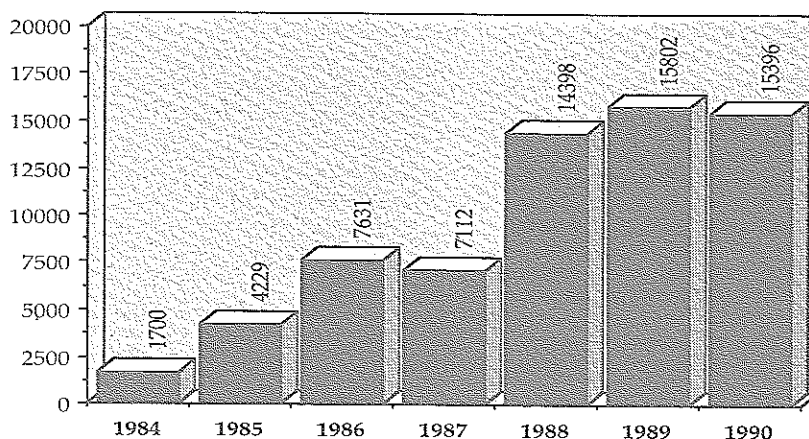
A portion of the book's proceeds benefits the Wildflower Center.

Mrs. Johnson says the book "speaks to the heart. (Bette Castro) has captured the essence of wildflowers, giving us a heightened sense of community with the natural world."

Copies of *The Wildflower* are available from the Wildflower Center for \$9.95, plus \$3 shipping for each book. Please use the order form in the enclosed catalog, or write to "Books," at the address listed on the newsletter's back page.



Membership Growth  
1984 to 1990



FROM THE  
**F·I·E·L·D**

Montana Native Plant Society  
Annual Spring Meeting, May 3-5,  
Glacier National Park, Kalispell,  
Mont. Contact: Kathy Ake,  
Montana Native Plant Society, P.O.  
Box 992, Bozeman, Mont. 59771-  
0992, (406) 755-7693.

Wildflower Workshop, May 5-6,  
Salina, Kansas. Sponsored by the  
Kansas Wildflower Society and  
Kansas Associated Garden Clubs.  
Contact: Kansas Wildflower  
Society, Mulvane Art Center,  
Washburn University, 17th and  
Jewell, Topeka, Kansas 66621.

Wildflower Workshop, May 19,  
Quartz Mountain State Park,  
Southwestern Oklahoma. Contact:  
Quartz Mountain State Park, (405)  
563-2238.

Rare Day II, Rhode Island Wild  
Plant Society, May 25, West  
Greenwich, R.I. Contact: RIWPS,  
12 Sanderson Rd., Smithfield, R.I.  
02017-2606, (401) 949-0195.

Alabama Wildflower Society  
Annual Meeting, May 25-26,  
Tuscaloosa, Ala. Contact: George  
Welch, 20 Frederick Drive,  
Tuscaloosa, Ala. 35401.

Conservation and the Use of  
Native Plants in the Gulf Coastal  
Plains, June 13-15, Tulane  
University, New Orleans. Contact:  
Natives, P.O. Box 2355, Covington,  
La. 70434, (504) 892-5424.

American Association of  
Botanical Gardens and Arboreta,  
June 19-23, Minnesota Landscape  
Arboretum, Chanhassen, Minn.  
Contact: AABGA, 786 Church  
Road, Wayne, Penn. 19087.

## Fungi enlisted to aid mountain laurel

Texas mountain laurel (*Sophora secundiflora*) is a native Texas shrub of the Fabaceae (pea family). With its fragrant, early-spring lavender flowers, it is an excellent choice for native or conventional landscape planting. Texas mountain laurel is currently grown as a nursery crop, but it tends to grow slowly once it is moved into a landscape planting location. Research at the Wildflower Center on *S. secundiflora* is focusing on the problem of slow establishment and continuation of growth following transplanting.

Research horticulturist Elinor Crank and visiting scholar Michael Dana are testing the theory that post-transplanting growth will be improved if the nursery-produced root system is allowed to develop as it would in the wild.

In the wild, many plant roots become colonized with beneficial fungi called endomycorrhizae. Also, roots of plant species in the pea family often become colonized with nitrogen-fixing bacteria called *Rhizobium*, which develop nodules on the plant roots and allow the plant to

use nitrogen directly from the atmosphere for growth.

In the study, seedlings are being inoculated with *Rhizobium* bacteria, with the spores of endomycorrhizal fungi, or a combination of both. Each inoculation treatment is being tested at various rates of both nitrogen and phosphorus fertilizer. Soil fertility can have dramatic effects on the rate of fungal root infection and bacterial nodulation.

## RESEARCH U·P·D·A·T·E

The plants are being grown in containers in a greenhouse. Plant development will be monitored and after several months, the root systems will be evaluated for nodule formation and mycorrhizal establishment.

Later, a portion of the plants will be transplanted to a field location. Data will then be collected on post-transplant performance.

## WILDFLOWER OUTLOOK

Poppies, yes; litter, no... R. David Herndon, a California business relations consultant, is spearheading a group that hopes to eradicate California highway litter and bring the California poppy back to the state's highways.

The bright yellow-orange California poppy is the state flower.

Herndon and his group, California Poppies, Instead of Litter!, are distributing the seeds to California residents who want to plant the seeds in the state.

Herndon launched the anti-litter campaign two years ago, distributing more than 100 pounds of poppy seeds.

California residents can receive California poppy seeds by sending \$2 and a self-addressed, stamped envelope, to California Poppies, Instead of Litter!, P.O. Box 1718, Dept. 1991, Pleasanton, Calif. 94566.



A California wholesale native plant nursery is inoculating plants with mycorrhizal fungi that is local to the

areas where they are to be planted.

Tree of Life Nursery of San Juan Capistrano, Calif., has been inoculating several species of native California plants with mycorrhizal fungi during the past two years.

The company now will inoculate plants with mycorrhizal fungi collected at the site where the plants are to be placed — before the plants are transplanted.

The company says that inoculating the plants it sells with fungi native to the particular area where the plants are to be planted eliminates the possibility that native species or ecotypes could be inadvertently displaced.



The New England Wild Flower Society has published "Meadows and Meadow Gardens," a booklet about establishing and maintaining a wildflower meadow. The booklet, which costs \$6.95, can be obtained from the New England Wild Flower Society, Dept. NS, Hemenway Road, Framingham, Mass. 01701.



## Travel adventures available

Join the Wildflower Center on the adventure of your choice this summer!

Newfoundland  
June 22-29

Santa Fe to Silverton Sojourn  
August 11-17

Rio Grande Round-Up  
Sept. 21-27

For more information — or  
for reservations — call  
SelecTours at 1-800-759-7727.

## LEARN HOW TO CAPTURE THE BEAUTY OF WILDFLOWERS

The Wildflower Center is sponsoring John Smithers' wildflower photography workshops and lectures. Please contact the local organizations listed for registration information.

May 3, 4, and 5, Callaway Gardens, Pine Mountain, Ga.  
(404) 663-2281.

May 10, 11, and 12, The Schuykill Nature Center, Philadelphia.  
(215) 482-7300.

May 16, 18, and 19, The Holden Arboretum, Mentor, Ohio.  
(216) 946-4400.

May 31, June 1, and 2, Royal Botanical Gardens, Hamilton, Ontario, Canada. (416) 527-1158.

June 6-10, Quebec Federation for Photographic Leisure, Montreal, Canada. (514) 252-3036.

June 13, 15, and 16, Vermont Institute of Natural Science and Vermont State Crafts Association. Woodstock and Windsor, Vt.  
(802) 457-2779.

June 27, Botanica, the Wichita Gardens, Wichita, Kan. Lecture only.  
(316) 264-0448.

August 1, 3, and 4, Shaw Arboretum, Missouri Botanical Garden, Gray Summit, Mo.  
(314) 577-5138.

August 9, 10, and 11, Environmental Concern, Inc., Easton, Md. (301) 745-9620.

## Get into Nature: Join the National Wildflower Research Center!

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

- \$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 tote bag and invitations to special events.
- \$250 Center Sponsor. All the above plus wildflower poster.
- \$500 Trust Member and \$1,000 Benefactor. All the above plus special privileges.

• Thank you! Your contribution is partially tax deductible.  
Contact the Development Office for detailed information on tax-deductibility.

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

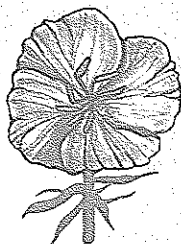
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# Wildflowers Work!

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