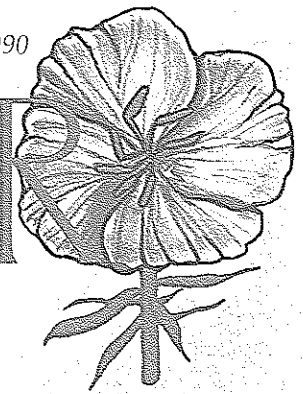


# WILDFLOWER



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

## Preservation Blooms in Recreated Prairies

The legendary richness of America's vibrant prairie once extended from central Canada to Texas, from Illinois west to the Rocky Mountains.

This fertile rectangle, once covered by dominant grasses, bright wildflowers and other forbs, has been reduced to scattered, protected patches in state parks, wildlife refuges and rights-of-way. But its hardy plants, capable of weathering temperature extremes, strong winds and persistent drought, can still bring beauty and bounty to the plots of adventurous gardeners who live in a prairie or plains region.

No individual can hope to recreate the sweeping grandeur and diversity of a prairie. But it is possible to make any space a reproduction in miniature of the larger masterpiece.

Begin with a site analysis that particularly takes into account moisture and

shade. Prairie vegetation requires full sun. Include existing site features — buildings, fences, rocks and the site's topography — and plotted paths of mowed grass or gravel.

Don't pack too much into the plot: an area of only a few thousand square feet might contain only two or three grasses, and ten to twelve forbs.

A prairie is primarily a grassland. A ratio of about 70 percent grass and 30 percent forbs will eventually grow to the prairie's own ratio, which features up to 80 percent grasses. They serve several important functions, including physical support for the forbs.

Imitate the prairie's growth patterns. One or two species typically dominate in an area, gradually giving place to the dominant plants in an adjacent area. Limit use of any aggressive clump-former or runner.

If space is limited, consider starting a prairie garden with a neighbor, or incorporating prairie vegetation in neighborhood common areas. Islands of prairie species, or backdrops of prairie grasses can enhance a more traditional landscape, or be attractive foundation plantings along the house. Smaller prairie grasses (such as little bluestem or prairie dropseed) or forbs with finer leaf textures (such as purple prairie clover and shooting star) work best.

**Source:** *Landscaping with Wildflowers and Native Plants*, Ortho Books

### New Wildflower Center Prairie Welcomes Visitors

You should hear them, especially the children who wander the paths through the Reconstructed Prairie at the Wildflower Center in Austin. "Look at the horsemint. It has square stems!" "The bees have visited this bluebonnet — see that purplish-red dot?"

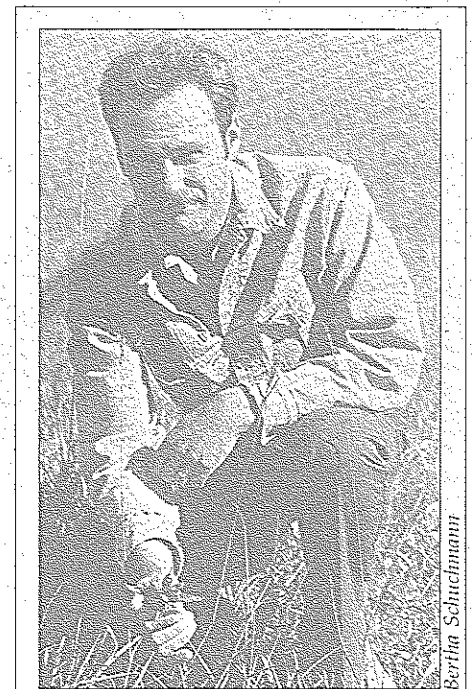
Visitors of all ages are fascinated by the prairie, the newest addition to the grounds at the Center. Response to last summer's direct mail appeal for funds to expand the prairie — stocking it with a greater diversity of wildflowers and native grasses — bears out that interest.

Wildflower Center members and others responded generously, donating some \$18,000. The Center's research staff put

the funds to work immediately, purchasing seed for grasses and forbs such as little bluestem, side oats grama and sundrops. They will also transplant a number of grasses to the prairie.

Not so long ago, native prairie was the largest ecosystem in the United States, stretching from the northernmost to the southernmost borders. Today, less than half of one percent of that grassland remains. Besides providing a rich display of native species to the Center's spring visitors, the Reconstructed Prairie helps restore a vanishing natural heritage.

The Wildflower Center extends an appreciative "thank you" to everyone who helped support this project!



**Rare Find:** Rod Marlatt, executive director of the Fayette County (Iowa) Conservation Board, displays a rare prairie wildflower, closed gentian. Find out about prairie restoration in Iowa, p. 5. (Photo courtesy of Oeltwein, Iowa's Daily Register.)

CATALOG INSIDE!

## *Native Plants Aid Earth Day Goals*

As we enter what many are calling the decade of the environment, one of the first major events is Earth Day 1990 on April 22. That one day is symbolic of a series of ongoing activities and awareness efforts.

In addition to pollution clean-up efforts, energy-conserving projects, and recycling, one goal of Earth Day 1990 is the planting of one billion trees during the 1990s. This is a goal shared by the organizers of ReLeaf and other local and regional tree-planting programs and by the National Wildflower Research Center.

Continued removal of native wildflowers, grasses, shrubs and trees has resulted in serious damage to the plant communities that serve so many vital functions. They stabilize topsoil, provide food and shelter for wildlife and maintain the genetic variability that has provided humanity with medicine, lubricants, fibers and the food that allowed the development of non-nomadic cultures and today's advanced civilization.

Concurrent with increased industry and the rapidly growing consumption of fossil fuels, which has resulted in increasing carbon dioxide levels, has been the removal of the plant life that consumes that carbon dioxide. This has produced the "greenhouse effect" — global warming that further threatens natural ecosystem balances.

Reestablishment of native trees and other components of our native flora helps restore ecological balance and consumes atmospheric carbon dioxide, producing oxygen which

eventually adds ozone to our atmosphere. Those benefits accrue from the planting of propagated trees native (indigenous) to the area in which they are planted. But there are several possible negatives associated with inappropriate plantings.

Some percentage of all trees dug from the wild and transplanted trees will fail to survive, resulting in a net loss of trees, not a gain. In addition, planting nonnative exotics and cultivars instead of native trees often requires an expenditure of natural resources — water, fertilizer, soil amendments and pesticides — that may negate the positive effects of shade, soil stabilization, and carbon dioxide consumption that trees can provide. Furthermore, most non-natives do not ever reproduce, so ultimately those trees will die. The replacement process will have to start all over again with net losses resulting from the original plants' establishment.

The term "adapted species" is often used to imply native species. However, "adapted" may refer to a plant that will grow within the normal temperature and rainfall ranges of the area into which it is being planted, but is not native to that area. An "adapted" species often fails to survive the atypically cold

*(read on, back page)*



*David K. Northington, Ph.D., is Executive Director of the National Wildflower Research Center.*

# RESEARCH U.P.D.A.T.E

The federal roll call of endangered species includes golden yellow *Dyssodia tephroleuca* (ashy dogweed), and Wildflower Center botanists have turned an eye to this shrubby plant with dainty ray flowers accenting grayish, wooly stems.

Ashy dogweed grows in habitats bordering key wintering areas for birds that migrate on the Central Flyway, between northern and southern parts of the United States.

The Center's botanists made a trip to Texas' Lower Rio Grande Valley to collect ashy dogweed seed. They will study its biology, germination and growth as part of a Texas Parks and Wildlife Department conservation program. Understanding seed biology is crucial to conservation.

What's learned about germination and growth of this species may be applicable to other *Dyssodia* species that grow in the Southwest, northward to Montana and Ontario, and in New England. The Center will document research procedures that are successful, so that they can be applied to other endangered species.



Soon to arrive at the Wildflower Center is a major item of research equipment — a growth chamber. Equipped with controls for levels of temperature and light, the chamber can simulate various environmental conditions.

"We'll be able to use it for germination tests all year around," says John Averett, Research Director at the Center. The chamber also allows botanists to research other aspects of plant growth, such as the conditions that trigger flowering.

The Center purchased the growth chamber with funds provided by the Texas Department of Agriculture for research on *Castilleja* (paintbrush) species, and matching funds from the American Conservation Society.

## *Wildflower*

**Founder:** *Lady Bird Johnson*

**Executive Director:** *David K.*

*Northington, Ph.D.*

**Editor:** *Candace Kiene*

**Art & Graphics:** *Barbara Brooks Clubb,*

*Shauna Sousares*

**Copy Editors:** *Beth Anderson, Jim*

*Hankins*

*Wildflower*, v. 7, no. 2 (ISSN 0898-8803). Published bimonthly. A portion of \$25 membership dues pays for your annual subscription to *Wildflower*, National Wildflower Research Center, 2600 FM 973 North, Austin, TX 78725-4201. Phone: (512) 929-3600. Material may be reprinted with the permission of the editor. Second class postage paid at Austin, Texas.

POSTMASTER: Send address changes to *Wildflower*, National Wildflower Research Center, 2600 FM 973 North, Austin, TX 78725-4201.

# Breaking the Wildflower Record at Toddy Pond

Historic wildflower identification records, kept by Col. and Mrs. Frederick F. Black from 1908 to 1945, have been donated to the Wildflower Center. Col. Black was a lifelong naturalist, whose wildflower specimens collected in Alaska in 1906-07 were accepted by the Smithsonian. He noted wildflowers he found in the various places he was stationed, especially around Toddy Pond near Searsport, Maine, his hometown. Here is the first in a series of excerpts from Col. Black's wildflower records, which have been provided by the Blacks' daughter-in-law, Mrs. Frederick R. Black of Hilton Head Island, South Carolina.

The original Toddy Pond Wildflower Record was established in August 1902, when a party of four of us drove a horse and carriage from Searsport to Toddy Pond in Swanville for an all-day picnic. We recorded the wildflowers we saw in bloom and our list totaled 135. In later years we have repeated this trip by automobile a number of times in efforts to break this record. On August 21, 1922, the trip included a cross country walk from Swan Lake to Toddy Pond and a return by road, and on that date we found 161 wildflowers in bloom. We were successful again on August 3, 1927, when, by following the same route as in 1922, we raised the total to 164, which has remained the record since that time.

This year [1932] the first available date for the trip was August 10th. We headed for Swan Lake, listing the roadside flowers as we saw them from the car, occasionally stopping to make a more careful examination of favorable terrain.

For a number of years we have found quantities of Knappweed in a field about a mile along our way. Unfortunately haying had been completed in that field and a careful search failed to locate a single flower. We were consoled by finding several blossoms of blue flag in a ditch near the road. This was unexpected luck so late in the season. We also found a few specimens of yellow bedstraw. It usually grows in profusion there.

The shores of the pond above the dam gave us a few unseasonable flowers and several which are not commonly found. These included a single bluet, a lone blossom of tall meadow rue, swamp milkweed, monkey flower, cardinal flower, Rand's eyebright, the small yellow clover, and wild sunflower.

We passed a field which contained a large number of blossoms of purple fringed orchids. There must have been fifty or sixty of them.

Along the shore of Swan Lake we found orange grass, marsh speedwell, and wild bean and on the slope of the hill, pale corydalis. Following a path through the beech woods above the road, we located Indian pipe, beech drops, false beech drops, and two species of coral root. At this point our list contained about one hundred and twenty varieties.

The party's 1932 adventure, which culminated in a record-breaking wildflower count, will be continued in a subsequent issue of Wildflower.

Our wildflower border includes (top to bottom) cardinal flower, corydalis, sweet clover and sunflower

## Vermont Statutes Protected Wildflowers for Sightseers

Excursions such as those enjoyed by Col. and Mrs. Black were enhanced by progressive statutes such as a 1921 act passed by the General Assembly of the State of Vermont. That one-page law, "to protect rare plants and to protect those plants from being sold for commercial purposes," disallowed the taking of any of the rare plants listed, except when strictly monitored for scientific purposes.

The 1921 statute served Vermont wildflowers well for 50 years. Revised in 1972, 1981, and 1989, it now extends protection to all threatened or endangered wildlife,

fauna as well as flora. The 1921 act levied a fine of not more than ten dollars for each plant or cutting taken.

The 1921 act protected a number of plants, listing both common and Latin names for them. Due to space limitations, only a few are noted here: *Thelypteris fragrens* (fragrant fern); *Thelypteris goldiana* (Goldie's fern); *Asplenium cryptolepis* (wall-rue spleenwort); *Cryptogramma stelleri* (slender cligg brake); *Woodsia glabella* (smooth woodsia); *Lycopodium selago* (fir club moss); *Cyripedium arietinum* (ram's head lady's slipper); *Alnus crispa* (green alder);

*Salix phylicifolia* (tea-leaved willow); *Saxifraga aizoides* (yellow mountain saxifrage); *Arenaria groenlandica* (mountain sandwort); *Geocaulon lividum* (northern comandra); *Diapensia Lapponica* (Lapland diapensia); *Draba stylaris* (hoary or twisted whitlow grass); *Empetrum nigrum* (black crowberry); *Gentiana amarella var. acuta* (northern gentian); *Pyrus sitchensis* (alpine mountain ash); *Potentilla tridentata* (three-toothed cinquefoil); *Viburnum pauciflorum* (squashberry); *Primula mistassinica* (dwarf Canadian primrose or pale magenta pink); *Vaccinium vitis-idaea* (cowberry) and *Solidago cutleri* (alpine goldenrod).

# Wildflower Center Calendar

## Wildflower Days

Spring Wildflower Days, the annual festival in bloom at the Wildflower Center, will be Saturday, April 21, from 10 a.m. to 4 p.m., and Sunday, April 22, from noon to 5 p.m. Everyone is invited to a lively two days of special events and spring shopping at the height of the Central Texas wildflower season.

The gift shop, stocked with unique wildflower items, will offer plenty of ideas for Mother's Day, wedding and other spring gifts. Arts and crafts demonstrations plus drawings for door prizes are scheduled.

To commemorate the 20th anniversary of Earth Day, which falls on the same weekend, several native plant nurseries

and wildflower seed companies have been invited to sell native plant materials on Saturday. On Sunday, nonprofit conservation groups will be on hand with information on environmental issues. Lectures, demonstrations and wildflower walks will round out the activities. Children's entertainment is also being planned for what promises to be a fun and enlightening weekend. Please join us!

## Spring Tours

Spring season with guided tours at the Wildflower Center is from April 10 to May 13. Visitors' hours are Tuesday, Wednesday and Thursday, from 10 a.m. to 1 p.m., and Sunday from 1-3 p.m. The Center is east of Austin on FM 973 North. Phone: (512) 929-3600.

# WILDFLOWER CENTER NEWS

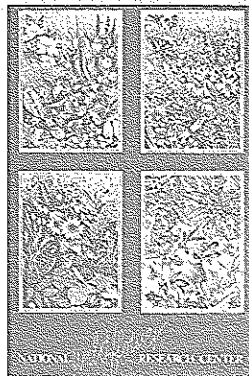
The Executive Committee of the Wildflower Center's Board of Trustees, meeting in New Orleans in January, discussed increased national awareness of the Center and its programs.

In February, Wildflower Center Executive Director David K. Northington discussed water conservation and the benefits of landscaping with native plants at the Environmental and Energy Study Institute's Water Supply Alternatives Workshop in Tucson, Arizona. At the Cloister Garden Series in Sea Island, Georgia, he spoke on the explosion of interest in wildflowers.

The Wildflower Center will have a booth in the education section of the New York Flower Show, March 2-11. The show, which draws some 30,000 visitors per day, will be open from 10 a.m. to 8 p.m. every

day except Sunday, when it closes at 6 p.m., at Pier 92, the Passenger Ship Terminal of the Port Authority of New York and New Jersey.

The Wildflower Center has distributed 1,700 copies of its new Educational Poster to 17 school districts nationwide. To meet its goal of supplying a poster for every fourth- and fifth-grade classroom in the nation, the Center seeks corporate, foundation or private funding for further printing and distribution.



Larry Kolzoord

Staff and volunteers monitor one of the three controlled "prairie fires" started in January on the Wildflower Center grounds. One site is being studied to determine the effects of fire on individual species in a prairie community. (Photo courtesy of Austin, Texas' American-Statesman.)

## From the Field

Wildflower Photography Workshop March 16-18 Claremont, Cal. Learn technique and sense of composition. Contact: Rancho Santa Ana Botanic Garden, Claremont, Calif., (714) 625-8767. Workshops scheduled March 20-21 at Santa Barbara Botanic Garden, Santa Barbara, Calif., (805) 682-4726; March 30-April 1 at Corpus Christi Botanical Garden, Corpus Christi, Texas, (512) 993-7551; and April 6-8 at Dallas Arboretum and Botanical Garden, Dallas, Texas, (214) 327-8263.

Louisiana Project Wildflower Meeting and Festival Des Fleurs De Louisiane/Louisiana Festival of Flowers April 5-8, Lafayette, Louisiana. Lectures and demonstrations, booths, and a plant auction that highlights an evening gala. Contact: Dr. Dennis Wollard, P.O. Box 44433, University of Southwestern Louisiana Station, Lafayette, Louisiana, 70504: (318) 231-5348.

Native Plant Festival April 6-8, Armand Bayou Nature Center, 8600 Bay Area Blvd., Houston, Texas. Native plants for sale, plus tips from local growers. Contact: Gary Freeborg, (713) 474-2551.

Poppy Day April 8, Theodore Payne Foundation for Wildflowers and Native Plants, 10459 Tuxford St., Sun Valley, Calif. Wildflowers at the state's original native plant nursery; plants for sale. (Its Wildflower Hotline, 768-3533, offers 24-hour information on flowers throughout the state, through May 31.) 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.

Smokies Wildflower Pilgrimage April 26-28, Rhode Island Wild Plant Society, Esmond, Rhode Island. Contact: (401) 949-0195.

# Brilliant Wildflower Color Splashes Austere Big Bend Terrain

The Rio Grande. The name evokes images of rugged canyons, untamed river and dry, desert heat. What may be lesser known is that in the spring, annual wildflowers and blooming cacti splash the path of the Rio Grande with color. And the Lower Rio Grande Valley is a birder's paradise, as millions of hawks, water fowl and songbirds migrate through the area, from north to south and south to north.

For spring travelers, one of the most scenic sections along the Rio Grande river is Big Bend, part of the Chihuahuan Desert in Texas. Big Bend offers a wonderful diversity of plant habitats to explore, from the pinyon-oak-juniper woodlands of upper elevations to grassland cacti and succulents.

Springtime softens the harshness of the desert. Annual wildflowers such as *Baileya multiradiata* (desert marigold) and *Lupinus havardii* (Chisos bluebonnet) add bright stretches of color. Yuccas brandish waxy, cream-colored flowers, while lecheguilla (*Agave lecheguilla*) stalks stand as tall, straight sentries. If you're lucky, you may see the towering blooms of *Agave havardiana* or century plant;

these succulents, which can take 20 years to mature, die after flowering.

If floating down the Rio Grande is more your style, Boquillas Canyon has the most interesting botany. Ferns find refuge on moist limestone ledges, while *Euphorbia antisiphilitica* (candelilla) and *Fouquieria splendens* (ocotillo) grace steep canyon slopes.

North, south, east and west converge as the Rio Grande completes the last 200 miles of its journey to the Gulf of Mexico. A biological crossroads, the Lower Rio Grande Valley is a transition zone of tropical, subtropical, desert and temperate species. Its thorny forests, dry scrublands and impenetrable wetlands provide habitat for many rare or endangered species of plants and animals.

Among the wild creatures that find the area a sanctuary are myriad migrating birds, coming from as far north as Alaska and the Northwest Territories and winging their way

through the valley en route to Central and South America. Many tropical birds land in the valley as their northernmost limit.

Though most of the land has been converted to farms and urban areas, small pockets of the 11 different plant communities of the valley's Tamualipan Biotic Province still remain. Those refuges give a glimpse of the formerly extensive palmetto groves, thorny jungles and ebony-anaqua woodlands.

Beth Anderson  
Wildflower Center Resource Botanist

## Scenic Big Bend Tour

The Big Bend area of Texas and Mexico is as unique an ecosystem as there is to be found. Its plants and other living creatures are comparable in diversity to any rain forest on the planet.

The Wildflower Center and SelecTours have scheduled a Wildflower and Naturalist Tour, April 24-29, to take advantage of Big Bend's peak blooming season. For reservations, call SelecTours at 1-800-759-7727.

## A Full Year of Tours

The Wildflower Center and SelecTours have planned an entire year of Wildflower and Naturalist Tours, exploring areas from dramatic British Columbia to charming New Zealand. Tours for 1990-91 include:

### Vancouver, B.C.

June 23-July 1, 1990

### African Game Reserves

September 8-25, 1990

### New Guinea

October 1990

### New Zealand

November 1990

### Baja Whale Search & Exploration, California

February 1991

## WILDFLOWER OUTLOOK

The first Earth Day — April 22, 1970 — was one of the largest organized demonstrations in history: an estimated 20 million people participated across the United States. The event, which is often credited as the start of the modern American environmental movement, marks its 20th anniversary on Sunday, April 22.

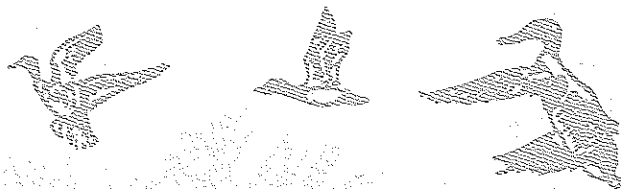
Earth Day 1990 has been organized primarily at the community level, emphasizing that people working together can solve environmental problems. Organizations focusing on diverse aspects of conservation — from wildflowers to wilderness preservation — will participate in the celebration. (See page 4 to learn about Earth Day observances at the National Wildflower Research Center.)

A number of environmental laws have been passed since that first Earth Day. In 1970, the federal government created the Environmental Protection Agency and

passed important amendments to the Clean Air Act. Congress also passed the Endangered Species Act in 1973.

To learn more about Earth Day in your community, write: Earth Day 1990, P.O. Box AA, Stanford University, CA 94305

Rare Indian grass and rattlesnake master grow northwest of Arlington, Iowa, where the Fayette County Conservation Board began a prairie restoration project last year. The board took over management of land along an area highway from the state department of transportation; it also assumed care of more than 2,000 miles of country ditches. Signs reading "Roadside Prairie Restoration — No Mowing — No Spraying" were posted. Instead of spraying weeds in broad areas with a boom, land managers sprayed weeds individually. They also arranged for an inventory of wildflowers and other valuable plants.



# Some Tips on Tax-Deductibility

The IRS requires that nonprofit organizations like the National Wildflower Research Center specify the portion of payment for membership dues that can be taken as a tax deduction.

Here's a list of fair market values and tax-deductible amounts for levels of membership dues offered by the Wildflower Center. The estimated fair market value of your benefits as a:

\$25 member is \$7;  
your tax-deductible contribution is \$18.

\$50 member is \$11;  
your tax-deductible contribution is \$39.

\$100 member is \$23;  
your tax-deductible contribution is \$77.

\$250 member is \$31;  
your tax-deductible contribution is \$219.

\$500 member is \$31;  
your tax-deductible contribution is \$469.

\$1000 member is \$31;  
your tax-deductible contribution is \$969.

For additional questions about tax-deductibility of your membership or other donations to the National Wildflower Research Center, please call the Development Office at (512) 929-3600, or write to 2600 FM 973 North, Austin, Texas 78725.

## Director's Report (cont. from page 2)

winter or hot summer many areas experience every few years. In addition, such plants are seldom adapted to the soils, nutrient levels, microbes, insect pests or other climatic variables, and so may require the addition of supplemental fertilizers, soil amendments, pesticides and other expenditures of natural resources. And, again, most adapted species will not reproduce or participate in the ecosystem interactions that truly repair the environment upon which we are so dependent.

To reap all the benefits of tree-planting programs, plant propagated tree species that are native to the area into which they will be planted. This will make you a participant in what the Wildflower Center is encouraging for all of us: a decade of environmental repair.

## The Difference Is Wild: 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, and T-shirts; special advance notice on tours and discounts to Center seminars; free wildflower information from the Center's Clearinghouse; a membership card signed by Lady Bird Johnson; 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 garden apron and invitations to special events.
- \$250 Center Sponsor. All the above plus wildflower poster.
- \$500 Trust Member and \$1000 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.

Please enter a membership in the category checked at left:

Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/St./ZIP: \_\_\_\_\_  
Phone: \_\_\_\_\_

**Gift Membership:** If you are giving this membership as a gift, please enter your name and address below.

Donor Name: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/St./ZIP: \_\_\_\_\_  
Phone: \_\_\_\_\_

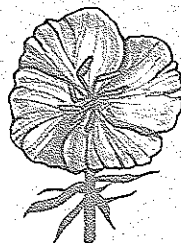
- Make your check payable to: NWRC
- Mail to: Membership, National Wildflower Research Center, 2600 FM 973 NORTH, AUSTIN, TX 78725-4201 7/2

National Wildflower Research Center  
2600 FM 973 NORTH, AUSTIN, TEXAS 78725-4201

Second Class  
Postage Paid at  
Austin, Texas

# Wildflowers Work!

Volume 7, Number 2, March/April 1990  
Recycled Paper



NATIONAL WILDFLOWER RESEARCH CENTER  
4801 LaCrosse Blvd.  
Austin, Texas 78739  
(512) 292-4200