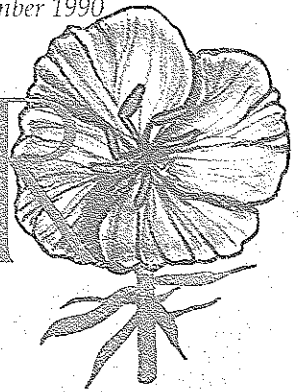


# WILDFLOWER



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

## Members respond to grasslands appeal

Pre-treatment inventories are underway and transects have been set in the research plots, thanks to the generosity of Wildflower Center members who responded to a special appeal on behalf of the Center's Grasslands Restoration Project.

Friends of the Wildflower Center so far have donated more than \$20,000 for the project, which will restore and renovate 40 acres of grassland and pastures on the Center property — using native grasses and wildflowers.

Center researchers will study 40 acres that were formerly used as a hayfield and planted with non-native bermuda grass.

Among other things, the grasslands study will help Center researchers determine the establishment rates of native species in significantly altered environments and the best methods to use when attempting to revegetate large tracts of damaged rangeland.

Center Research Director John Averett says information gleaned from the project will have application beyond prairies to a variety of grassland communities.

## Wildflower Center opening Midwest Regional Office

The National Wildflower Research Center is growing! The Center is celebrating the opening of its first regional office, which will serve the Midwest region of the United States.

The office is located at the University of Minnesota Landscape Arboretum in Minneapolis. The Center and the state of Minnesota have each committed \$100,000 to run the regional office for two years.

The Midwest office will serve a multi-state area, and one of the office's missions is to act as a catalyst for individuals and groups interested in native plants.

Dr. David Northington, executive director of the Center, says the office "will significantly enhance our ability to gather regional information for our national clearinghouse, as well as develop demonstration plantings, educational programs, and research projects unique to the Midwest."

Bonnie Harper-Lore, the Midwest office program coordinator, will establish a network with individuals and organizations interested in native plants, organize and plan a yearly midwest conference on native



Bonnie Harper-Lore

plants, develop a fundraising program to keep the regional office open, and develop research projects. Bonnie has been head of the roadside wildflower program for the Minnesota Dept. of Transportation for the past two years. She has taught in the University of Minnesota Dept. of Landscape Architecture, specializing in using native plant communities in sustainable designs.

Maria Urice, the information officer, will work with those interested in native plants, compile a library and slide collection, develop regional resource information, and answer questions from the general public. Maria received her bachelor's degree from Bemidji State University in Minnesota last May. She has held various communications positions.

## Center plans special Membership Open House

The Wildflower Center will welcome members for a behind-the-scenes look at ongoing research and a special preview of new holiday gifts at a Membership Open House from 4:30-7 p.m., Friday, November 9.

Members are invited to join the Center staff for tours through our greenhouses

and research lab, areas not open to the general public.

The open house will give members first pick of holiday gifts before the Center's gate opens to the public the next morning for the Fall Wildflower Festival, which highlights the Center gift shop's unique selections for the holiday season.

CATALOG INSIDE!

## Director's Report

# Grasslands Project has broad potential use

Any open area vegetatively dominated by grasses could be called a prairie, a meadow, or, simply a grassland. A popular image for a prairie is an extensive area of tall grasses, possibly with a rolling terrain and historically found in the central part of North America. A meadow has the same general type of vegetation as a prairie, but the mental image more likely is an open area within a woodland or a valley floor, or a high mountain meadow above the treeline (also called an alpine meadow).

A grassland is both of these, and other things as well. Any area dominated by grasses is a grassland, including pasture areas that use introduced exotics or non-native grasses and were established for grazing domesticated animals. For most of us, however, all these terms evoke an image of native grasses and associated wildflowers, areas that are now all too uncommon.

Through field trials on wildflower seed mixes and a study on reconstructing a native prairie, the National Wildflower Research Center has learned that native grasses play an important role in establishing wildflowers and sustaining them. The presence of non-native grasses generally impedes the successful long-term establishment of indigenous wildflowers; non-native wildflowers

do not coexist with native grasses to form a meadow or prairie beyond two years.

The Wildflower Center's newest research project involves testing several management techniques to determine the most cost-effective method of allowing native grasses to out-compete introduced grass species. Such techniques also encourage a greater diversity of native wildflower species to become part of the grassland community.

This research is valuable to every area of the country because even wooded regions have many natural grassy openings and many acres of cleared land. Millions of miles of roadsides are included in that cleared land.

Ninety-nine percent of the United States' original 100 million acres of central prairie has been removed, primarily through conversion to cropland and pastures with introduced forage grasses. The remaining one percent consists of small, scattered patches of relict prairie communities. To reverse this process, Americans must reestablish native grassland associations.

To develop the most cost-effective, efficient, and sustainable management and reseeding programs, the Wildflower Center continues to develop research that tests new techniques, so the information can be shared with appropriate agencies,

individuals, and organizations. Already, response to this project has been highly positive, and we at the Wildflower Center appreciate that sincere support.

Although the grasslands project has received much attention over the past year, the Center's overall research program remains broadly based and includes projects in the laboratory, greenhouse, and field. In general, these projects center around the interactions between different plant species and soil microorganisms. Examples include the interactions of the bacterium *Rhizobium* and lupines, *Penstemon* and mycorrhizal fungi, and paintbrush (*Casilleja*) and host plants. Like the grasslands project, this research emphasizes the idea of community structure, rather than thinking about plants, or other organisms, as individual species.

The Wildflower Center is proud of the progress researchers have made, and look forward to contributing even more. One person, one plant at a time, we can make a difference!



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

## Wildflower

Founder: Lady Bird Johnson

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

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## WILDFLOWER CENTER NEWS

The Garden Writers Association of America has awarded the Wildflower Center a Quill and Trowel Award for its biannual color journal *Wildflower*. The Fall 1989 issue won the award, which will be presented in November at the GWAA's annual meeting in Mobile, Alabama.

Staff Resource Botanist Beth Anderson presented a paper titled "Reconstructed Prairie as an Educational Tool," at the Twelfth Annual North American Prairie Conference in Cedar Falls, Iowa, in August. The paper discussed how the Center's transplanted prairie has improved its education program.

The Center's Fall Wildflower Festival will be held November 10 from 10 a.m. until 5 p.m. The holiday shopping event will feature unusual wildflower gifts and arts and crafts demonstrations.

Shell Oil Company has pledged \$5,000 to the Center to enable further printing and distribution of the educational poster.

Lady Bird Johnson has received the Tom Dodd, Jr., Award. The award was presented at the Cullowhee Conference in Cullowhee, N.C., and was presented "in recognition of her outstanding accomplishments in promoting and conserving native plants in North America." The annual conference is attended by organizations and businesses interested in Southeastern native plants.

Center Executive Director David Northington launched the Cleveland Museum of Natural History's 1990-91 Explorer Series in September as the first speaker in the series.

read on, back page

# Landscapes can provide homes for feathered friends

No matter where you live — in a large city, a suburban neighborhood, or rural regions scattered throughout the United States — hardly a yard exists that does not have space for birds. Luckily, birds are easy to attract, and since they are active during the day and can become accustomed to people, your chances of spotting them are high. Of all forms of wildlife, birds probably provide the most enjoyment for the least amount of effort.

Your yard size is not as important as what plant species are present and how you manage your yard. Remember that even minor changes such as reducing the amount of lawn and planting berry-producing shrubs and trees can increase the number of bird visitors.

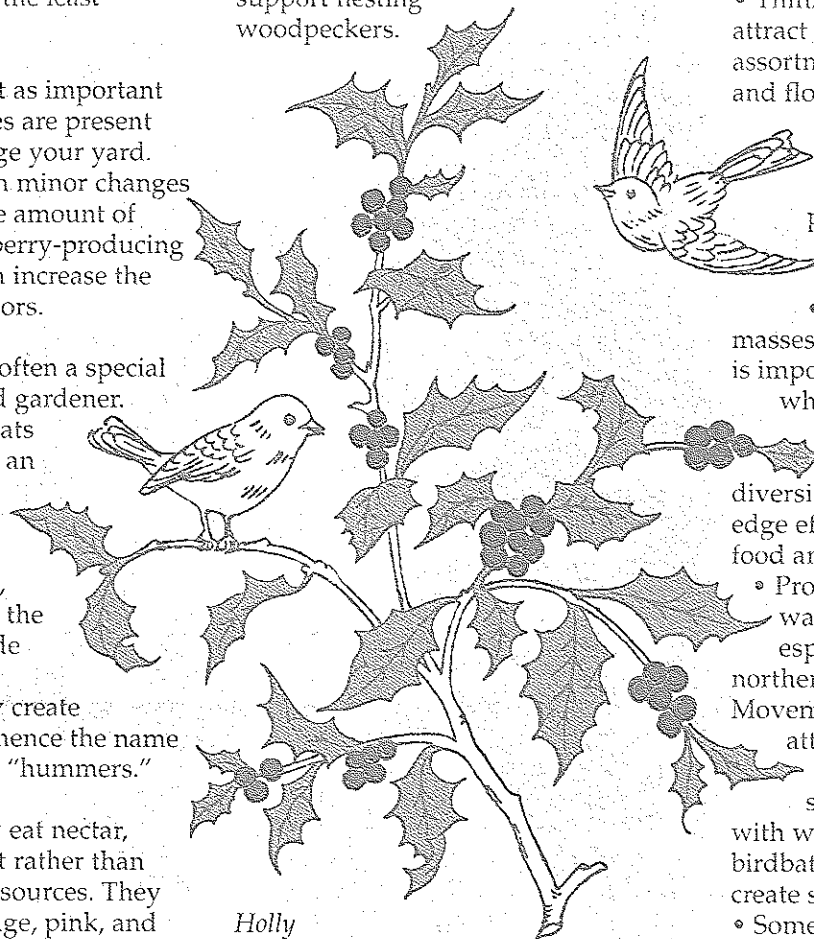
Hummingbirds are often a special treat to the backyard gardener. These winged acrobats move their wings at an unbelievable rate of 50 to 200 beats per second, and are capable of flying up, down, backward, to the side, and even upside down. As they buzz through the air, they create a humming sound, hence the name "hummingbirds" or "hummers."

Hummers primarily eat nectar, and depend on sight rather than smell to locate food sources. They respond to red, orange, pink, and some yellows. The tubular flowers they visit hold copious amounts of nectar at the base of a long, stout floral tube. Fledglings quickly learn by trial and error to seek out tubed nectar flowers, usually preferring red flowers, which contrast sharply with the surrounding vegetation. Young hummers soon connect red with food. So strong is the association that they are known to investigate new sources of red — sometimes red t-shirts, bandanas, or even neckties.

In Canada and the United States, 85 species of birds nest in cavities in

dead tree trunks or branches. Furthermore, birds that nest in cavities can be divided into two groups: primary excavators, birds that dig out cavities, and secondary users that use abandoned holes.

The woodpecker is a good example of a primary excavator. Woodpeckers generally cannot dig in living wood, so gardens and lots with snags and unpruned trees will tend to better support nesting woodpeckers.



Holly

Secondary users include screech owls, tree swallows, house wrens, and eastern bluebirds. Secondary users are not completely dependent on primary excavators. They can use natural cavities resulting from decay and will use nest boxes.

A neat, highly pruned yard not only eliminates nesting sites, but also eliminates bark insects and grubs as a food source. Also, many perching birds such as thrashers and goldfinches build their nests in trees and shrubs, especially where there

or more branches emerge from a main stem. If you prune, try to create such nest sites. Songbirds use tall dead snags as singing posts, and birds of prey use them as perching lofts to sight their next meal.

Other gardening tips:

- Think diversity when trying to attract a variety of birds. Plant an assortment of native trees, shrubs, and flowers that produce fruit, berries, seeds, or nectar.
- Include evergreen and thorny trees and shrubs that protect birds from natural enemies and provide safe nesting sites.
- Vary the height of plant masses. Arranging "layers" of habitat is important since studies show that where there is an abundance of "edges" or "layers" between habitat, there is a greater diversity of birds. This is because the edge effect produces an assortment of food and shelter for birds.
- Provide an open area with fresh water throughout the year, especially in arid regions or in northern yards over the winter. Movement in the water will attract more birds. A simple way to accomplish this is to poke a small hole in a bucket, fill it with water, and hang it over the birdbath. This slow dripping will create small movements in the water.
- Some birds feed in leaf litter where they can hunt for worms and insects. Allow leaf litter to build up under trees or shrubs. Often these are areas that grasses have difficulty growing anyway.

Birds are often entertaining as well as beautiful to watch. Many have glorious songs that fill the air, and interesting habits. You may witness complex social interaction and elaborate courtship behavior. The awards are waiting for anyone who provides food and habitat for birds.

Annie Paulson Gillespie  
Wildflower Center Resource Botanist

## From the Field

Garden Writers Association of America Annual Meeting and Southern Symposium, Nov. 10-14, Mobile, Ala. Contact: Pat Ryan, (205) 973-2217.

IUCN-The World Conservation Union General Assembly, Nov. 28-Dec. 5, Perth, Australia. The assembly's theme is "Conservation in a Changing World." Contact: General Assembly Coordinator, IUCN, Avenue du Mont-Blanc, CH-1196, Gland, Switzerland.

Fifth Annual Texas Xeriscape Conference, Jan. 10-11, 1991, San Marcos, Texas. The conference theme, "Limited Resources, Unlimited Solutions," covers a multitude of topics relating to water conservation. Contact: Vicki Greene, Texas A&M University, University Center, 2nd Floor Rudder Tower, College Station, Texas 77844-1232, (409) 845-8904.

International Erosion Control Association, Feb. 20-23, 1991, Orlando, Fla. Contact: Ben Northcutt, P.O. Box 4904, 1485 S. Lincoln, Steamboat Springs, Colo. 80477, (303) 879-3010.

### Garden Club of America supplying native plant slides, information



Members of the Garden Club of America are helping the Wildflower Center gather information about native plant propagation in all parts of the country.

Club members also have donated numerous native plant slides to the Clearinghouse slide library.

Information collected by the GCA members will help Center staffers better gauge wildflower projects in each state of the nation. The staff greatly appreciates the GCA's efforts.

## Hassle-free holiday shopping available through Wildflower Center's gift shop

The Wildflower Center's products division is gearing up for another busy holiday season. Each year, interest in the Center's gift and educational merchandise continues to grow, and Products Manager Joe Hammer is predicting that this holiday season will be no different.

All proceeds from the Products Division (which includes the catalog and gift shop) support the Center's research and education programs — a fun and easy way to contribute to the Center! Members of the Wildflower Center receive a 10 percent discount on all purchases.

Thousands of mail orders are filled each year, most within 24 hours of receipt. "We pride ourselves on being in-stock on most items so the customer isn't inconvenienced," Joe says. "This, plus fast service, brings a lot of repeat customers."

Shirley Robuck, a part-time employee in the Products Division, helps set the standard for good customer service, Joe says. "Shirley helps in so many ways, it's hard to imagine how some things would get done without her."

A core group of eight volunteers helps with many tasks, from typing labels, packing and mailing product orders, restocking and tagging merchandise in the gift shop, waiting on customers and greeting tour bus groups, to working at the many festivals where the Wildflower Center sells gift items.

"We couldn't have a Products Division without our volunteers or without the volunteer coordinator," Joe says. "In fact, we need more volunteers on a day-to-day basis."

Joe continues to add fun, educational, and just plain beautiful products to the catalog and gift shop.

Several items featured in the catalog would make thoughtful holiday gifts, he says, especially the wildflower wall and desk calendars and the Suncatcher window ornament. Lovely handcrafted wildflower pins



Joe Hammer, left, and Shirley Robuck.

made out of leather are among the Wildflower Center's most popular new products.

Another popular product has been the two plant communities puzzles the center offers. The educational puzzles teach children about the relationships between plant and animal life, using grassland and forest communities as examples.

The educational focus of many of the Center's products is no accident. "I try to bring in products that teach people about the beauty and ecological value of wildflowers," Joe says, "including books, wildflower presses, and a number of children's items. Our newest children's T-shirt features a wildflower for each letter of the alphabet."

The Products Division offers a wide selection of wildflower and native plant books on a variety of subjects with nationwide and regional appeal. For a list of books available through the Center, please send your name and address to "NWRC Book List" at the address listed on the back page.

Visitors from across the country enjoy browsing through the gift shop, which features more than 200 gift items. The gift shop is open weekdays from 9 a.m. to 4 p.m., and on weekends during the spring (call first for hours).

## Special tours scheduled

The Wildflower Center and Selec-Tours are offering several special tour packages in 1991. Plan now to take part in at least one! Among the tours offered this spring are trips to Costa Rica and Austin, Texas.

The rain forests of Costa Rica have been one of the Center's most popular destinations. Visitors will see exotic animals, lush native vegetation, and spectacular views.

The Austin, Texas, trip will bring visitors to the Central Texas area during the most breathtaking time of the year — spring, with its innumerable wildflowers, including the world-famous bluebonnets.

**Mayan Adventure**  
(Mexico and Guatemala)  
January 26-February 3, 1991

**Baja California Whale**  
**Search and Exploration**  
February 16-23, 1991

**Costa Rica**  
March 17-23, 1991

**Austin**  
April 21-28, 1991

**Yellowstone**  
July, 1991

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

## Dear Santa... We need just a little more than two front teeth

Do you enjoy playing Santa? If you do, the Wildflower Center has some special needs this holiday season. If you spot an item that you'd like to pass on, please contact the Development Office at (512) 929-3600. We'll be very thankful. Among the items on the staff's wish-list:

- 1991 edition of *Editor & Publisher Red Book*
- Macintosh hard drives
- gas monofilament weed trimmers
- station wagon
- Macintosh laser printer
- AT&T Merlin 1030 telephone
- bird bath for pollinator garden
- garden hoses and soaker hoses
- computer desk/work station
- bowls and flatware (especially spoons) for the staff kitchen
- Macintosh SE computer
- assorted garden tools
- 3 to 5 horsepower air compressor

## Plant ecologist joins Center's botany staff

Alison Hill, a plant community ecologist, has accepted a post-doctoral position with the Wildflower Center. She will work primarily on the Center's grassland restoration project. (Please see related story on Page 1.)

Alison has worked on several research projects in New Mexico and North Dakota. She received her doctorate in range ecology from New Mexico State University, where she wrote her dissertation, "The Ecology and Classification of the Pinyon-Juniper Woodlands in Western New Mexico." (Alison says her dog, Aralia, was of great assistance during the research phase.) Her masters thesis work, in North Dakota, involved native forbs.

Being involved with the Center's new grassland restoration project is an exciting challenge, Alison says.

"This project has generated great interest. We have gotten people's



Alison Hill

attention with wildflowers, but it's important to remember that species diversity and grasses are important to the prairie ecosystem," she says. The big payoff will come "when people can look at it and say, 'This is what we can do.'"

## WILDFLOWER OUTLOOK

Proposed prairie preservation projects in two states are attracting attention. According to an article in *Flower & Garden* magazine, the Nature Conservancy has taken steps to preserve and restore 30,000 acres of ranchland in Osage, Okla.

And, according to the *Dallas Morning News*, the National Audubon Society has proposed creating a national prairie monument using 11,000 acres of unbroken prairie located in the Flint Hills of Kansas.

Both the Kansas and Oklahoma lands considered for the preservation projects were grazed, but never plowed, which should make re-introducing native species into those areas much easier.



Good news: the Dutch flower bulb industry and international environmental organizations have signed an agreement that should

help preserve threatened or endangered species harvested from the wild. Under the agreement, the Dutch will inform consumers of the origins of the bulbs they are buying.

Beginning in July 1990, all Dutch exporters selling flower bulbs harvested from the wild must mark the bulbs "Bulbs from Wild Source." *Cypripedium* and *trillium*, two species that have been heavily wild-collected, especially in Turkey, are included in this agreement.



The Prince William Wildflower Society, a chapter of the Virginia Native Plant Society, is offering two checklists, "Summer and Fall Wildflowers of Northern Virginia" and "Spring Wildflowers of Northern Virginia." The summer/fall booklet costs \$2.50, and the spring booklet, \$2. Contact the society to receive the booklets or to get more information at P.O. Box 83, Manassas, Va. 22110.



## Help wanted!

Do you have an eye for news? Please send us clippings about the Wildflower Center! The Center's budget does not currently accommodate a subscription to a news clipping service, so we appreciate any clippings that our members and friends can send.

The Public Information Office also needs VHS tapes of television stories about the Center.

Please send your clippings or tapes about the Center to the Public Information office at the address below. Please be sure to include the date and publication or station name.

## Recycling news from the Center



The National Wildflower Research Center is strongly committed to recycling. All Wildflower Center publications, including the Gift Catalog, are printed on recycled paper.

Soon recycled paper will be used for Center stationery and envelopes — once the current stock is exhausted.

The staff recycles plastic bags, aluminum cans, glass, newspapers, and office paper at the Center — and at home!

We greatly appreciate our members' concerns about this important environmental issue.

...Center News (cont. from page 2)

The Board of Trustees met in October in San Antonio for its annual fall meeting.

Thank-you to the Center's many members who recently used postage stamps on the Center's postage-paid reply envelopes. Doing so saved the Center \$600 in postage costs in *one month*.

Nash Castro, president of the Wildflower Center board, has announced that in January the American Conservation Association will award the Center a one-year, \$28,000 grant to form a consortium of botanic gardens, non-profit organizations, and universities to develop guidelines for reintroducing rare and endangered plant species into their native habitats. Initial efforts will target the arid Southwest, from southern California to central Texas, which has a disproportionate number of endangered species.

## A Seasonal Gift: 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 garden apron 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.

Please enter a membership in the category checked at left:

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Phone: \_\_\_\_\_

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

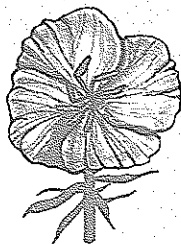
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## Wildflowers Work!

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