

# WILDFLOWER

The Newsletter of the National Wildflower Research Center Volume 3, Number 1 Spring 1986

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

## Welcome Members! Survey Shows You Care

# M

embership in the National Wildflower Research Center is expanding, with supporters from

across the country responding to our membership opportunities.

We would like to welcome all our new members, many of whom joined through our mail appeal last November. At the same time, we thought you would like to know a little more about yourselves—where you hail from and your concerns about wildflowers.

Most of you live in the south and southwest, from Texas and California, and from the north-east, with New York, New Jersey, Virginia, and Maryland strongly represented. Overall, Austin has the largest number of members for any one city, followed by Houston and Dallas. We especially appreciate those members who have given gift memberships to other wildflower lovers. Spreading the word as we sow the seeds of wildflower preservation and propagation is what your membership is all about.

Finally, we would like to mention that we make our mailing list available to carefully selected organizations. If you do not wish to be included in such mailings, please copy your mailing label exactly and return, marked Preference Service, National Wildflower Research Center, 2600 FM 973 North, Austin, TX 78725.

### Wildflower Survey Results

#### Ongoing Survey

Conducted by NWRC November 1985 through 1986

79% of those surveyed knew that many of America's endangered species are plants

75-88% of all respondents were aware of economic benefits of wildflowers, such as using less water, less fertilizer, less pesticide, and requiring less maintenance

69% do not belong to garden/horticulture organizations

9-13% only of those organizations had featured information on American wildflowers in the past year

62% could affirm and list a place in their area that featured native American plants

78% did not know that fewer than 18% of our native plants had been studied for their classification, propagation or economical/medicinal benefits

73% do feel that study of our native plants is lagging behind studies of native fauna

92% are gardeners

55% have wildflowers in their garden

83% want to learn more about wildflowers

40-50% have viewed wildflowers along highways in this country

88% support landscaping with wildflowers

at public buildings, in parks, and along roadways

90% believe an organized effort should be made to study the economic, medicinal, and environmental benefits of our 2,500 rare, threatened, and endangered plant species before they are lost to us

86% support a more balanced environmental effort in the United States, placing equal emphasis on plant and animal preservation

We believe the survey shows people are excited with the potential this natural resource of wildflowers offers us, and by the organization, which with your support and encouragement will make **Wildflowers Work!**

If you are not a member of the Center, even though you *are* on our newsletter mailing list, please turn to the back page and fill in your membership application today! ✂

## Library And Clearinghouse Serve The Nation

As the amount of information and reference material in our library and Clearinghouse computer files has grown, so has public interest in this information. Our library acquisitions in 1985 included almost 300 new books, 20 journals, and 1500 slides.

The Clearinghouse sent out over 1,000 information-gathering questionnaires to native plant nurseries, resource people, and botanical gardens in order to increase our information base. Already over half have been returned and the new information has been entered online. Inquiries from all over the country came through the mail (over 2,500), by phone (over 500) and in

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# What Is A Weed?

David Northington, Executive Director

Any plant growing where you do not want it can be called a weed. An additional indictment is that the plant in question is tough, coarse, and unattractive, although that does not necessarily hold true. Any plant other than wheat growing in a wheat field is considered a weed. In fact, any monoculture (single species) planting, such as crops and turf grass lawns, would consider even the most attractive wildflower a weed.

Weeds are opportunistic species that quickly establish in any open or disturbed habitat, such as roadsides, cultivated fields, and building sites. As long as that habitat is not reestablished to its pristine native plant community, weedy species will have an opening to grow in these disturbed areas.

A more serious problem is when a plant species is introduced into an area outside its normal distribution range and becomes invasively weedy. These "aliens" can often outcompete those species indigenous (grow-



Dr. David Northington

ing wild in a given area) to the area.

Native species have evolved to coexist in ecological balance, even with the shifts in species composition and abundance that can be caused by the creation of disturbed habitats.

Although not all introduced species become invasive, the few that do can really be a serious problem. Kudzu (*Pueraria lobata*) and loosestrife (*Lythrum salicaria*) are examples of how even well-intentioned introductions can ultimately become extreme problems.

Other introductions either fail to adapt and grow at all or are out-competed and do not become established. The third possibility is that an introduction will "naturalize," that is adapt successfully enough to survive, but not become too successful and

competitive. Some species have been considered successfully naturalized for so long that they are used and treated like natives.

Because of the possibility of an introduced species becoming an invasive weed, and because it may take a hundred or more years before we know whether a successful introduction is just naturalizing or becoming more competitive and invasive, use of wildflowers other than indigenous natives is not recommended. The NWRC is encouraging both producers and consumers to work toward regional wildflower mixes that contain only species indigenous to the region.

## DIRECTOR'S R·E·P·O·R·T

In addition, our research field trials have indicated a 3-to-1 greater success in germination and flowering for indigenous species over introductions! Therefore, for a variety of reasons, adding introduced species with the potential for having to deal with more weeds than we already face, is undesirable.

## Clearinghouse and Library Respond to Digest Article

continued from page 1

person throughout 1985, increasing by over 50% from 1984. However, 1986 is going to be really different!

Because of an excellent 8-page, full color article in the March 1986 issue of *Reader's Digest*, we have already received over 15,000 letters requesting wildflower seed sources and information on how to grow and care for wildflowers and other native

plants. Needless to say, NWRC Information Specialist Nikki Kriss and her hard-working volunteers were literally buried with mail. All of the staff pitched in and working many long hours, responded to each request within two weeks of its arrival.


Even though the *Digest* article asked the readers to send a self-addressed, stamped envelope, the average mailout cost an ad-

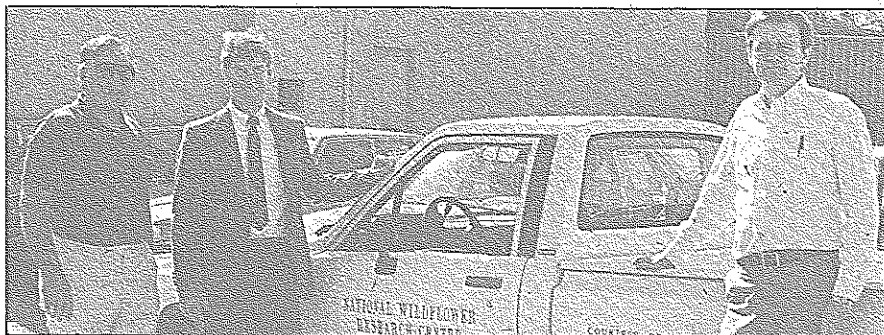
ditional 17¢ in postage.

We are amazed, we are delighted and excited by the number of people interested in wildflowers. We are gratified that we have the information available that the public requests.

Added to this information packet was a request that each of these people consider sending a small donation to help defray additional expenses incurred as a result of the volume of mail we received.

We of course hope that all 15,000 will do even better and become members, so they will continue to receive information through *Wildflower* and find out about our symposia, tours, and other educational activities.

As word continues to spread and public interest in the use of native plants rapidly increases, we are proud that the NWRC Clearinghouse is becoming so widely known as the place to write for information. As they say, keep those cards and letters coming in, folks. (And don't forget the large, self-addressed stamped envelope and donation!) 



### Generous Friends

A Toyota Pick-up, always on loan through the generosity of Austin Toyota. From left to right, Pete Vescovo, owner of Austin Toyota, Dr. David Northington, Executive Director NWRC, Dave Postlewait, Austin Toyota.

Laura C. Martin

People plant wildflowers for a variety of reasons, foremost among them, of course, being because they are beautiful and add such a special spot of color to the landscape.

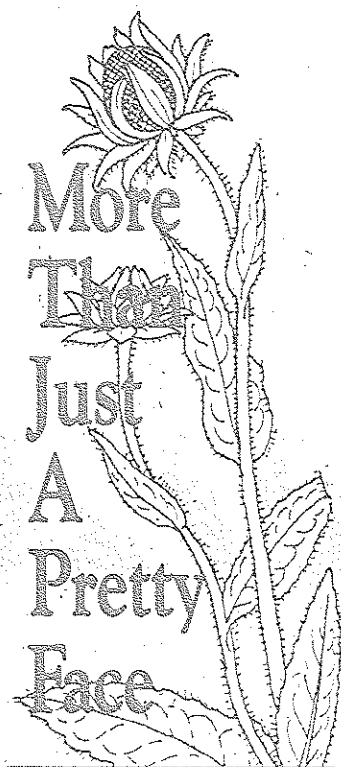
In addition to their beauty, however, wildflower plants can also be used as an abundant source of cut flowers, to attract birds and butterflies, as an economical and low maintenance part of the landscape, and as an unparalleled outdoor classroom to study many phases of nature.

As important as the wildflowers are to us today, their current popularity cannot compare to the essential role they played in the lives of the early settlers and pioneers of this country. From Plymouth Rock to the coast of the Pacific, the native plants served as medicine and as an important source of food to the pioneers.

Although the medicinal and culinary value of our native plants cannot be overlooked, the magical properties of the plants must be considered as well. In days when there were no corner drugstores and doctors usually lived many miles away, great faith was put in the healing properties of plants, and these properties were just as often magical as they were chemical. Knowledge of these plants came from a variety of sources. Much of it was based on the uses of similar plants in the "old country." Much of it was learned from Native Americans and probably a great deal was learned from the age old method—trial and error.

A wonderful example of a plant that served many purposes was the common sunflower, *Helianthus annuus*. The sunflower was worshiped by the Inca Indians as a symbol of the sun. Seeds were collected by Spanish explorers and taken back to Europe where they were cultivated and hybridized and greatly prized.

Many years before Europeans began growing sunflowers, however, Native Americans were



cultivating this plant along the shores of Lake Huron. They found many uses for the plant, grinding the seeds for flour and extracting oil from the seeds for cooking, mixing paints, and even dressing for their hair.

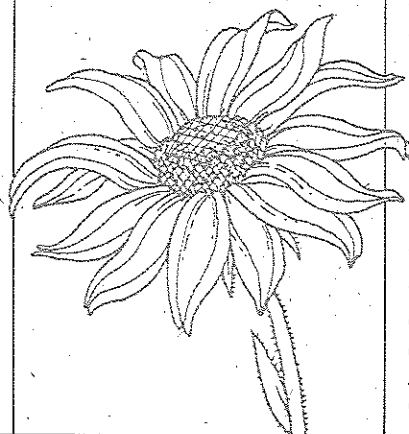
The early settlers adopted many of these uses and added a few of their own, using the leaves and stalks for fodder, fiber from the stalks to make cloth, and drying the leaves to smoke like tobacco. Perhaps the most unusual use of the plant was the custom of planting sunflowers outside the home as protection against malaria.

As the species name suggests, this plant is an annual and under cultivation, can grow as high as twenty feet. Perhaps a better species to use as a horticultural specimen is the narrow leaved sunflower, *Helianthus angustifolius*. Although it is found naturally in swampy areas from New York to Florida, west to Missouri and Texas, it can tolerate drought as well as considerably wet conditions. *H. maximiliani* is a tall sunflower that can grow to a height of eight feet or more. Native to Texas and New Mexico, it is considered quite drought tolerant.

The sunflowers are just one example of a plant that the pioneers found useful. Another good example is the goldenrod. Everywhere the settlers went, they seemed to find some kind of goldenrod turning the landscape a golden yellow in the fall. There are over 85 species of goldenrod native to the United States and each region has its own particular kind of goldenrod, well adapted to the growing conditions found in that region.

The genus name *Solidago* is based on the Latin word meaning "to heal" or "to make whole," but the Romans and Greeks were not the only ones who found medicinal and magical properties in the plant. Native Americans used dried goldenrod leaves in a steam bath designed to steam pain and evil spirits out of someone who was sick. The pioneers made tea out of the dried leaves and even exported it to England, where there developed quite a demand for its healing powers.

In addition to its medicinal and culinary value, goldenrod was also much sought after for its magic, for an old superstition says that whoever carries a piece of the goldenrod will find treasure and good fortune. Although goldenrod is extensively cultivated in Europe and is often found in gardens there, Americans are just now beginning to accept the fact that goldenrod does not cause hay fever and is a valuable wildflower to use in cultivation.



Some species adapt to cultivation better than others. Some of the best species to grow are: *Solidago nemoralis*, the grey goldenrod, which has a greyish cast to its leaves; *S. juncea*, the early goldenrod begins to bloom in July and grows to a height of two to four feet; *S. sempervirens*, the seaside goldenrod, can withstand soggy conditions but does not necessarily need them and can grow in every region of the country.

The sunflower and the goldenrods are just two of the many, many wildflowers that served the pioneers so well in the early history of this country. Joe-Pye weed was used to treat typhoid fever, butterfly-weed was used to cure pleurisy, black-eyed Susan was made into an ointment to soothe skin infections. Cattails were eaten like corn on the cob and the young shoots of milkweed were cooked and eaten like asparagus. Candy was made from the violets and jams and jellies were made from the fruit of the passion flower vine. There are hundreds of examples of the wild plants making lives better because they were used for food or medicine.

Using the knowledge of plants learned from their former homes and the ingenuity born from necessity, the early settlers were able to satisfy many of their needs by using the native plants. So while the wildflowers are unquestionably beautiful, it is also nice to remember a stand of wildflowers can teach us history as well as botany.

We would do well to remember the potential for medicines and other products that our native plants hold and to treat them like the wonderful national treasure that they are.

Laura C. Martin is author of *Wildflower Folklore and Wildflower Meadow Book: A Gardener's Guide*. She is currently coordinator of native plant research at the Atlanta Botanical Gardens, Atlanta, Georgia.

# Watercatchment:

## Natural Water Source Available

Wendy Wood

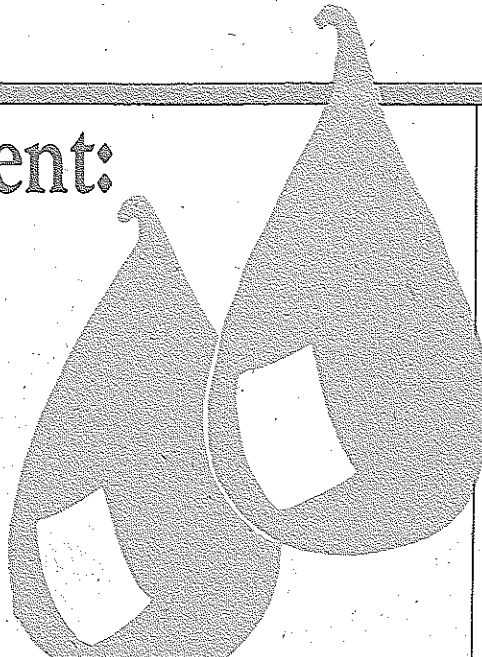
After living in New York City for 25 years, I became insulated to the scarcity of various forms of environmental comforts. One of the forms I took scant notice of, until there was pressure from the city to conserve, was "water." Two-and-a-half years ago I moved from the city to the small Hill Country town of Wimberley, Texas and to the National Wildflower Research Center in Austin. At this juncture in my life I became very aware of the importance of water conservation, as the Center is without its own natural source of underground water.

Water can be trucked in to the Center on request to the City of Austin and emptied into a 3,000 gallon cistern—a cylindrical cement unit built in the ground. When research goes full force during the long summer months this source quickly empties, even though a load of water can be delivered daily.

Over the past three-and-a-half years there have been long periods with no rain and the precinct delivering water becomes backlogged with requests from ranchers and farmers in serious need of water for their livelihood. So there were days when we would have to closely monitor our consumption.

In an effort to find a solution to the water problem, twenty-seven holes were drilled on the property, seeking and hoping for a gush of that clear crystal stuff—but no success—and to our amazement, for the Center sits on the banks of the Colorado River. However, it is situated on a clay dome, rather than over an underground sand or gravel bar, which would provide a supply of well water with only a 40-50 feet well.

As the cistern holds insufficient water for the needs of the Center and there was no possible way of establishing a well, we were clearly facing an increasing problem. After much discussion and investigation of our options, we discovered that the Royal Botanic Gardens, Kew, in London, England, provide for all their water needs, for greenhouses and gardens, through a water-catchment system. We decided to build our own version last summer.



In came the bulldozer and behind the greenhouses on the edge of the hillside sloping down to the river a large hole, ten feet deep, was excavated to accommodate two prefabricated 12 feet by 12 feet tanks of green fiberglass, each capable of holding 10,500 gallons of water. Standard galvanized steel gutters were mounted around the roofs of both greenhouses and the main office building, which connect to underground pipes that run to the tanks.

Setting the tanks in the ground allows gravity to fill them from the building and greenhouses. The capacity of the tanks was determined by water consumption, size of the watershed and the amount of rainfall in a given year. A filtering system was installed to siphon off the first wash of rain from the gutters. In addition a pump house was built, with a sand filtering system at the pump to bring the water up and out of the storage tanks for use in the greenhouse and office building.

After completion of this system we waited patiently for a good rainfall and in September-October 1985 we had success. Tanks were full to capacity, and with good rain through November and December the Center had water from the catchment system through the middle of February of this year.

Now a dry period has set in and once again we are requesting water from the city. Every day I listen and my eyes turn upward hoping and looking for the spring rains to replenish the green fiberglass tanks for our long, hot summer.

Wendy Wood is Senior Administrative Assistant and Facilities Manager at the National Wildflower Research Center.

## FROM THE M·A·I·L·B·O·X

May-July, 1986—"Field Courses at Sycan Marsh," ten-day field courses on ornithology, botany, and regional land use sponsored by the Nature Conservancy at Katharine Ordway Sycan Marsh, Oregon. For detailed information contact: Sycan Program, The Nature Conservancy, 1234 N.W. 25th Avenue, Portland, OR 97210 (503) 228-9561.

May-July, 1986—"Saturday Seminars," various seminars on wildflowers and native plants at the Chihuahuan Desert Research Institute, Alpine, Texas. For detailed information contact: CDRI Education Director, Box 13341, Alpine, TX 79831 (915) 837-8370.

May 9-11, 1986—"Spring Wildflower Symposium" at Wintergreen, Virginia. Symposium will spend time hiking on Wintergreen in the Blue Ridge Mountains. Contact: Sue Ellen Lee, Wintergreen, VA 22958 (804) 325-2200.

May 10-18, 1986—"60th Annual Wildflower Show" in Julian, California. Vivid displays of area wildflowers and shrubs. Contact: Julian Women's Club, P.O. Box 393, Julian, CA 92036 (619) 765-1276.

May 16, 1986—"Landscaping with Nature" at The Woodlands, near Houston, Texas. Practical information and discussion about wildflower and native plant projects. Contact: National Wildflower Research Center, 2600 FM 973 North, Austin, TX 78725. (512) 929-3600.

June 15, 1986—"Operation Wildflower Workshop" sponsored by the Nebraska Federated Garden Clubs in Norfolk, Nebraska. Contact: Mrs. Adolph Travnicek, Cedar Bluffs, NE 68015.

June 22-26, 1986—"North American Prairie Conference. North American Prairie: The Roots of our Culture, The Foundation of our Economy" at Texas Women's University, Denton, Texas. Contact: The Program Committee, Native Prairies Association of Texas, TWU, P.O. Box 22675, Denton, TX 76204.

July 18-20, 1986—"Crested Butte Wildflower Festival" in Crested Butte, Colorado. Workshops on natural history, photography, and landscaping in the heart of the Rocky Mountains. Contact: Wildflower Festival, P.O. Box 1288, Crested Butte, CO 81224 (303) 349-6438.

July 26-27, 1986—"Missouri Prairie Foundation—20th Anniversary" in Columbia, Missouri. Paper sessions, exhibits, field trips. Contact: MPF Celebration, Box 200, Columbia, MO 65205.

# Seedling Identification

## Photos Make A Difference

**T**he Wildflower Center is proud to be working on a seedling identification program which will prove to be a valuable source of assistance to home gardeners, landscapers, and botanists:

Fifty species of wildflowers, chosen from among the species commonly found in commercial wildflower mixes designed for the south-west, are being grown in the Center's state-of-the-art greenhouse.

These species are being photographed at three to four stages of growth, giving an excellent photographic study of each seedling. These photographs will be used as a guide to identify which wildflowers are germinating and flourishing in your own backyard, in commercial landscapes, and along roadsides, long before they flower. The Center hopes that sets of these photographs, in slide form, will be available for purchase beginning next spring.

Photographing these seedlings at their various stages of growth is a time consuming procedure, explained botanist Pam Dwiggin, who along with photographer John Smithers is implementing this study.

Two to three views are photographed:

- at the young seedling stage, showing cotyledons and the first true leaves
- at the mid-growth stage, when the plant takes on more mature characteristics, and is growing robustly
- at the pre-flowering stage, if the plant experiences substantial stem elongation
- at the flowering stage

This identification study is planned as an ongoing, long

term project of the Center. Next year seedlings from other regions of the United States will be added to the study.

The potential for assisting gardeners is immense. Says Pam Dwiggin, "This should help all wildflower growers from becoming discouraged in the early seedling growth stages, as you will be able to identify which wildflowers are coming up, and be able to remove those undesirable plants which could invade your stands."

However, this program desperately requires additional funding in order to completely attain its goals. Study of the initial fifty species will require an additional \$3,500 before mid-sum-



John Smithers and Pam Dwiggin working on the seedling identification study.

mer. Continuation and expansion of the project will cost \$75 per species studied.

Individuals and agencies who would like to support this program should contact Associate Director Carolyn Curtis at the Center.

Annie Paulson

**A**tremendous rise in interest in native plants in recent years, for public and private landscaping, has occurred at the expense of wildflowers and other native plants. The primary reason for plant extinction is destruction of habitat due to urban development and agricultural expansion, but secondary contributions of overcollection and competition or predation by introduced species has profound effects.

Over 2,500 species or subspecies of native plants are threatened with

## Know Your Nursery Sources

extinction over the next few decades. In addition, many more species are on the brink of extinction in some states, although they are plentiful in others.

Consequences of exploitation of plant species is inextricably tied to habitat destruction. The stability of the ecosystem is a highly complex balance between living communities and non-living components. The addition or deletion of one species or element may have great repercussions. It is never an isolated event, no matter how small or large the change, but rather the beginning of a chain of reactions felt throughout the ecosystem.

When landscaping with native species, you may be indirectly contributing to habitat destruction by buying plants which were collected from the wild. Concerned gardeners should check on the origin of the plants they buy. Ask if the nursery propagates their own stock, or if they do collect, are they involved with plant rescue from sites destined for clearing.

The importance of acquiring plants from appropriate sources can not be stressed enough. Creating a demand for propagated nursery

stock may open the industry to respond and supply the market with properly grown plant material.

A horticulturist's ability to propagate plants can make a very positive contribution to the conservation of many plant communities. A primary concern should focus on learning proper propagation and cultivation techniques of native species, in order to develop practical and economical alternatives to the collection in the wild of native plants for our gardens. We need not rely on collected materials, especially at the expense of endangering habitat.

Collection of specimens for research is permissible, but it should be done cautiously to avoid threatening any plant populations. The Center for Plant Conservation (CPC) was established to learn more about the propagation of endangered species. Professionals from twenty botanical gardens across the country are working cooperatively with the CPC. Each participating botanical garden experiments with plants adapted to its region. The CPC headquarters is located at Harvard's Arnold Arboretum in Jamaica Plain, Massachusetts.

The Endangered Species Act provides an array of conservation measures for endangered and threatened plants. It is illegal to collect, trade or import/export listed plants, unless a permit has been issued. To obtain a list of endangered or threatened species in the United States, write: Endangered Species Program, U.S. Fish and Wildlife Service, Washington, D.C. 20240. Individual states publish lists of rare or protected plant species, but they are administered through different agencies: Contact one of the following: State Natural Heritage Program, State Department of Environment or Natural Resources, or Department of Agriculture. Awareness of what species are threatened will lead towards preservation of many wild species and their habitat.

Annie Paulson is a resource botanist at the National Wildflower Research Center.

## HIGHWAYS & B-Y-W-A-Y-S

Not only is Florida the Sunshine State, but it may soon be a contender for the label "wildflower state," counting all the recent wildflower happenings in the southeast. Governor Bob Graham has endorsed a plan to remove all exotic plants from state parks and buildings, and replace them with species native to Florida. All newly landscaped areas could now bloom with morning glory, standing cypress, goldenrod or rubber vine.

Admirable too, is the *Paths of Sunshine* award, a joint program of the Florida Department of Transportation and the Florida Federation of Garden Clubs, which will recognize the special contributions made

by personnel working on the states' roadsides to "promote the establishment, retention and enhancement of native plants and wildflowers." Cash awards will be made by the Governor to each year's winners, Florida's dedicated wildflower preservers!

Executive Director: Dr. David Northington  
Associate Director: Carolyn Curtis  
Editor: Mae Daniller  
Art Director: Deborah Mullins

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## Wildflower Journal Planned

To provide for the need to publish research reports, species information, and related articles on wildflower conservation and use, the NWRC is planning publication of a journal.

The first issue is scheduled for distribution at the end of the year, and instructions for potential contributions will be available in the next issue of *Wildflower*. We welcome your suggestions and comments on the format and scope of this publication.

## How To Become A NWRC Member

Your membership donation is tax deductible to the extent allowed under Federal and State laws. For information concerning the benefits of each level of membership, please contact the Center. Return to: Membership, National Wildflower Research Center, 2600 FM-973 North, Austin, TX 78725.

- \$25 Supporting Member
- \$250 Center Sponsor

- \$50 Sustaining Member
- \$500 Trust Member

- \$100 Key Member
- \$1000 Benefactor

Please make your check or money order payable to "NWRC."

From: *Title/Name*  
*Address*

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Please provide the following information if you wish to charge your membership donation.

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Wildflowers Work!

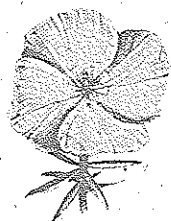
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National Wildflower Research Center

2600 FM 973 North  
Austin, TX 78725