

WILDFLOWER

A non-profit organization committed to the preservation and reestablishment of native wildflowers, grasses, shrubs, and trees.

Sow A Spectacular Spring This Season

Fall always has been nature's favorite time to reseed for the coming spring. But why is fall the best season to plant for the following year?

Why Plant In Fall?

Although planting times vary according to species and region, most native plants do well when seeded in the fall. Native plant species have evolved mechanical and chemical mechanisms to prevent seed germination until environmental conditions, particularly moisture and temperature, are ideal for growth.

Many wildflower species require special treatment before their seeds will germinate. Changing winter temperatures cause the soil to freeze and thaw, creating a churning movement. This churning scratches and nicks the seed coats, creating openings that allow water to invade and germination to begin. Other seeds require a period of cold temperatures to initiate the chemical reaction necessary to break their dormancy.

Know Your Species

The process of fall planting starts with lots of planning. Before seeding begins, learn about the species indigenous to your area. Research the type of sites they prefer as well as their height, bloom period, and life history (annual, biennial, or perennial). Travelling through local natural areas during different seasons will provide wonderful ideas for the best mix of annuals and perennials to use as well as their preferred habitat.

Soil Preparation

Soil preparation is the next step. This means clearing the area of existing weeds and roughening the soil, a process that may take a couple of months to complete. Weeds can be eradicated by covering the seed bed with black plastic two months before planting. This forces the weed seeds to germinate and burn under the dark tarp. Another method of clearing weeds is tilling the seed bed in mid-summer and watering it. The soil disturbance and moisture

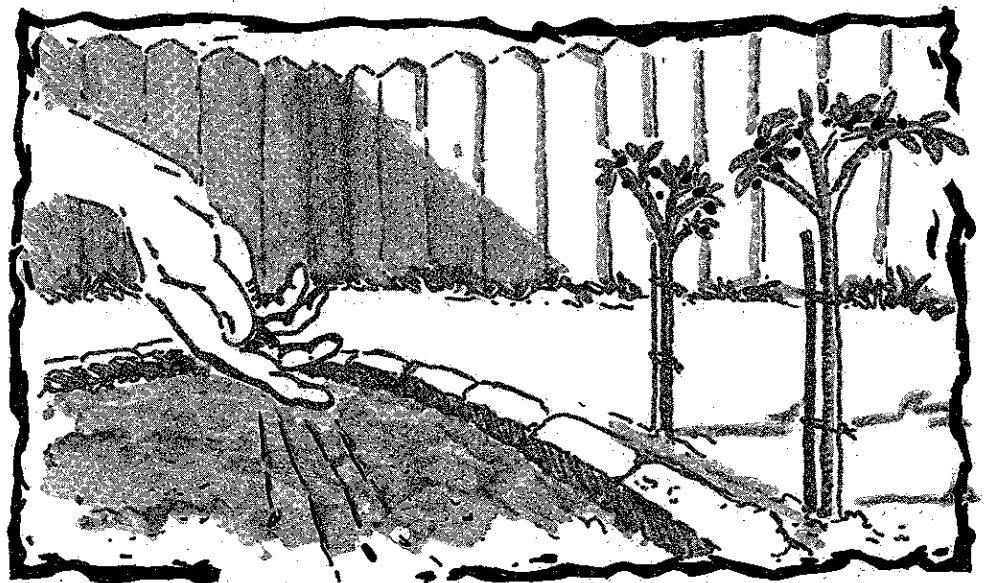
will encourage the weeds to grow. Treat them with a non-residual herbicide such as Roundup. Water the bed again to allow the remaining seeds to germinate and treat these new seedlings with the herbicide.

Sowing wildflower seeds with existing grasses is possible if they are not cool season grasses, which are aggressive and grow during the fall, or turf grasses, which have thick, fibrous root systems and crowd out seeds trying to germinate. Native clump grasses, such as buffalostems, muhly grasses, and buffalo grass, work well with wildflowers. To prepare a grassy area for planting, mow as short as possible and rake the thatch away to expose the bare soil.

Sowing Seeds

Once the area has been prepared, you are ready to plant. Your particular method of seed application will be determined by the size of the project and the terrain. Hand broadcasting is the easiest method for small areas. Mixing the seeds with

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Bridging the Exhibit Gap

In the last two hundred years, we have moved from displaying complete collections of objects in rows of glass cabinets to interactive experiences that involve the visitor, providing fun and entertainment, as well as solid information. Good exhibits should tell a story, bring this story to where many people can experience it, relate it to what people already know, and, most importantly, arouse curiosity and imagination.

At the Wildflower Center's new home, creating exhibits to complement and interpret the natural site is an exciting project. Dreaming about what we want the exhibits to tell our visitors, watching those dreams come to life, and using and evaluating our product will be very fulfilling for us.

Our exhibit creation process begins by delineating the most important concepts we wish to teach — what a native plant is and is not, information about individual plants, ecological ideas, the history of land use, how-to gardening information, and why plants grow where they

grow, to name but a few. We must then decide which medium is best for conveying that information: A brochure? A program? An outdoor sign? An exhibit?

To help us develop our ideas and stories, Deaton Museum Services (DMS) of Minneapolis has been contracted to design the exhibits for our new Center. Deaton has created exhibits for the Smithsonian, Hoover Presidential Library, the Carnegie Museum, and other established clientele. DMS designers will work with Wildflower Center educators and botanists to help us bring our ideas and stories to life.

A major consideration is you, our audience. We are trying to understand when you are likely to visit the exhibit hall, how much time you will want to spend there, whether you will come individually or as part of a group, and how much time you will want to spend in the gardens and on the nature trail.

Wildflower Center members are one of our greatest resources, and we are truly interested in the wealth of knowledge you possess. Write me a note about your thoughts and ideas. Where have

you been that you thought was extraordinary? What learning experiences stand out in your travels?

The exhibits are only a bridge, they are not the river; artificial exhibits will never replace first-hand experiences with nature. We want you to find our exhibits thought-provoking and motivating, revealing new information and relationships about the natural world and your place within it. We want them to motivate you to go out and experience nature first-hand, to learn more about this beautiful North American continent, and to be inspired to pick up a shovel in your own yard and plant a native to help sustain our Earth.



Julie Barrett Heffington is the Education Director of the National Wildflower Research Center.

Wildflower

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WILDFLOWER CENTER NEWS

Lil Flaigg, a Center volunteer for over 9 years, recently logged her **3,000th hour of volunteer time**. Her dedication is sincerely appreciated. Lil's husband, Norm, is close behind with 2,800 hours.

Destinations magazine featured the Wildflower Center as a new travel destination in its August issue. *Destinations* is the magazine of the American Bus Association, and goes out to more than 6,000 subscribers. Many of these subscribers are tour operators who are always on the lookout for new and interesting places to visit.

The Wildflower Center was invited to participate on the steering/organizing committee of the **North American Native Plant Strategy**, hosted by the Bureau of Land Management, the National Park Service, and the U.S. Forest Service. As a result of our input, we were asked to draft the Executive Summary for the 34 participating agencies and national organizations.

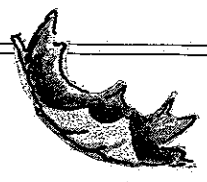
Our annual **Membership Open House** was held August 4 at the site of the

Wildflower Center's new home in Southwest Austin. Members who braved the Texas heat were treated to Amy's Ice Cream (the best in Texas!), bluegrass music, and a preview of the new facility.

Josh Blumenfeld has joined the Wildflower Center staff as our **new Editor/Writer**. Josh hails from Atlanta, Georgia, and brings to this position a dynamic combination of skills. He holds a Master of Science in land resources, specializing in plant ecology and botany, from the Institute for Environmental Studies at the University of Wisconsin and has a strong background in writing, editing, and research.

Look for a feature article by Horticulturist Denise Delaney in the September issue of *Neil Sperry's Gardens Magazine*. "The Natives are Friendly" offers an enlightening viewpoint of native plants that dispels many of the myths and misconceptions associated with using them. For a reprint, please contact *Neil Sperry's Gardens Magazine* at (214) 562-5050.

Fall Foliage: The Majesty Of The Hues



October is the month for painted leaves. Their rich glow now flashes round the world. As fruits and leaves and the day itself acquire a bright tint just before they fall, so the year near its setting. October is its sunset sky; November the later twilight.

—Henry David Thoreau,
Autumnal Tints

Fall is a magical time of year, and nowhere is it more magical than in the hardwood forests. Here, seemingly overnight, the once green foliage becomes a blaze of brilliant color. And what glorious color it is! The golden shades of Colorado's aspens, the brilliant reds and oranges of New England's sugar maples, the magnificent scarlets of the South's red oaks.

How does Nature produce these beautiful shades of red, orange, yellow, and, sometimes, blue? The answer may surprise you.

Leaves capture the sun's energy for use in the food-making process called *photosynthesis*. Each leaf cell contains small, pigment-containing structures called *chloroplasts*. The dominant pigments in leaves are two types of *chlorophyll*, A and B, which absorb energy in the red and blue spectrums of light. However, they don't absorb energy in the green spectrum, that energy is reflected back and we perceive it as the green color of leaves.

Chloroplasts of mature leaves also contain other pigments, including the red, orange, and yellow *carotenoids* and the pale yellow and brown *xanthophylls*. These so-called *accessory pigments* absorb wavelengths of light different from those absorbed by the chlorophylls. Like the chlorophylls, they reflect energy they are unable to absorb, which we see as the reds, oranges, and yellows of fall leaves.

But, if these accessory pigments are always present, why can't we see them?

Chlorophylls are generally present in much larger concentrations, and their intense green color tends to hide the colors of the carotenoids and xanthophylls. As fall approaches, however, the chlorophylls begin to break down and other colors appear.

In addition, sugars build up in the *vacuoles* (storage spaces) of leaf cells, favoring the formation of two types of water-soluble pigments: *anthocyanins* and *betacyanins*. Anthocyanins are more common, and their colors will vary depending on the pH of the cell sap in the vacuole. If the cell sap is acidic, anthocyanins will be red, if alkaline, blue; and if neutral, some intermediate shade.

Betacyanins are usually red. They produce the pigments of some of our more familiar plants, such as cacti, beets, and tomatoes, and are restricted to just a few plant families.

While most trees will exhibit the same colors year after year, considerable variation within species often exists. These variations are determined by the combinations of pigments present in each leaf.

Fall is Nature at her best. The next time you stop to marvel at a landscape ablaze with color, remember the words of Henry David Thoreau: "Here is not merely the plain yellow of the grains, but nearly all the colors that we know, the brightest blue not excepted. the early blushing maple, the poison sumach blazing its sins as scarlet, the mulberry ash, the rich chrome yellow of the poplars, the brilliant red huckleberry, with which the hills' backs are painted like those of sheep." And, above all, enjoy!

F M Oxley
Resource Botanist
National Wildflower
Research Center



These field guides will help you identify and learn about leaves and trees:

Trees by Allen J. Coombes (Eyewitness Handbooks), *The Audubon Society Field Guide to Trees*, the Peterson Field Guides to Trees, and *Trees of North America* (Golden Field Guide). Children's guides include: *Trees* (Science Nature Guides), *Trees* (Eyewitness Books), *Trees* (Golden Guides), and *Peterson First Guide to Trees*.

Fall Foliage Fun

With a little time and patience, you can bring the exuberance of fall foliage colors into your home, office, or classroom.

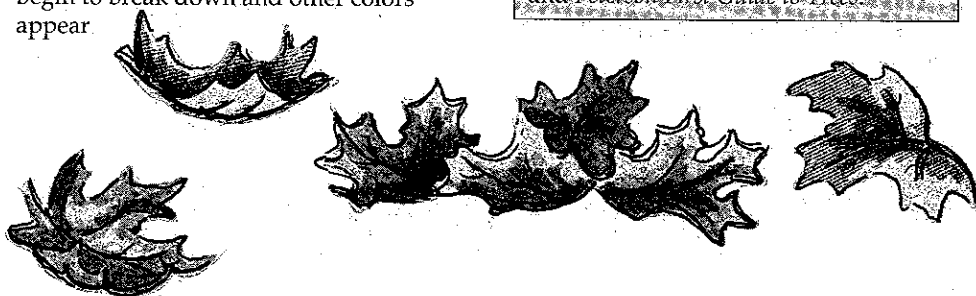
Here's how to create beautiful leaf prints on everything from tee shirts to trick-or-treat bags. You will need:

- ✿ Leaves of various shapes and sizes
- ✿ Acrylic paints for painting on paper
- ✿ Textile paints for painting on cloth
- ✿ Paint brushes (kid's brushes of various sizes work well)
- ✿ Paper or cloth items to be printed
- ✿ Work surfaces covered with newspaper
- ✿ Paper towels

Place the leaf vein-side up. Brush the leaf evenly with a light coat of paint (make sure the paint is appropriate for the material you are working with). Carefully pick the leaf up and place the painted side down on the material to be printed. Place a clean paper towel over the leaf and gently rub, printing the image of the leaf on the material. Try multiple colors on one leaf, varied printing patterns, or printing on a variety of materials. For an extra touch, paint the name of the trees on your finished product as well! (Fabric paints now come in pen-like dispensers.)

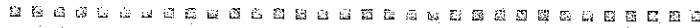
Helpful hints:

- ✿ Soft, pliable leaves such as maple, cottonwood, buckeye, ash, hickory, dogwood, tulip tree, sweet gum, sassafras, or basswood work best.
- ✿ Collect leaves as they fall for printing later (leaves collected before they dry out work much better). Stored in the refrigerator inside an airtight bag with a damp paper towel, they will keep for weeks.



Wildflowers

NOTEBOOK



Botanical Name: *Oenothera deltoides*
Pronunciation: Ee - no - the' - ra del - toid' ees
Common Names: Desert evening primrose, birdcage evening primrose, dune primrose, devil's lantern, lion-in-a-cage
Family Name: Onagraceae

(Evening Primrose Family)
Range: Eastern Oregon to southern California, Arizona, and Utah
Habitat: Sandy deserts
Bloom Period: March through July

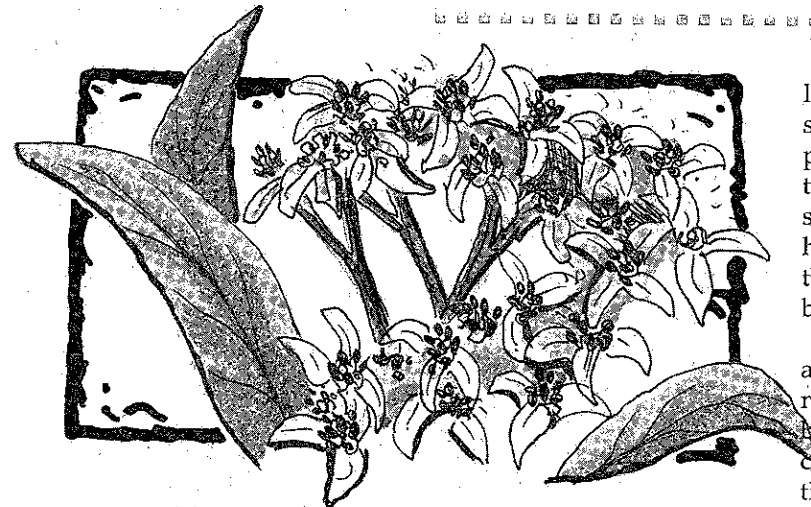
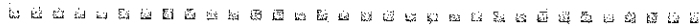
When rainfall is abundant, the beautiful flowers of the

desert evening primrose bloom in mass profusion. As evening approaches, hundreds, and sometimes thousands, of the white, paper-thin flowers quickly pop open. Before the flowers close in the early morning, the desert floor appears to be covered in a carpet of white tissue paper.

An annual common in sandy areas below 3,500 feet, the desert evening primrose is a grayish plant with large, white flowers on short, central stalks. Flowers can also grow at the leafy ends of otherwise leafless stems rising from dense basal rosettes. Flowers can be up to three inches wide and are composed of four broad, white petals, which

turn pale pink as they age. Leaves are diamond- or egg-shaped and are alternately arranged along the stems.

The name primrose comes from a Latin word meaning "first," and true primroses are some of the first flowers to bloom in the spring. Legend has it that evening primroses (not related to the true primroses) were inadvertently named by a botanist describing a new species of *Oenothera*. The botanist, commenting on the scent of the *Oenothera*, said it reminded him of the wild primroses in Europe. He referred to the new species as a "primrose" and the name stuck.



Botanical Name: *Verbesina virginica*
Pronunciation: Ver-beh- seen'-ah ver-gen'-ee-kah
Common Names: Frostweed, tickweed
Family Name: Compositae or Asteraceae (Sunflower Family)
Range: Gulf States, north to Pennsylvania and Ken-

tucky, Missouri and Kansas
Habitat: Loamy soil in shady areas
Bloom period: Late summer to fall

The first time I saw *Verbesina virginica*, I understood why this plant is called frostweed. At first, I thought someone had

littered the ground with sheets of crumpled white paper. On closer examination, I noticed the delicate sheets of ice crystals that had formed as moisture in the stems burst from the base of the plant.

Many butterflies are attracted to frostweed's nectar. Others, such as bordered patch and silvery crescent-spot butterflies, lay their eggs on the plant so their larva can feed on the leaves.

Frostweed is a tall (three to six foot) perennial. The small, white flowers are arranged in clusters on an inflorescence that can be six inches across. Each tiny white "flower" is actually composed of individual disk and ray flowers, a trait

of the Compositae family. The stems have wing-like ribs along their length.

Frostweed is also a common name for a different species of flower, *Helianthemum canadense*, which is a member of the Cistaceae, or rockrose, family. *Helianthemum* also forms ice crystals at the base of the stem after a frost; however, this frostweed has yellow, five-petaled flowers and is found in the north-east United States and southeast Canada.

If you live near some frostweed, don't forget to look for the "ice blooms" after the first frost. It is one of nature's signs marking the coming of winter.

FROM THE FIELD

Northeast

Burlington, VT: *Third Annual National Watchable Wildlife Conference, Oct. 26-29, Contact:* Hannah Kirchner or David Case, National Watchable Wildlife Conference, 607 Lincolnway West, Mishawaka, IN 46544, (219) 258-0100

Mid-Atlantic

New Brunswick, NJ: *19th Annual Fall Home Gardeners' School, Sept. 10, Contact:* Irene Wanat, Program Consultant, Office of Continuing Professional Education, Cook College, P.O. Box 231, New Brunswick, NJ 08903, (908) 932-9271

Boyce, VA: *In the Public Eye: The Design of Small Gardens, Oct. 8, Contact:* Friends of the State Arboretum, State Arboretum of Virginia at Blandy, P.O. Box 175, Boyce, VA 22620-0175, (703) 837-1458

Southeast

Palm Beach Gardens, FL: *Ecosystem Management and Restoration for the 21st Century, 1994 Natural Areas Conference, October 19-22, Contact:* Bill Helfferich, South Florida Water Management District, P.O. Box 24680, West Palm Beach, FL 33416-4680, (407) 687-6637

Sarasota, FL: *Native Plant Symposium: Landscaping with Florida Native Plants, Oct. 22, Contact:* Leah Wilcox, Florida Native Plant Society, P.O. Box 564, Sarasota, FL 34230, (813) 366-9716

Texas/Oklahoma

Lubbock, TX: *Sixth Native Plants and Wildflowers Symposium, Native Plants and Wildflowers: Past, Present, and Future, Sept. 17, Contact:* The Department of Plant and Soil Science, Texas Tech University, Lubbock, TX 79409-2122, (806) 742-2837

Corpus Christi, TX: *Native Plant Society of Texas Annual Meeting and Symposium, Oct. 14-16, Contact:* Native Plant Society of Texas, P.O. Box 891, Georgetown, TX 78627, (512) 863-9685

Washington, TX: *Magical, Mystical Herbs Seminar, Oct. 29, Contact:* Peaceable Kingdom School, P.O. Box 313, Washington, TX 77880, (409) 878-2353

Southwest

Albuquerque, NM: *Excellence in Wildlife Stewardship Through Science and Education, Sept. 21-25, Contact:* The Wildlife Society, 5410 Grosvenor Lane, Bethesda, MD 20814-2197, (301) 897-9770

Northwest

Portland, OR: *National Roadside Vegetation Management Association Annual Meeting, Oct. 12-14, Contact:* NRVMA, 309 Center Hill Rd., Centerville, DE 19807, (302) 655-9993



It's Almost Here! The 2nd Annual Night of the Wildflowers: Burlap and Blooms at the Backyard

Tickets are still available for the Wildflower Associates' second annual *Night of the Wildflowers* fundraising event. Mark your calendars for Saturday, October 15, and join the Associates for a moonlight gathering under the oaks at the Backyard at Bee Cave (outside Austin).

The event will feature the Backyard's "creative cowboy cuisine" and include an exclusive auction featuring get-away vacations, arts and crafts, and other exciting items. Country music will be provided by Austin's own Kelly Willis, recently nominated for Best New Female Artist by the Academy of Country Music.

The evening begins at 7.30 p.m. and tickets are only \$50 per person. Please contact the Wildflower Center's Development Office at (512) 929-3600 for more information. We hope to see you there!

Building A Better Center: An Update

So much is now happening at the construction site of our new Center in Southwest Austin! As of September 1, the following should be accomplished:

- ❖ Entrance aqueduct and walkway completed
- ❖ Auditorium enclosed, its metal roof completed, and outside stone-work finished
- ❖ All stonework on the visitors' gallery finished, with the roof on and gallery windows in place
- ❖ Observation tower will be almost finished
- ❖ Gift shop, public restrooms, and children's discovery room will have walls and roofs in place and ready for outside finish work
- ❖ Administration/library building framed, interior wall studs in place and decking on the roof
- ❖ Research building ready for outside finishing work
- ❖ Retaining walls for the display gardens in place and foundations for the greenhouses poured

This short list does not do justice to the excitement of seeing our dream finally taking shape. We anticipate our public grand opening the second week of April, 1995. Look for details in future issues of *Wildflower* and plan to join us for this gala event.

David K. Northington, Ph.D.
Executive Director

September/October 1994

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"Where's My Journal?"

In an effort to better serve our membership, the Education Department is reviewing the Center's publications and conducting a survey to determine the effectiveness of these publications. During this review period, publication of the journal, *Wildflower*, has been discontinued. Content changes in the newsletter are being considered in an effort to expand the scope of information currently offered in this publication.

We will keep you posted on the review process and let you know the results of the survey.

Fall Planting

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a heavier medium, such as sand, aids in even distribution. Larger areas may require a seed driller, drilling at a maximum depth of one-quarter inch.

Good seed to soil contact is *crucial* at this point. Seed that does not reach the ground will not have an opportunity to germinate and is wasted. In smaller areas, help the seed reach the soil by lightly raking over the seed bed.

The seed also requires sufficient moisture to germinate. Keep the soil moist, but not saturated, watering several times over two to three weeks. Once seedlings become established, supplemental watering will be required only during drought periods.

The Waiting Game

The final ingredient to creating a wildflower garden is patience! Annuals will germinate quickly and dominate the site the first year. Perennials use the first year to establish a healthy root system and should be blooming by the second or third year. During the initial stages of the garden, weeding will be necessary until the wildflowers become the dominant vegetation. If you wish to allow the plants to reseed for the following year, do not mow until at least half of the latest blooming species have dropped seeds. Fertilizing is not necessary, as many wildflowers

prefer soil with low fertility.

Nature has created many enchanting wildflowers for us to enjoy in our gardens, taking thousands of years of preparation and patience to do so. By following her lead, planting wildflower seeds in the fall will produce a spring and summer full of hardy stands of native plants.

Angela Barton
Resource Botanist
National Wildflower Research Center

Show Your Fall Finest: 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:

- ❖ Free admission for you and your immediate family to the Wildflower Center's new gallery and gardens.
- ❖ *Wildflower*, the award-winning newsletter.
- ❖ A 10% discount on unique Center products such as wildflower books, calendars, and T-shirts.
- ❖ Advance notice of tours and discounts for Center seminars.
- ❖ Free information from the Center's Clearinghouse.
- ❖ A membership card.

Yes! Please enroll me as a supporting Member of the National Wildflower Research Center.

- \$25 Supporting Member.
My check for \$25.00 is enclosed.

Please enter a supporting membership for:

Name: _____
Address: _____
City/State/ZIP: _____
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Gift Membership: If you are giving this membership as a gift, please enter your name and address below.

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- Make your check payable to: NWRC
- Mail to: Membership, National Wildflower Research Center, P. O. Box 550, Austin, TX 78767-9778

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Wildflowers Work!

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