



WILDFLOWER

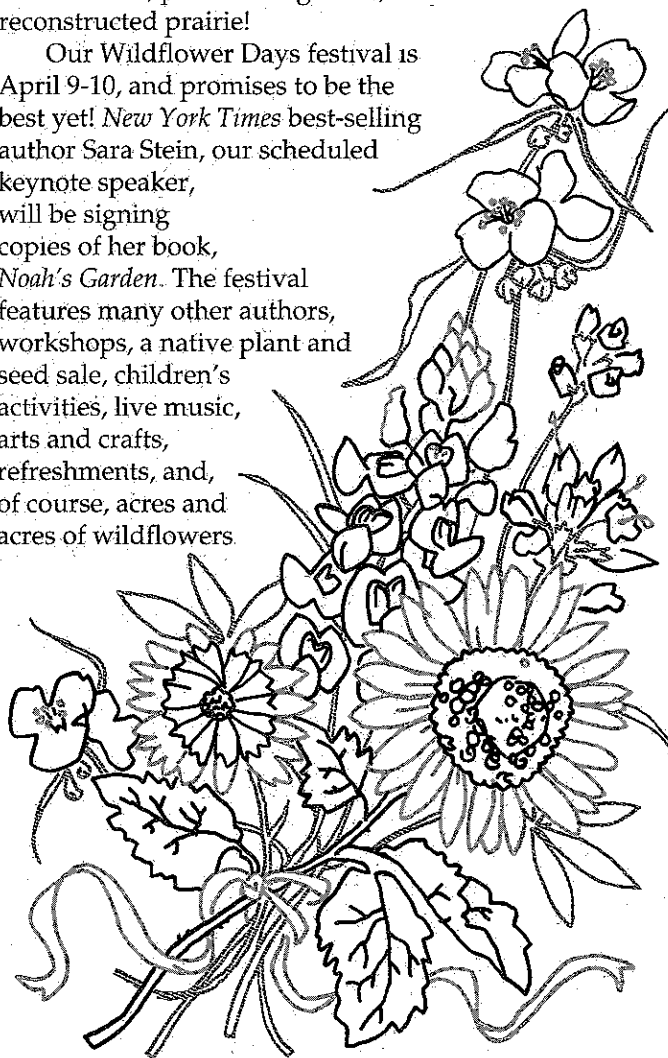
A non-profit organization committed to the preservation and reestablishment of native wildflowers, grasses, shrubs, and trees

CELEBRATE SPRING with the NATIONAL WILDFLOWER RESEARCH CENTER

If you haven't visited the Wildflower Center since you've been a member (or even if you have), consider this a personal invitation from all of us here at the Center. Make plans now to visit us in March, April, or May — by far the most beautiful months at the Center and in the Texas Hill Country.

Spring hours at the Center are always extended to include the weekends during the Hill Country's peak bloom season. Dates to mark on your calendar this year are March 19 through May 7. We will be open Saturdays and Sundays 10 a.m. to 4 p.m. (except Good Friday, Easter, and Mother's Day), and Monday through Friday 9 a.m. to 4 p.m. Come stroll through our meadow, pollination garden, and reconstructed prairie!

Our Wildflower Days festival is April 9-10, and promises to be the best yet! *New York Times* best-selling author Sara Stein, our scheduled keynote speaker, will be signing copies of her book, *Noah's Garden*. The festival features many other authors, workshops, a native plant and seed sale, children's activities, live music, arts and crafts, refreshments, and, of course, acres and acres of wildflowers.



HOTLINES



The Wildflower Center's annual Texas Wildflower Hotline resumes again March 19 - May 21. Wildflower watchers can call (512) 370-0000 extension 9500 to hear a recording highlighting the best roadside wildflower viewing spots in Texas. The Hotline is updated weekly by Center botanists and sponsored by KKMJ-MAJIC 95.5 FM in Austin.

The Desert Botanic Garden in Phoenix, Arizona operates its recorded hotline from March 1 to April 30 this year. For information on the best spots to see Arizona's beautiful wildflowers, call (602) 481-8134.

The Theodore Payne Foundation in Sun Valley, California is operating its wildflower hotline from March 1 to May 30. This hotline features weekly wildflower updates for Anza-Borrego Desert State Park, Joshua Tree National Monument, Antelope Valley, the Santa Monica Mountains, and the San Gabriel Mountains. Call (818) 768-3533 for pre-recorded updates.

Red Butte Gardens in Salt Lake City, Utah operates its hotline from April 1 through Oct 31. Areas covered in this five-minute recording include Zion National Park, St George, Monument Valley, Lake Powell, the Wasatch Front, and Moab. Call (801) 581-4747.

GIFTS INSIDE

Today's children are tomorrow's decision makers

We all know there are wild places somewhere out there... parks, reserves, beaches, and for some people, the areas just outside their back door. The wonder of nature, of plants and animals in their own elements, can often free our spirits from the pressures of modern daily life. But for many of us it has become increasingly difficult to physically escape to these wild places.

The 1990 Census found that eight American cities now have populations of more than 1,000,000, and that 77 percent of Americans live in areas considered to be metropolitan. In the past 40 years, the number of cities with populations over 100,000 has almost doubled. What effect does our urban lifestyle have on our view of nature? How do children raised in an urban environment relate to nature? How can we

expect wise decision-making on complex issues about a natural world with which we or our children may have little experience?

Educators are beginning to learn what encourages children to grow into responsible environmental stewards:

- positive experiences in informal outdoor settings repeated over long periods of time;
- a general knowledge of ecology;
- a personal investment in and ownership of an environmental issue;
- in-depth knowledge of an issue and its ecological and human implications;
- knowledge of the skills needed to deal with ecological issues and a feeling of empowerment to help resolve situations; and
- positive reinforcement over time for actions taken.

Today's children are tomorrow's decision makers. We must give young people a combination of intellectual knowledge and environmental sensitivity, both in formal school settings and informal outdoor settings. With proper guidance and reliable information, students can be powerful advocates for the environment.

At the Wildflower Center, we have the opportunity and responsibility to be a leader in environmental education for children and adults. We are working to develop model education programs that can

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

Wildflower

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WILDFLOWER CENTER NEWS

Patricia Alholm, Public Relations and Marketing Manager for the Wildflower Center, attended the **National Tour Association Exchange** and the **American Bus Association Marketplace** in November and December. With active representation at these tourism trade shows, the Center hopes to see an increase in motorcoach tours by the time the new facility opens.

Member **Eunice Myall** was the lucky winner of a \$500 travel certificate at **WILD IDEAS**: a holiday shopping event held at the Center December 3, 4, & 5. Congratulations Eunice, and many thanks to **Above and Beyond Travel** for providing the door prize.

Education Director Julie Barrett Heffington represented the Wildflower Center at the **Association of Science-Technology Centers Proposal Development Workshop** in Washington, D.C. The workshop, focusing on obtaining grants from major endowment funds,

was attended by more than 60 representatives from botanical gardens, museums, aquariums, zoological gardens, and science centers.

That gorgeous **sunflower umbrella** you saw in the last NWRC gift catalog is flying out the door in droves! Thanks to the umbrella being featured in the December issue of *Country Living*, and the February issues of *Better Homes & Gardens Product Guide* and *Woman's World*, the mail order department has sold out of them twice.

The Wildflower Center teamed up in early December with the Barton Springs/Edwards Aquifer Conservation District, the Texas Cave Management Association, Austin Nature Preserves, and the Austin Parks and Recreation Department to clean out two caves on the site of the new Center. The debris and litter from **Wildflower Cave** filled up approximately two full-sized truck beds. Selected artifacts will be used in an education exhibit in the Center's gallery.

Unlocking botanical keys to learn the secrets of plants

Hiking in the Mojave, your eye falls on a gem of the desert, a yellow flower amid the sand and rocks. You open your brand-new field guide... and find line after line of dry text, written in some foreign language. What's happening?

You've just encountered a botanical key, a scientific way of identifying plants. It looks odd to the untrained eye, but a key is really not hard to use. It's simply a series of choices based on contrasting plant characteristics. By making choices between these characteristics, you narrow the number of plants to be considered. Eventually, if you make the right choices, you will find the name of your plant.

For example, the first couplet in the *Peterson Field Guide to Pacific States Wildflowers* offers a choice between 1(a) "flowers without petals" and 1(b) "flowers with petals."

Any flower will fall into one of those two categories. If you choose 1(a), the key tells you to skip to couplet 5, where flowers without petals are further divided into 5(a) "plants of marshes or ponds" and 5(b) "plants of dry land or parasitic." Answer 1(b) would take you to couplet 2 and a different set of choices.

Think of a key as a road that forks, then forks again. By the process of elimination, a key will lead you to the unique characteristic that defines your plant. Let's try keying out that desert flower you found.

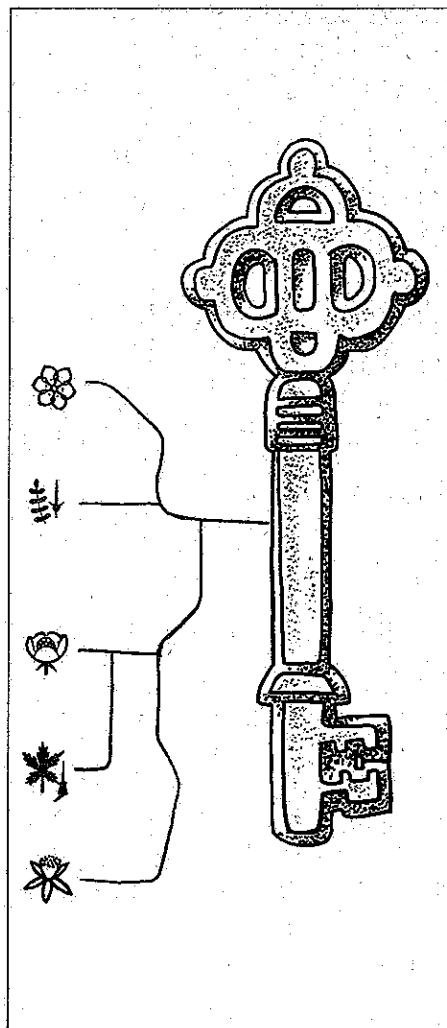
Always start with the first couplet. This flower does have petals, so you choose 1(b) and proceed to couplet 2. The choice is 2(a) "petals 3 or 6" or 2(b) "petals 4 or 5 or numerous." Your flower has four petals, so you choose 2(b). This leads you to couplet 4. 4(a) indicates exactly four petals and tells you to skip to couplet 26. There, you see 26(a) "ovary with superior position" or 26(b) "ovary with inferior position." You look closely at your flower and see a long, narrow bulge protruding below the petals. You pick 26(b), which takes you to couplet 35. This couplet offers you the choice between 35(a) "ovary with 2 rounded spiny lobes" or 35(b)

"ovary elongated or of one round lobe."

The ovary of your flower doesn't have two rounded spiny lobes, so 35(a) isn't the right choice. You choose 35(b) and go on to 36, the last fork in your road. Choice 36(a), "no central tiny flowers, conspicuous elongated inferior ovary" identifies your flower as a member of the Onagraceae, the Evening Primrose Family.

At this point, the guide becomes a color key. You turn to pages 150-152, where yellow members of this family are listed. The illustration tells you that your flower is *Oenothera primiveris*, the yellow desert evening primrose. Congratulations! You have correctly keyed out your plant. Now keep going!

Dyanne Cortez, who has a bachelor's in horticulture, is a volunteer with the National Wildflower Research Center.



But what's a "perianth?"

Many keys use unfamiliar technical language. But most keys and field guides have glossaries, and it's easy to learn the most common terms. Let's start with a review of the basic flower parts. Remember — not all flowers will have all four parts!

Petals — The showy, colorful parts of the typical flower. Known collectively as the **corolla**.

Sepals — The outermost parts, which enclose the flower bud. They're usually green, but not always. Known collectively as the **calyx**.

Perianth — All the sepals and petals together.

Pistil(s) — The female part at the center of the flower. The bottom of the pistil is the ovary, which will bear the seeds.

Stamens — Pollen-bearing structures, usually consisting of an anther and a stalk-like filament.

Superior ovary — The ovary is located *above* the sepals, petals, and stamens.

Inferior ovary — The ovary is located *below* the sepals, petals, and stamens.

Here are some other terms you may find in keys:

Entire margin — Describes a leaf with smooth edges, no "teeth" or lobes.

Glabrous — Smooth.

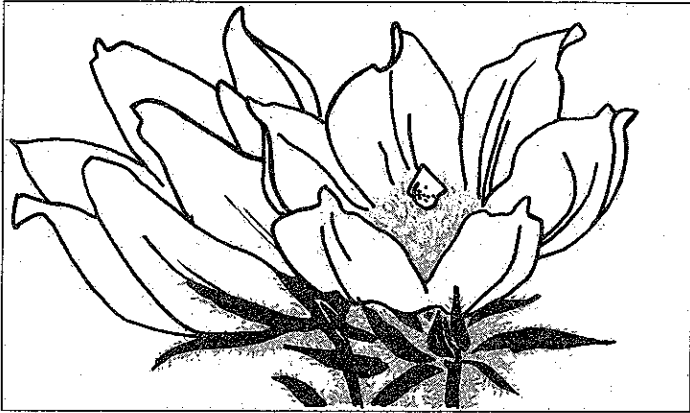
Hirsute — Fuzzy or "hairy."

Alternate leaves — Leaves attached at different points along the stem.

Opposite leaves — Two leaves attached at the same point on the stem, pointing in opposite directions.

Wildflower

NOTEBOOK



Botanical Name: *Anemone patens*
Pronunciation: Ah neh MOH nee pahnt enz
Common Name: Pasque flower, windflower, prairie smoke, prairie crocus
Family Name: Ranunculaceae
Range: Wisconsin to Alaska and southward to Texas and New Mexico
Habitat: Prairies and other open areas. Often in rocky soil in northern latitudes
Bloom Period: April to June

One of the first flowers to bloom, legend claims the *Anemone patens* can only be opened by the spring winds. The botanical name, *Anemone*, refers to the Greek god of the winds, Anemos. The common name, pasque flower, refers to the time of year it blooms, the Easter (Pascal) season.

Easily identified when found in the wild, *Anemone patens* is a low plant that grows in clumps. Grayish

green stems, covered with many silky, whitish hairs, terminate with a flower consisting of five to seven pale purple to lavender sepals. Within the flower lies a delicate ring of yellow stamens that encircle gray pistils. Below the bloom is a whorl of protective leaves divided into many narrow lobes.

As the seeds mature, the grayish pistils and long styles become beautiful feathery plumes attached to each fruit. These plumes last until June or July and give the appearance of smoke rising in the breeze.

Various species of *Anemone* grow throughout the world and the folklore regarding the wildflower is as diverse as the locations where it is found. Romans would say prayers while picking the spring flowers, believing this would keep disease away. Chinese placed this plant on

the graves of loved ones, while other Near Eastern cultures believed sickness came from the plant.

The state flower of South Dakota, *Anemone patens* has a history of medicinal uses among many Indian tribes. Blackfeet women boiled the plant, using the tea to help ease the pain of childbirth. Other tribes believed the roots had great healing powers and applied crushed leaves to injuries. It is now known the plant contains anemonin, a poison that affects the nervous system.

Pasque flower can be grown from seeds, which benefit from a two- to three-week period of stratification. Plant seeds in flats and leave in a nursery condition for the first year. Transplant in late fall or early spring to a sunny area with well-drained soil.



Botanical Name: *Agastache foeniculum*
Pronunciation: Ag-ah-STACK-ee fen-ICK-you-lum
Common Name: Lavender hyssop, anise hyssop, blue giant hyssop
Family Name: Lamaceae

(Mint Family)
Range: Ontario south to Illinois and Iowa, west to Colorado, South Dakota, and Washington
Habitat: Dry ground in thickets, prairies, and open slopes of upland woods

Bloom Period: June to September

The lavender hyssop possesses the square stem and opposite leaves characteristic of members of the mint family. The egg-shaped leaves are downy white underneath and smell like anise when crushed. Blue-violet flowers are arranged in whorls around the upper stem and have two pairs of protruding stamens, one curving upward and the other downward, crossing each other.

The genus name, *Agastache*, describes the flower clusters and is derived from two Greek words. *agan*,

meaning "much," and *stachys*, meaning "ear of grain."

Teas brewed using fresh or dried leaves have a delicate anise flavor. Early Native Americans used these teas to treat fevers, coughs, and colds, induce sweating, and strengthen weak hearts. The leaves also were used as flavoring in cooking.

Preferring sites with well-drained, rich loamy soil and full sun, lavender hyssop is easily propagated by seed planted in the spring or the fall, and from cuttings or root division.

FROM THE FIELD

Inland Northwest Community Trees Conference, March 9-10, *Kennewick, WA*. Contact: Phillip Rodbell, Dept. of Natural Resources, P.O. Box 47046, Olympia, WA 98504.

Rhode Island Wild Plant Society Annual Meeting, March 12. Contact: RIWPS, 12 Sanderson Rd., Smithfield, RI 02917, (401) 949-0195.

High Altitude Revegetation Workshop, March 16-17, *Ft. Collins, CO*. Contact: Gary L. Thor, (303) 491-7296.

Wildlands Conference, March 22-24, *Houston*. Sponsored by the Society for Ecological Restoration and the Wildlife Habitat Enhancement Council. Contact: Bronwyn Weaver, 1994 Conference, 736 Company Farm Rd., Aspers, PA 17304, (717) 528-7062.

Fourth Symposium on the California Islands, March 23-25, *Santa Barbara, CA*. Contact: Santa Barbara Museum of Natural History, 2559 Puesta del Sol, Santa Barbara, CA 93105, (805) 682-4711 ext. 301.

Southeastern Wildflowers — To Know and Grow, March 24, *Pine Mountain, GA*. Contact: Callaway Gardens, P.O. Box 2000, Pine Mountain, GA 31822-2000, (800) 282-8181.

The Healing Dimensions of People-Plant Relationships: A Research Symposium, March 24-28, *Davis, CA*. Contact: Patricia Lindsey, Environmental Horticulture Dept, Univ. of CA, Davis, CA 95616, (916) 752-4385.

Biological Diversity: Exploring the Complexities, March 25-27, *Tucson*. Conference sponsored by the Univ. of AZ and the University of Tulsa's National Energy Law and Policy Institute. Contact: Hans Bohnert, Biological Sciences West 516, Univ. of AZ, Tucson, AZ 85721, (602) 621-7961.

Wildflower Walkabouts at Earthside, March 26-27, *Pasadena, CA*. Contact: Elna Bakker, Earthside Nature Center, 3160 East Del Mar Blvd., Pasadena, CA 91107, (213) 222-9749.

Ecology and Management of Oregon Coast Range Forests, March 28-30. *Gleneden Beach, OR*. Contact: Conference Assistant, Oregon State University, College of Forestry, Peavy Hall 202, Corvallis, OR 97331.

DeWitt County Lanes & Byways, Month of April, *Cuero, TX*. Wildflower trails. Contact: DeWitt County Wildflower Association, P.O. Box 510, Cuero, TX 77954, (512) 275-2112.

Highland Lakes Bird and Wildflower Society's Annual Wildflower Show, April 2-3, *Lower Colorado River Authority Lodge Bldg., Buchanan Dam, TX*. 9 am to 5 pm both days.

Saturday Wildflower Walks, April 2 - May 14, *Sun Valley, CA*. Saturdays at 9:00 am. Contact: Dennis Bryson, The Theodore Payne Foundation for Wildflowers and Native Plants, Inc., 10459 Tuxford Street, Sun Valley, CA 91352, (818) 768-1802.

Fifth Global Warming Science and Policy International Conference and Expo, April 4-7, *San Francisco, CA*. Contact: Sinyan Shen, Global Warming International Center, P.O. Box 5275, Woodridge, IL 60517, (708) 910-1551.

Media and the Environment, April 7-9, *Reno, NV*. Contact: William Griswold, School of Journalism and Mass Communication, University of Georgia, Athens, GA 30602, (706) 542-5051.

Poppy Day, April 9, *Sun Valley, CA*. Contact: Dennis Bryson, The Theodore Payne Foundation for Wildflowers and Native Plants, Inc., 10459 Tuxford St., Sun Valley, CA 91352, (818) 768-1802.

Spring Wildflower Festival, April 9-10, *Chattanooga, TN*. Contact: Reflection Riding and Chattanooga Nature Center, 400 Garden Rd., Chattanooga, TN 37419, (615) 821-1160.

From Private Estate to Public Garden: Planning the Transition, April 15, *Summit, NJ*. Contact: Reeves-Reed Arboretum, 165 Hobart Ave., Summit, NJ 07901, (908) 273-8787.

Put on the miles with the Wildflower Center



We know you won't want to miss this special trip with the Wildflower Center's EcoTours program: the Texas Big Bend. Mark your calendars and pack your bags for adventure!

Join us as we travel to the magnificent Texas Big Bend April 22 to 27. We'll tour the last great wilderness area of the Lone Star State, enjoy the company of noted desert naturalist Dr. Barton Warnock, and raft the mighty Rio Grande. Four price, per person, double occupancy, is \$1,279.

For more information on registration, please contact the Travel Office at (512) 929-3600.

SAVE YOUR RECEIPT!

Starting in 1994, the IRS will no longer accept canceled checks as proof of charitable contributions. Any gift of \$250 or more must be documented by a written receipt from the receiving charity.

The \$250 trigger point applies to separate gifts, not to the total amount given to an organization during the year. For example, if you make a gift of \$1,000 in five installments of \$200, a receipt is not necessary.

The National Wildflower Research Center issues receipts for all charitable gifts to the Center.



Education Report

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be duplicated across the country, and yet customized for each biogeographical region. Our goals are to:

- provide children and adults with sound ecological information about the interdependence of all species, including humans, with native flora,
- help children and adults understand the importance of their region's native flora,
- teach children and adults the skills they need to design, grow, and manage native plant gardens in their own yards, at their schools, and in their communities — and empower them to do so,
- offer children and adults repeated opportunities to learn about native plants in informal and fun settings; and
- create an atmosphere for learning

that includes not only students, but the community as a whole

In 1995, we will have our wonderful new facility in which to expand and fully explore a wide range of educational programs. Through our Exhibit Gallery, Children's Discovery Room, and Demonstration Gardens we will provide an integrated learning experience for children and adults

The Center's Education Department will continually evaluate our environmental education efforts. We will try new approaches, address different learning styles and different cultural audiences, evaluate the effectiveness of our work, make changes, and then repeat this entire process as needed

A culture is judged by what it

considers worth saving. Though it is obvious Americans value our distant wild places, we must also value the land we see around us every day. At the National Wildflower Research Center, we are working to bring this environmental stewardship ethic closer to home. Each of us must help bring the wildness back to our urban areas by planting native plants and attracting the associated wildlife. Our city patios, vacant lots, school grounds, and public and private spaces can, in turn, help fulfill our human need for nature.

Through our national outreach efforts and our on-site educational programs, the Wildflower Center is working to ensure the continued health of our environment, and ultimately our planet.

Celebrate Spring: Join the National Wildflower Research Center!

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

- \$25 Supporting Member.** All benefits listed above.
- \$50 Sustaining Member.** All the above plus a set of specially commissioned wildflower note cards.
- \$100 Key Member.** All the above plus wildflower tote bag and invitations to special events.
- \$250 Center Sponsor.** All the above plus full-color wildflower address book.
- \$500 Trust Member and \$1,000 Benefactor.** All the above plus special privileges.

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

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Wildflowers Work!

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