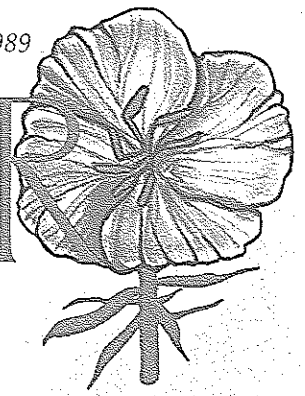


WILDFLOWER



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

Restoration: Trying to Turn Back the Clock

The cool water of the cave pool felt delicious after a hot morning of fieldwork. Restorationists were refreshed by the cool-down and the discovery of over three dozen kinds of grasses in the abandoned farm field above the limestone cave. It was the beginning of hands-on restoration of a small piece of America's abandoned cropland.

It must have been paradise to Native Americans — the cool cave with its deep blue pool in the midst of the dry Texas Hill Country. Now this natural area, Hamilton Pool park near Austin, harbors habitats for rare species such as *Anemone edwardsiana* (two-flowered anemone) and *Epipactis gigantea* (chatterbox orchid).

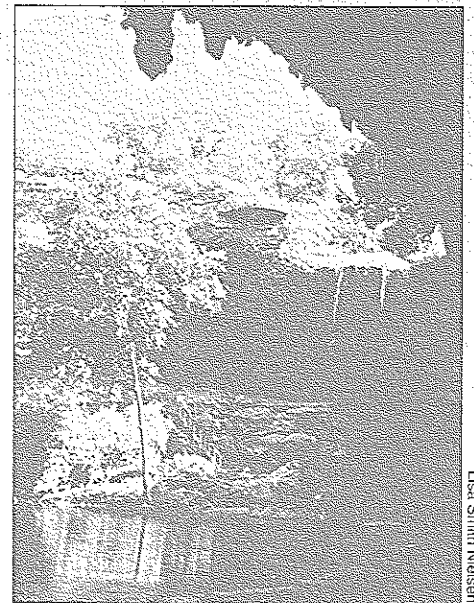
Last winter, Wildflower Center staff members Marcia Hermann and Katy McKinney, and the superintendent of Hamilton Pool park, Terri Siegenthaler, developed a plan to restore the abandoned crop field at the site to its pre-settlement state — a mixed-grass

prairie with multiple plant and wildlife species. Beginning in the mid-1800s, this area, like thousands of acres across the nation, was intensively farmed and grazed.

There are several reasons for the project. Park visitors will be able to see what the land looked like before it was plowed and grazed. Explaining the restoration process to visitors will illustrate how intact native plant communities are a resource that is not easily (if ever) replaced. It will also emphasize that development always incurs a loss of habitat, and that both gains and losses coming from development must be considered. Aside from environmental education, the goal is a high-quality native grassland that can serve as a seed bank for restoration of other disturbed areas.

A survey of the plants already present on the land yielded baseline information, which restorationists are using to monitor their progress. In this case, many native, early

successional species were already present on the site — the land had
(continued on page 6)



Lisa Smith Nielsen

Paradise Restored? Restoration helps natural revegetation occur in habitats like this cave pool and adjacent grasslands, which once harbored many species. But intact ecosystems are a resource not easily replaced.

WILDFLOWER OUTLOOK

The Society for Ecological Restoration (SER) is arguing against California's Professional Foresters Law, newly clarified by the Professional Foresters Registration office of the state Board of Forestry. The clarification of the 1972 law would permit only licensed foresters to restore trees and woody plants to California wildlands, but would not apply to wetlands or grasses, says the registration office. SER says the new clarification would obstruct restoration research. The forestry board says it would afford accountability.

Arizona has revised its native plant law to encourage salvaging natives and require state agencies to report planned destruction of them, notes Arizona's *Plant Press*.

Earth Day 1990 — Sunday, April 22 — launches the environmental decade. Get involved now. Write Earth Day 1990, P.O. Box AA, Stanford University, CA 94305.

For the New England Wild Flower Society's 1990 Seed List, send \$1, a self-addressed #10 envelope, and 45 cents postage to: Seeds, New England Wild Flower Society, Garden in the Woods, Hemenway Rd., Framingham, MA 01701.

Zestful Fall Fest

It's time for Fall Wildflower Days, the annual fall festival at the Wildflower Center. Everyone is invited to a lively two days of special events and holiday shopping on Saturday, November 11, from 10 a.m. to 4 p.m., and Sunday, November 12, from 1-4 p.m. Lady Bird Johnson, the Center's founder, will sign copies of *Wildflowers Across America*, which she coauthored, on Saturday, November 11, from 10:30 a.m. to noon. The book will be available for purchase.

Arts and crafts and children's entertainment are also planned. The gift shop is stocked with wildflower items, and Center members will receive a 10 percent discount.

CATALOG INSIDE!

Seven Years of Growth & Into the '90s!

As we conclude our seventh year since being founded by Lady Bird Johnson, it is again time to "take stock" of what we are and how we are doing. This reassessment process is the topic of an annual staff retreat, an event we all value and find essential to planning our programs. Part of the process is to identify what we have accomplished and who our audience is. As a nonprofit organization, providing a needed public service is essential to our continued success.

As an organization dedicated to both the continued conservation of our native flora and to the reestablishment of regional, indigenous native plants in planned landscapes, the Wildflower Center is unique. The broad spectrum of backgrounds and interests represented by our collective audiences provides guidance for our programs. Homeowners, business people, public land managers, academicians, landscape architects, nursery growers, seed producers, environmentalists, and a long list of agencies and cause-related nonprofit organizations all have a need for reliable information. The successful propagation, establishment, and management of native wildflowers and community plantings of natives requires good technical information as well as an understanding of the long-term benefits that can be achieved. The Wildflower Center designs research and public information programs to address both of those needs. Because of our emphasis on research, we feel our educational efforts are more soundly based than if we provided only the ideas of others.

The combination of knowing what our goals are and who our audience is has resulted in exciting growth and future plans. Our national membership has grown rapidly to over 17,000, enabling us to increase from four to six the number of newsletters we mail each year. We have also added two issues of

a full-color journal to annual membership benefits. The journal has received positive reviews and comments from its readership, which has proven to include all of the wide spectrum of interests to which we direct its contents.

Our research has continued to stress application, and several projects have produced new information that advances our ability to successfully establish wildflower species with ranges that span the nation. Future experiments on root inoculants for specific bacterial associations (*Rhizobium* on members of the *Lupinus* genus) and mycorrhizal fungi associations are being planned for new regions of the country. Other studies — on germination and propagation — are designed to increase the number of wildflower species available commercially.

Finally, we intend to continue publishing the information we develop and collect from others. Our first effort, the 337-page *Wildflower Handbook*, has already reached thousands across the country, and plans are being made for a second printing. This and other books are prominent in our future plans.

Thanks to you, our members, we have made rapid strides toward accomplishing our early goals and objectives. As we plan the coming years and set goals for the next phase of national research and education, your continued involvement and support will be essential. This is a cause for all of us to actively participate in and support — philosophically, financially, and in practice.



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

WILDFLOWER CENTER NEWS

It's an exhilarating, diverse landscape with a stony heartland, rain forests, and isolated coastal regions. It's the destination of the National Wildflower Research Center's Wildflower and Naturalist Tour of Australia, January 27 through February 10, 1990. For a tour brochure, call SelecTours at 1-800-759-7727.

“Grand photography” and “articulate text” won *Wildflowers Across America*, by Lady Bird Johnson and Carlton B. Lees, a trilogy of 1989 awards from the Garden Writers Association of America, including the association's gold seal award. The book, and the *American Wildflowers* calendar issued in conjunction, are published by Abbeville Press.

The Lower Rio Grande Valley was the site and focus of the annual Texas Organization for Endangered Species meeting. “We heard from the U.S. Fish and Wildlife Service, National Audubon Society, and other national and local groups about saving and revegetating habitats there,” says Beth Anderson of the Wildflower Center, who attended along with other botany staff members Elinor Crank and Marcia Hermann. “The area is a main stopover for migrating birds. It was impressive that so many organizations from the environmental, farming, and business communities are working together. In areas revegetated only a few years, endangered subtropical species, such as ocelots, have been sighted again.”



Lisa Smith Nielsen

Rewards of Rhizobium: Wildflower Center botanist Elinor Crank, right, whose research has shown that applying the bacteria *Rhizobium* to bluebonnet seeds results in healthier plants, explains to a visitor how it works.

Wildflower

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Beth Anderson, Jim Hankins

Wildflower, v. 6, no. 6 (ISSN 0898-8803). Published bimonthly. A portion of \$25 membership dues pays for your annual subscription to *Wildflower*, National Wildflower Research Center, 2600 FM 973 North, Austin, TX 78725-4201. Phone: (512) 929-3600. Material may be reprinted with the permission of the editor. Second class postage paid at Austin, Texas.

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

in search of green gold

Before the last leaves fall from my trees and shrubs, I give myself a break from more mundane gardening chores and treat myself to a treasure hunt. I enjoy attracting wildlife to my landscape but can't always find room in our budget for the diversity of excellent trees and shrubs available at local garden centers. You'll find a treasure hunt to be good medicine for your spirit, your landscape, and local wildlife.

For years, birds and mammals have visited your yard, night and day. Left behind in their droppings is a wealth of seeds. Last winter primed many of those seeds for spring growth. With spring's warmth and rains, seedlings grew and now dot your planting beds. You can dismiss them as weeds, or you can treasure and transplant the ones that show promise.

I pot two to three dozen shrub and tree seedlings annually as a result of my treasure hunts. Eventually, two or three will find their way into my landscape. I'll use others to revegetate an adjacent common ground. The remainder will come in handy as house gifts or as barter with other wildlife gardeners.

Autumn is the ideal time for transplanting or planting most trees and shrubs. As its leaves drop, the plant seems to go dormant. Below the soil, however, its root system is rapidly growing, anchoring the stems against winter winds and priming the plant for spring's burst of flower and leaf.

Keep a healthy supply of plastic pots on hand. Fill a two-quart pot with a good soil mix. Plant the seedling, water it well, and set it in a weather-exposed yet sheltered spot. Next fall, these plants will have doubled or tripled in size. You can either repot them or move them into your landscape.

With limited time and space to care for these waifs, I've learned to be selective in my choice of keepers. Native species top my list. They can be difficult to find in nurseries. Unless I am part of an officially recognized salvage operation, I never dig them from the wild.

Seedlings from your yard grow under good garden conditions. By transplanting them early in their lives, they will make much better landscape plants than even properly salvaged larger specimens or root-bound stock from a nursery.

The green gold that I find will differ from your treasure. Judicious bartering can bring you the diversity you want. One year, hackberry, an excellent food tree for a number of butterfly caterpillars and birds, was my best find. Some Eastern red cedars and wild black cherries were yanked as weeds, but I transplanted the best of each.

Foxes have introduced persimmon to my yard. I'll trade these seedlings for pawpaw, whose leaves mean life to the beautiful zebra swallowtail butterfly and whose fruits will provide tasty, late summer treats to the countless small mammals that visit my yard.

Craig Tufts
Director of Urban Wildlife Programs
National Wildlife Federation

"In Search of Green Gold" is reprinted, with permission of the author, from *The Backyard Naturalist* by Craig Tufts, published by the National Wildlife Federation, ©1988.

Do wildflowers really attract bears?

Clearinghouse Q & A addresses some rumors about wildflowers. If you have a question about wildflowers, write to the Wildflower Center Clearinghouse at the address on page 6. Free wildflower information is a benefit of membership in the Center. Nonmembers need to enclose \$1 and a self-addressed label or 3-by-5-inch card.

Q. I've heard that wildflower plantings attract ticks. With the increase of Lyme disease, which ticks spread, should you plant petunias instead?

A. No, but you have to understand the life cycle of a tick for this to make sense. Adult female ticks with eggs drop off of their host animals after they have received adequate nutrition. Tick eggs are laid on the ground. Under the right conditions — such as a warm, humid day — the eggs hatch and the juvenile ticks climb the nearest vegetation to catch on to a host of their own. They are not attracted to herbaceous wildflowers over other types of vegetation.

Q. Do wildflower plantings encourage tick-carrying wildlife?

A. Most plantings have blooms or vegetation during one or two seasons during the year, and it is possible that at that time a planting could serve as a temporary home for small animals such as rabbits or mice, which are hosts for ticks. Probably what determines the presence of wildlife, however, is what is adjacent to the planting. Does it border a wooded area? More animals will be found in plantings closer to permanent wildlife habitats.

Q. If wildflowers attract bees, and bees make honey, and bears like honey, do wildflowers attract bears?

A. Why single out wildflowers? Using that logic, any honeybee-pollinated plant used in honey production — including cotton, trees, and shrubs — would "encourage" bears!

A Practical Guide to Wildflower Gifts

It's been said that the excellence of a gift lies in its appropriateness. These items may be just what wildflower gardeners, photographers, and other appreciators of native flora are hoping to receive during the holidays! Where prices are noted, items are available from the Wildflower Center.

Leaf and Flower Press, \$11 (paper refill, \$4.60). Press and mount spring wildflowers or autumn leaves with this seven-inch-square press.

Photographing Wildflowers: Techniques for the Advanced Amateur and Professional, \$9.95. Easy-to-understand diagrams and explanations help improve photography skills.

Wildflower Center Pencils, 50 cents each, are the obvious stocking stuffers!

Kaleidoscope, \$3.95. Point it at wildflowers and they become fascinating designs that intrigue children.

Hand Lens. A lens that magnifies flower and grass parts at least ten times and has a chain so it can hang around the neck is a good choice. (Not available from the Wildflower Center.)

Pruning Shears. Look for sharpness and a comfortable hand-fit. (Not available from the Wildflower Center.)

To order, add price of product (members receive 10% discount off product price) plus \$3 for shipping up to \$20 worth of products, or \$4 for shipping \$20.01-\$40 worth. (Texas residents also add 6% sales tax to product price). Make out check for total to NWRC. Send with your request to: Products, NWRC, 2600 FM 973 North, Austin, TX 78725. Or phone (512) 929-3600, from 9 a.m. to 4 p.m. (CST) weekdays.

From the Field

Midwest Fish and Wildlife Conference December 3-6, Springfield, Illinois. Conference is titled "Development of Ecological Theory and its Application in Fish and Wildlife Management — a Tribute to Stephen A. Forbes." **Contact:** Fifty-first Midwest Fish and Wildlife Conference, Illinois Department of Conservation, Division of Fisheries, 600 North Grand Ave. W., Springfield, IL 62706; (217) 785-8287.

Texas Arbor Day Weekend January 20-21, Houston Arboretum and Nature Center, Houston, Texas. Tours, lectures, exhibits, and demonstrations for the whole family are planned. Free, no registration required. **Contact:** (713) 681-8433.

Salt River Wilderness Photo/Naturalist Seminar March 26-30, Salt River Wilderness, Arizona. This instructional expedition is geared toward photography but includes white water rafting. **Contact:** (915) 371-2489.

Seed Conditioning of Western Wildland Species March 15-16, Fort Collins, Colorado. A two-day workshop and forum. **Contact:** Michael Bricker, (303) 484-0402; or Annette Logan, (303) 651-6417.

Coming Up!

Watch Wildflower newsletter and other publications for news about the following events . . . Native Plant Festival in Houston in April . . . Rhode Island Wild Plant Society's Smokies Wildflower Pilgrimage, April 26-28.

It's a Taste of the Wild!

Here's a charming keepsake bouquet, put together from a varied garden of enticing recipes, wildflowers, and Texas wines. Pick it as a thoughtful gift with a special Texas accent.

It's the bright, new cookbook, *Wild About Texas*, compiled by Cypress Woodlands Junior Forum of Houston. The cookbook is chock full of recipes tested twice or more and certain to tempt the most discerning gourmets. Rosario Baxter's sketches of Texas wildflowers lace the pages, and there's a refreshing sip of Texas wine lore, with tips on pairing wines and food from wine expert Sarah Jane English. What's more, the Wildflower Center has contributed wildflower planting tips and folklore.

Lady Bird Johnson's love of wildflowers — her dedication to their preservation, her initiative in establishing the National Wildflower Research Center — inspired the special flavor of this cookbook. Part of the proceeds from its sale benefit the Wildflower Center, and remaining proceeds will be used in Cypress Woodlands Junior Forum community projects.

To order *Wild About Texas*, make a check out to "NWRC" for \$17.95 (Texas residents add 6% sales tax) plus \$3 for shipping. If you are a member, be sure to take your 10% discount off book price. Send to: Products, NWRC, 2600 FM 973 North, Austin, Texas 78725-4201. Or phone (512) 929-3600, 9 a.m. to 4 p.m. (CST) weekdays.

Never mind the partridge...we're wishing...

We're wishing...wishing...that Santa's elves, along with our members, have stashed away some things that are just right for the National Wildflower Research Center. Won't you check in your

workshop? You may have that special wish list item. If you do, please take a minute to call the Development Office at (512) 929-3600. We'll reciprocate with gratitude and holiday cheer!

Wildflower wish list

- FAX machine
- stand for a large table dictionary
- Webster's *Thesaurus*
- thesaurus of quotations
- *Vascular Plants of Texas* (Correll and Johnston)
- display cases for gift store
- T-stands for gift store
- small glass display cabinet for valuable gift items
- thirty-cup coffee percolator
- attractive serving trays
- set of kitchen cutting knives
- drinking glasses (two dozen)
- sturdy wheelbarrow
- five-gallon buckets with lids
- water hoses with sprinklers
- bolt of cheesecloth

Berries Brighten Winter Landscapes

Bare branches silhouetted against a winter sky appear stark and still as dormant deciduous trees defy the cold. But a point of color in many a chilly scene is the bunch of bright berries that hangs on a tree or shrub, dimming the hues of other vegetation. Those bright spots are precisely what attracts wildlife to winter vegetation.

Ironically, the scarcity of food for wildlife in winter ensures the survival of plant species bearing attractive, edible berries. Spying the berries, birds and other creatures consume them and then disperse the seeds.

One of the most common berry-producing plants is the holly. Exotic hollies are used in landscaping, but native holly species grow in the eastern and southern United States. Holly is in the genus *Ilex*, with over 400 species worldwide.

Growing along the eastern coast from Florida to Massachusetts and west to Missouri, Louisiana, and Texas is the American holly, *Ilex opaca*. This tree usually grows about 50 feet tall, but it can reach 80 to 100 feet along streams

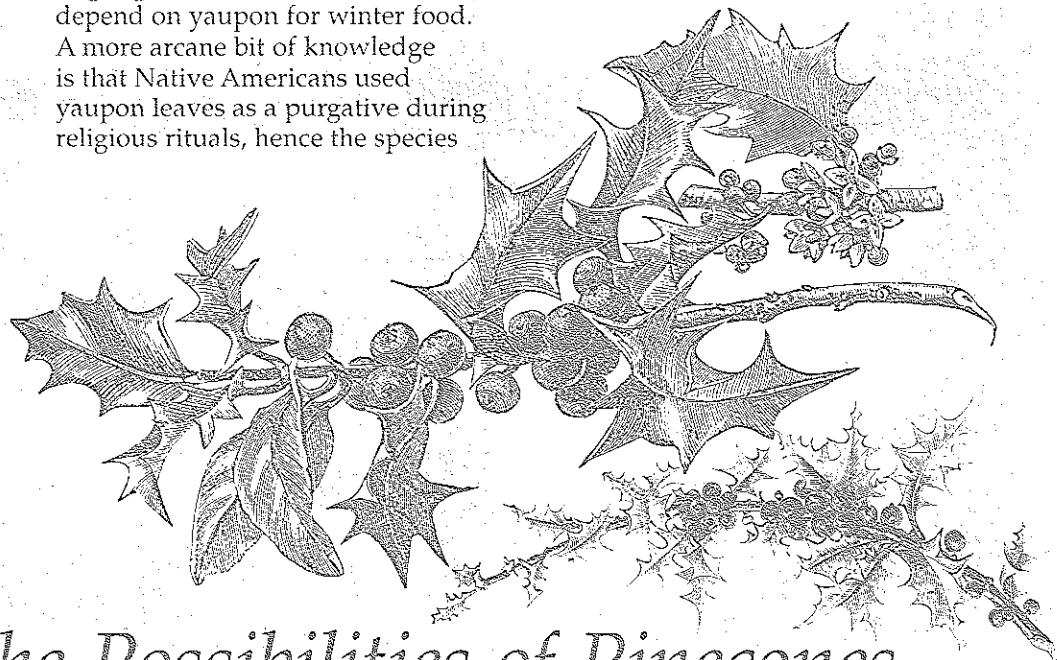
and in bottomlands. American holly leaves are persistent or evergreen in the winter, and have the spiny shape familiar in Christmas decorations. The fruit begins turning red and ripening in late autumn and remains through the winter.

Another berry-bearing tree is the yaupon holly, *Ilex vomitoria*. Yaupons grow from Virginia to the Florida Keys, and west to Texas and southern Arkansas. The trees are evergreen with small, spineless leaves. As you might guess, a number of birds depend on yaupon for winter food. A more arcane bit of knowledge is that Native Americans used yaupon leaves as a purgative during religious rituals, hence the species

name, *vomitoria*. Yaupon is cultivated and commonly used as an ornamental plant.

Winter berries provide a bounty — food for wildlife, the merriment of color, inspiration for holiday traditions — and a vivid illustration of the interdependence of plants and animals.

Elinor Crank
Wildflower Center Research Horticulturist



Considering the Possibilities of Pinecones

As a child, I can remember being fascinated by pinecones. The urge to collect them, as I walked past a grove of pines on my way home from school, was irresistible. My sisters and I spent many an absorbed hour looking for perfect

specimens. On vacations, we gathered whole families of pinecones and gave them names, all beginning with P, of course.

What makes pinecones so intriguing? Is it their many sizes and shapes? Or because each is an intricate piece of art? To me, they were one of nature's finest toys. Their carven, tree-like forms offered endless possibilities.

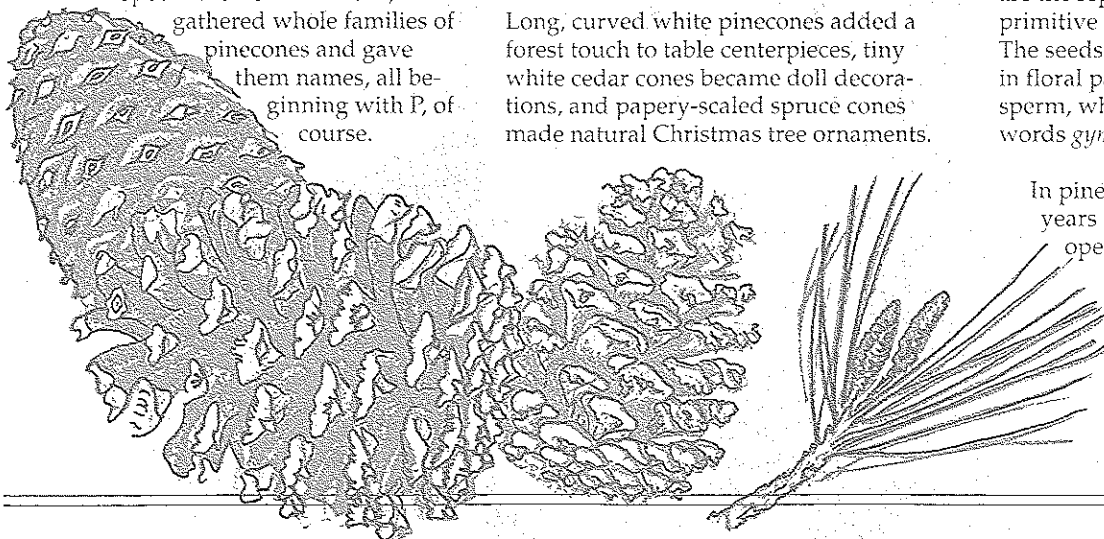
Long, curved white pinecones added a forest touch to table centerpieces, tiny white cedar cones became doll decorations, and papery-scaled spruce cones made natural Christmas tree ornaments.

Usually the cones were already open, bereft of seed. But occasionally I found a one-winged seed still nestled in the protective scales.

Cones — actually specialized stems — are the reproductive structures of primitive seed plants (gymnosperms). The seeds of these plants are not enclosed in floral parts, hence the name gymnosperm, which is derived from the Greek words *gymno* (naked) and *sperma* (seed).

In pinecones, the seed takes about two years to develop. When the pinecone opens up, the seed falls out and is distributed by wind, birds or animals. And people. I still pick up pinecones — but I don't name them anymore.

Beth Anderson
Wildflower Center Resource Botanist



Restoration (continued from page 1)

begun to heal on its own.

Restoration means to facilitate *plant succession*, where one set of species is gradually replaced by another until a stable set remains. (Seeds of the replacement species are either present in the soil or arrive by natural dispersal). The final collection of species is called a *climax community* and is usually the goal.

Burning a site and adding climax species seed can accelerate restoration. The Hamilton Pool crop field was burned to remove the thatch, then seeded with locally collected grass and forb seed. For three to five years, vegetation will be sampled. When a stable plant community persists, restoration will be complete.

Katy Kramer McKinney
Wildflower Center Research Botanist

The Wildflower Handbook has the answers!

When should you plant wildflowers? Where? How?

The National Wildflower Research Center's *Wildflower Handbook*, a new source book, tells you where, when, how — and why — to use wildflowers and other natives in your garden or landscape. The handbook contains handy how-to chapters plus a directory of places to find native plants and wildflower information in all 50 states. A great holiday gift!

To order, complete and mail form below:

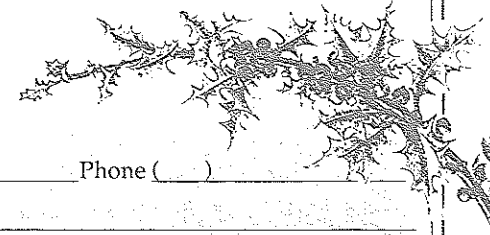
Send _____ *Wildflower Handbook(s)* to:

Name _____ Phone (____) _____

Street address _____

City/State/ZIP _____

Make check out to "NWRC" and mail with form to: NWRC, 2600 FM 973 North, Austin, Texas 78725-4201. Wildflower Handbook is \$9.95 per copy (Texas residents add 6% sales tax) plus \$3 for shipping up to 2 copies. If you are a Wildflower Center member, be sure to take your 10% discount off the price of the handbook!



'Tis the Season: Give a Wildflower Center membership for a year of benefits!

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

- \$25 Supporting Member. All benefits listed above.
- \$50 Sustaining Member. All the above plus a set of specially commissioned wildflower note cards.
- \$100 Key Member. All the above plus wildflower garden apron and invitations to special events.
- \$250 Center Sponsor. All the above plus wildflower poster.
- \$500 Trust Member and \$1000 Benefactor. All the above plus special privileges.

* Thank you! Your contribution is tax deductible to the extent permitted by applicable law. Contact the Development Office for detailed information on tax deductibility.

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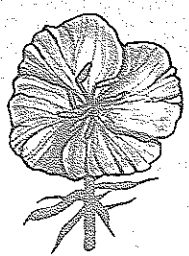
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Volume 6, Number 6, November/December 1989
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