



NATIONAL WILDFLOWER RESEARCH CENTER

wildflower

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The Natural Landscape Movement Comes of Age

*Bret Rappaport
Chicago, Illinois*

As John Stuart Mill observed, "every great movement must experience three stages: ridicule, discussion, and adoption." The Natural Landscape Movement has passed through each phase these past two decades and is now being adopted on a large scale, most recently with the opening of the new National Wildflower Research Center facility.

Back in the 1960s and 1970s, the Natural Landscape Movement was in its infancy; a few scientists reclaimed prairie remnants and some homeowners planted native species (home natural landscapers were routinely harassed by neighbors and prosecuted for growing "weeds"). In 1972, the National Wildlife Federation began its Backyard Wildlife Program. In the late 1970s, The Nature Conservancy started the North Branch Prairie Project in the forest preserves around Chicago, Illinois. In 1979, the Wild Ones Natural Landscapers organization was formed in Milwaukee, Wisconsin, and in 1982, former First Lady Mrs. Lyndon B. Johnson founded the National Wildflower Research Center in Austin, Texas. Ridicule of natural landscaping was heard less frequently.

With the opening of the new Wildflower Center, it is clear that the Natural Landscape Movement is finally being accepted as a landscaping alternative. At its heart, the Movement is about acknowledging that humans are a part of Nature and not apart from Nature; the Wildflower Center is a functioning symbol of what the Movement is all about.

The new Wildflower Center facility is built using the "landscape envelope" technique, which places a premium on preservation of natural features and vegetation. The buildings look as if they were set gently into a natural, undisturbed setting.



From within, the Center's gardens serve two purposes: aesthetic and educational. The interior gardens are part of the overall design, and employ native Central Texas plants in designs ranging from the formal landscaping of the Courtyard to the natural landscaping of the Meditation Garden.

The gardens, however, are more than a testament to the beauty of native landscapes. As one of the largest facilities in North America dedicated exclusively to the preservation and reestablishment of native plants, the gardens are a living classroom, continually demonstrating the savings in time and money through using native plants.

Perceptions change. A decade ago the Natural Landscape Movement was openly ridiculed. With the opening of the Wildflower Center's new facility, the Natural Landscape Movement will be solidified as a landscape design alternative that is not only appropriate, but sensitive to the environment -- qualities that make the National Wildflower Research Center a place to be visited, enjoyed, and revered for generations to come.

INFORMATION,

PLEASE The dissemination of native plant information is a job the Center cannot do alone; alliances with other organizations and groups with similar goals are vital. The joint Wildflower Center/New Directions in the American Landscape conference last month is one example of the

relationships the Center has forged over the years and continues to build.

The first alliances the Center established were with schools needing native plant curricula and authors needing reliable facts about native plants and their uses.

In 1989, through a grant from the American Conservation Association, the Center hosted a national conference of wild-

flower and native plant organizations. In 1991, the Center co-hosted a three-day conference in conjunction with the Desert Botanical Garden in Phoenix, Arizona, focussing on landscaping with Southwestern native plants. Last year, the Center joined the Santa Barbara Botanic Garden to present "Plant Conservation and Landscape Design: An Ecological Approach." *continued on page 5*

Executive Director's Report

How Do Our Gardens Grow?

Since the Grand Opening, more visitors have explored the gardens and grounds of the new Wildflower Center than in all of 1994 at the old site. More importantly, they leave the Center with many positive ideas about using native plants in their home landscapes. Two questions visitors often ask are: what are the best months to visit the Center to see the magnificent Hill Country wildflowers at their peak and when will the gardens at the Center be complete?

Two of the best seasons for color in the Texas Hill Country are late spring (May and June) and the extended fall (mid-September through late-November). Even the summer months of July and August are filled with color at the Wildflower Center due to an extensive drip-irrigation system that not only conserves water, but helps extend spring flowering, supplementing the many

summer species.

Visitors can look forward to the opening of a new garden each month in the Display Garden area. The Hummingbird Garden opened in June, while the Penstemon and Seasonal Color Perennial Gardens will open this month or the next. This fall, the Sensory and Fragrance Garden for the visually impaired, as well as the Endangered Species and Native American Cultural Gardens, will be added. Future gardens include a Rock Garden, Bird Garden, Succulent Garden, and White Garden.

In addition, the three Home Comparison Gardens are nearing completion. Data about water and energy use of each garden will be collected starting this summer and demonstrate, once again, the benefits of using native plants in planned landscapes.

Don't forget, as a Wildflower Center member you and your immediate family can enjoy the gardens of the Wildflower Center free of charge all year long. The Wildflower Center gardens are changing daily, so be sure to visit soon -- and often.



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

The National Wildflower Research Center is a non-profit research and educational organization committed to the preservation and reestablishment of native wildflowers, grasses, shrubs, and trees.

Founder
Lady Bird Johnson

Executive Director
David K. Northington, Ph.D.

Editor
Joshua C. Blumenfeld

Designer
Elaine Brown

Copy Editors
Angela Barton, F. M. Oxley

Contributing Authors
**Kirsten Guillory
Marcia Hermann**

Illustrations
Michael Wall

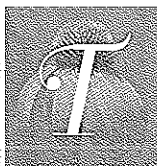
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WILDFLOWER PATRONS: ONE SPECIAL WAY OUR GARDENS GROW!



The Wildflower Center owes a debt of gratitude to some very special friends: our **Wildflower Patrons** and **Wildflower Patrons Council**.

The generous support of these membership groups provides a needed boost to the Center's educational programs and services.

In appreciation, private scenic tours are offered each spring and fall exclusively to our Wildflower Patrons. These half-day tours, hosted by Wildflower Center staff, are capped by a casual but elegant supper at the Wildflower Center or in the home of an Austin native plant enthusiast.

Our **Director's Circle** Wildflower Patrons are also invited to attend an annual native plant symposium and reception, while **First Lady's Circle** Patrons are offered the opportunity for a private consultation with an expert Wildflower Center botanist.

Corporations, businesses, and foundations participating in the **Wildflower Patrons Council** enjoy a variety of benefits tailored to their needs and level of commitment. These benefits include special recognition, membership discounts for their employees, admission passes, sponsorship of collaborative educational programs, and/or complimentary use of the Center's public areas for a special event.

For more information about the Wildflower Patrons and the Wildflower Patrons Council programs, please contact Mae Daniller, Development Director, or Kirsten Guillory, Development Associate, at (512) 292-4200.

WATER, WATER EVERYWHERE & EVERY DROP A DRINK!

J. C. Blumenfeld, Editor/Writer and F. M. Oxley, Resource Botanist

Marshes and swamps and bogs! Oh my! For many people, wetlands are full of mosquitoes, snakes, and other scary inhabitants. A wetland is, after all, the home of the Swamp Thing. But, what exactly is a wetland?

One of the most comprehensive definitions of a wetland was adopted by wetland scientists at the U.S. Fish and Wildlife Service. This definition describes wetlands as "lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water." In addition, wetlands must have one or more of the following three attributes:

- 1) at least periodically, the land must support plants specifically adapted to wet environments (these plants are called *hydrophytes*),
- 2) the substrate is predominantly undrained, *hydric* soil, that is, poorly-drained soils containing 50 percent or more organic matter and are flooded long enough during the growing season to produce *anaerobic* (no oxygen) conditions, and
- 3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season.

TYPES OF WETLANDS

MARSHES

A typical marsh is a mosaic of plants and areas of open water. Shallow marshes are those with six inches of water or less, while deep marshes can have up to three feet of water throughout the year. Some marshes dry out completely at certain times of the year. Three types of vegetation seen in marshes are:

1) **Emergents:** plants with lower stems below water and upper leaves and flowering stalks that stick out of the water. Cattails (*Typha* spp.) and pickerelweed (*Pontederia* spp.) are emergents.

2) **Floaters:** plants floating freely on the surface or rooted in the bottom muck that extend their leaves to the surface on long petioles. The tiniest flowering plant known, water meal (*Wolffia* spp.), is a floater.

3) **Submergents:** plants completely under water. Bladderworts (*Utricularia* spp.) are deep marsh submergents.

Plants found in a particular marsh are related to the water regime, and, in some cases, the mineral content of the water and/or soil. If the marsh is continuously flooded, emergents and submergents play a major role. If the soils are just saturated, few aquatic plants will be present.



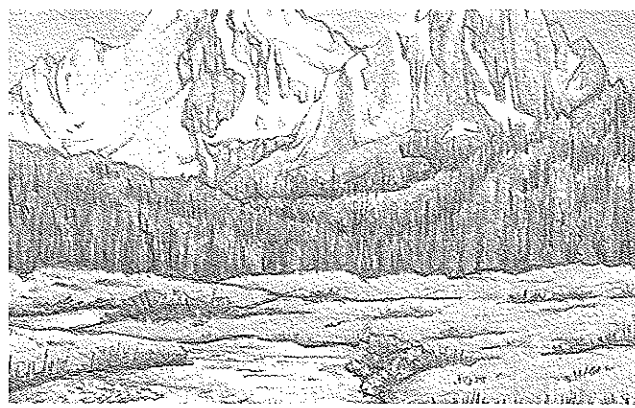
SWAMPS

Swamp soils are saturated during the growing season, and standing water is not unusual at certain times of the year. The highly organic soils form a black muck and cover the underlying mineral soils, which are close to the surface.

Swamps are dominated by woody plants, usually trees and shrubs. Some are forested with hardwood trees such as red maples, gums, and ashes, while other swamps are dominated by evergreens like cedar, fir, and spruce.

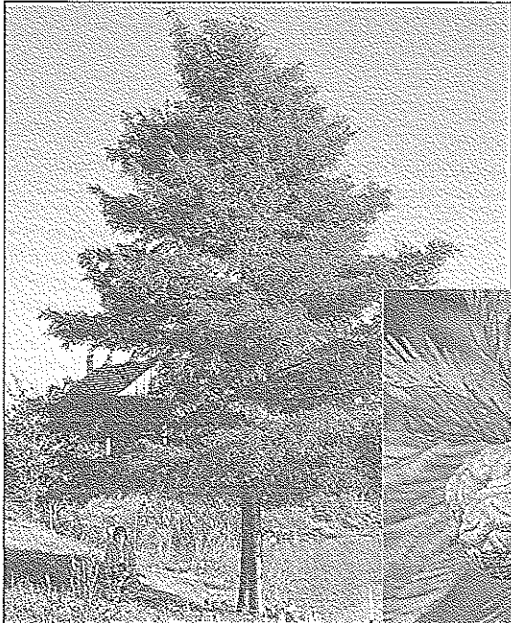
BOGS

Bogs are composed of decayed organic material called *peat*, which forms a floating mat over the water and may be as much as 40 feet thick. Peatlands are formed by the deposition and decomposition of plant material over long periods of time. This accumulation is favored in bogs because the combination of highly acidic water and poorly drained soils create conditions unfavorable to bacteria and other decomposers. Bogs are characterized by evergreen trees and shrubs and are often covered with a blanket of sphagnum moss.



Wildflower

NOTEBOOK



Patsy Chaney, Mary Henderson and Mary Hall



Botanical Name: *Taxodium distichum*
Pronunciation: Tax-O-dee-um
DIS-ti-cum
Common Name: Bald cypress,
swamp cypress
Family Name: Taxodiaceae
(Taxodium Family)
Range: Southeastern United States
Habitat: Swamps and along rivers
and streams
Bloom Period: Flowers form in
autumn, open in spring

assisting in nutrient uptake during inundation of the main roots.

Linear light-green leaves 2 cm (0.75 in) long spread along either side of deciduous shoots that are alternately or spirally arranged on short branchlets. During the autumn leaf drop, the entire branchlet turns a golden brown before dropping in one piece. The male and female cones are small and roughly round. The male cones grow in loose, purple clusters of three or four, while the female cones are held singly.

The undisputed sovereign of the Southern swamp is the bald cypress. Surveying its domain from a vantage point that may be 40 m (130 ft) high or more, this cone-bearing, deciduous monarch may reign for 1,000 to 3,000 years before dying of old age. Buttress roots spread from the base of the tree, providing support in the soft substrate and

Aside from its ecological value as a soil anchor and wildlife habitat, the moderately heavy and hard wood is extremely durable. The dark brown, fine grained boards are often used for construction lumber, siding, caskets, and shingles.

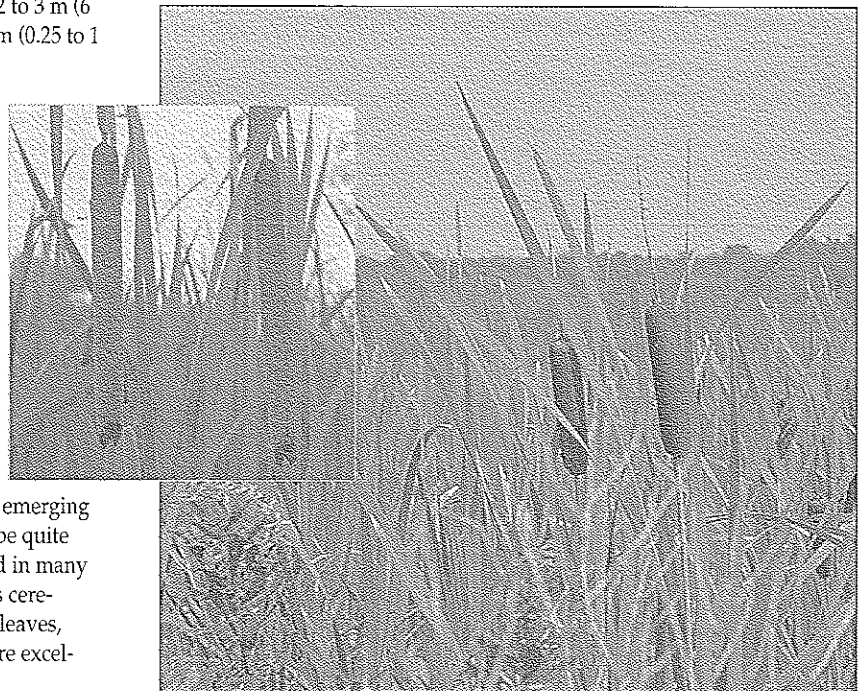
Botanical Name: *Typha latifolia*
Pronunciation: TY-fah
lah-ti-FO-lee-ah
Common Name: Cattail
Family Name: Typhaceae (Cattail Family)
Range: Widespread across North America
Habitat: Swamps, marshes, ponds, and stream sides
Bloom Period: March through May

The flat, linear leaves are 2 to 3 m (6 to 10 ft) tall and 6 to 23 mm (0.25 to 1 in) wide.

Cattails are an indicator of nutrient-rich water and a sign of excess fertilizer run-off. In healthy, diverse wetland communities, they help filter water, provide wildlife habitat, and cycle nutrients.

This common wetland plant is easily recognized by its brown cylindrical spike (the seed producing portion of the flower stalk) composed of hundreds of tiny female flowers. The male flowers are held on a slender green stalk above the female flowers. After the pollen is shed, the upper stalk withers, leaving the brown "tail." Cattails are perennials, growing back from starchy roots each year.

Every part of the cattail has been used by people for food, fiber, or ceremonial purposes. The roots contain up to 46 percent starch, and newly emerging root buds are reported to be quite tasty. Cattail pollen is used in many Native American religious ceremonies, while the mature leaves, though too tough to eat, are excellent for weaving.

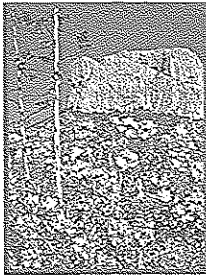


Benie Bengtson, Albert Vick

Faux Pas! Thanks to the attentive members who pointed out that the large photograph of *Baileya multiradiata* was incorrectly identified in last month's Wildflower Notebook. The species depicted has been identified as *Tagetes lucida*, which is in the Asteraceae family.

The BIG BEND BECKONS!

Space is very limited for the Wildflower Center's exciting journey to the Texas Big Bend, September 12-17. Join professional naturalist guides and your Wildflower Center host for five days of adventure and exploration in the pristine Chihuahuan Desert wilderness.



Stops include historic Fort Davis, the McDonald Observatory for a private star-gazing party, the Barton Warnock Environmental Education Center, and an all-day rafting trip down the Colorado river followed by a Texas-style barbecue with a cowboy crooner.

Reservations are on a first come, first served basis. The cost of the trip is \$1,235 (double occupancy), and final payment is due July 17. A \$400 deposit will confirm your reservation. Please mail and make check payable to: Far Horizons Archaeological and Cultural Trips, Inc., P.O. Box 91009, Albuquerque, NM 87119-1900. For more information, call Rene Hamilton at Far Horizons, (800) 552-4575, or Flo Oxley at the Wildflower Center, (512) 292-4200.

INFORMATION

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PROJECTS THE CENTER HAS CONTRIBUTED TO:

- Providing commentary to support President Clinton's Executive Memorandum requiring native plants to be used in federal projects when practical;
- Providing lists of native plant species to state departments of transportation under a contract from the Federal Highway Administration;
- Working with the National Council of State Garden Clubs distributing educational materials, supporting the NCSGC's PETALS program, and developing a major garden at the Wildflower Center funded through donations from all 9,200 NCSGC member gardens; and
- Co-hosting Camp Wildflower!, with the University of Texas, for minority girls.

Whether you realize it or not, the work of the Wildflower Center may be as close as your backyard -- regardless of where that may be.

PLANT SEEDS of Knowledge *This Fall*

Joseph Hammer
Products Manager

Beautiful lawns and gardens require not only planting, but planning. These books, available through the **Wild Ideas** gift store and catalog, will help you garden and landscape the natural way.

The Wild Lawn Handbook. Stevie Daniels. This book describes how to use native wildflowers, trees, and shrubs to save time, money, water, and pesticides. Includes seed and plant sources, charts, and color photos of alternative lawns. Hardback. \$20.00 (Members: \$18.00)

The Natural Habitat Garden. Ken Druse. Author and award-winning photographer Ken Druse shows you how to create a miniature ecosystem in your backyard -- through more than 450 color photographs and discussions of grasslands, woodlands, and wetlands. Hardback. \$40.00 (Members: \$36.00)

The Hummingbird Garden. Mathew Tekulsky. Lists of plants that attract hummingbirds and information about garden content and design are the features of this practical, entertaining guide. Paperback. \$12.95 (Members: \$11.66)

The Butterfly Garden. Mathew Tekulsky. Learn how to add color, light, and beauty to your garden and attract these delicate creatures. This guide also includes regional and seasonal data along with plant and butterfly sources. Paperback. \$9.95 (Members: \$8.96)

The Natural Lawn & Alternatives. Brooklyn Botanic Garden. Prairie plants, buffalograss, and native sedges are just a few alternatives offered along with eight tips for chemical-free lawns. Paperback. \$6.95 (Members: \$6.26)

Growing and Propagating Wildflowers. Harry Phillips. This guide covers expert techniques of wildflower propagation and cultivation based on 10 years of pioneering research at the North Carolina Botanical Garden. Paperback. \$16.95 (Members: \$15.26)

To order any of these great titles, call the Wild Ideas store Tuesday through Saturday, 9 a.m. - 5 p.m. (Central Time), at (512) 292-4300. As always, proceeds from product sales benefit the educational programs of the Wildflower Center.

F *From the* FIELD

Mid-Atlantic

Washington Crossing, PA: *Knowing Native Plants: Wetland Plant Identification, July 22, Contact:* Bowman's Hill Wildflower Preserve Association, Box 103, Washington Crossing, PA 18977; (215) 862-2924.

Washington Crossing, PA: *Knowing Native Plants: Asters and Goldenrods, September 23, Contact:* Bowman's Hill Wildflower Preserve Association, Box 103, Washington Crossing, PA 18977; (215) 862-2924.

Southeast

Athens, GA: *Irrigation Workshop, July 13, Contact:* The State Botanical Garden of Georgia, 2450 S. Milledge Ave., Athens, GA 30605; (706) 542-1244.

Oklahoma/Texas

Denton, TX: *Ecological Restoration in Texas, August 19-20, Contact:* Environmental Restoration Conference, Institute of Applied Sciences, P.O. Box 13078-UNT, Denton, TX 76203; (817) 565-2694.

Rocky Mountains

Salt Lake City, UT: *5th International Rangeland Congress: Rangelands in a Sustainable Biosphere, July 23-28, Contact:* General Secretary, 5th IRC, P.O. Box 11637, Salt Lake City, UT 84147; (801) 524-5054.

Southwest

Flagstaff, AZ: *Second Southwestern Rare and Endangered Plant Conference, September 11-14, Contact:* The Arboretum at Flagstaff, P.O. Box 670, Flagstaff, AZ 86002; (602) 774-1441.

Northeast

Brooklyn, NY: *Native Plants: Toward a 21st Century Garden, June 1, Contact:* Brooklyn Botanic Garden, 1000 Washington Ave., Brooklyn, NY 11225; (718) 622-4433.

Wetlands once covered an estimated 221 million acres in the continental United States. Today, they cover only about 104 million acres -- a loss of more than 53 percent in a span of only 200 years. Twenty-two states have lost 50 percent or more of their original wetland areas, with California topping the list at 91 percent lost. According to the National Wetlands Inventory, the lower 48 states have lost more than 60 acres of wetlands for every hour between the 1780s and the 1980s. Wetlands have been drained for agricultural development and to harvest peat and fossil fuels. However, the importance of wetlands extends far beyond their economic value.

Wetlands serve a number of key functions. As homes for wildlife and waterfowl, wetlands provide habitat for nearly two-thirds of the native North American nesting and breeding ducks as well as nearly two-thirds of the native North American marine fish and shellfish. In fact, wetlands serve as the habitat for 90 percent of the plants, 30 percent of the birds, 15 percent of the mammals, and 50 percent of the fish in the *U.S. List of Threatened and Endangered Species*; the death of a wetland can easily mean the extinction of many species.

Wetlands are also excellent natural water purifiers, and have been shown to filter and absorb toxic pollutants as well as organic and inorganic nutrients. In addition, they absorb silt and sediment from surface waters. Successful experiments using constructed contained wetlands to filter sewage wastewater and stormwater have led to plans to develop more of these processing stations -- at significant savings to municipalities.

As natural controls for flooding and shoreline protection, wetlands are extremely useful. Wetlands can slow the peak surges of stormwaters by acting as natural sponges to store water, releasing it slowly over time.

Overall, wetlands offer boundless opportunities for learning about the environment and our place in it. And, while wetlands are, indeed, home to mosquitoes, snakes, and other things, the benefits of these fragile areas far outweigh the reasons for their destruction. Through learning about wetlands and becoming involved in their protection, you can help reclaim some of these rapidly vanishing natural wonders.



Let the Good Times Grow! 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 gardens and grounds
- ✿ The bi-monthly newsletter, *Wildflower*
- ✿ A 10% discount on unique Center products such as wildflower books, calendars, and T-shirts
- ✿ Advance notice of tours and Center seminars and classes
- ✿ Discounts for information from the Center's Clearinghouse
- ✿ 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: _____

Phone: _____

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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