



NATIONAL WILDFLOWER RESEARCH CENTER

*wildflower*

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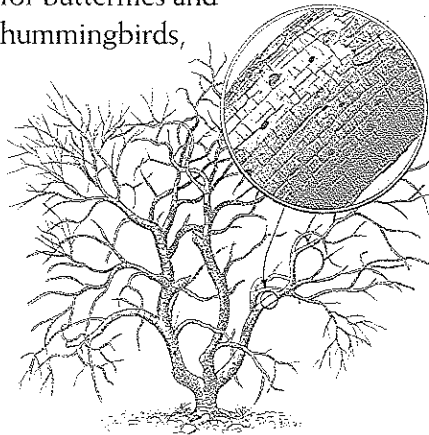
## Attracting Native Bees to Pollinate Backyard Gardens

*Dr. Stephen Buchmann  
Forgotten Pollinators Campaign  
Arizona-Sonora Desert Museum*

During a recent trip to Austin, I was amazed to see great numbers of diverse summer-blooming annuals and perennials on hillsides and meadows. Planting the formal gardens at the National Wildflower Research Center hardly seemed necessary in such a verdant idyllic setting. Yet, the demonstration gardens amongst the native stone buildings were avidly visited by two-footed visitors consulting wildflower field guides and hungry hexapods guided to their respective floral smorgasbords by enticing scents and colors. The gardens were awash in variously hued blossoms and foliage while being bombarded with flying insects of every description, especially butterflies, flies, beetles, and native bees. I even spied a clear-winged fat bumblebee which turned out to be a day-flying sphinx moth in disguise! Yet, the guidebook naturalists and casual passersby only noticed the brilliant larger butterflies and the giant black

and yellow bumblebees. Countless hordes of flying, alighting, and sipping pollinators went about their foraging without anyone noticing.

That's really the problem. Except for butterflies and hummingbirds,



*Standing dead trees or limbs offer some of the amenities bees find most attractive in a home.*

the world's more than 1/4 million pollinators -- over 4,000 native bees in the United States alone -- are truly "forgotten pollinators" too small or drab to notice. Most bees lead solitary lives in the ground or within hollow twigs or soft wood. Not surprisingly, due to habitat fragmentation and pesticide/herbicide applications, we've lost many of our native pollinators. Even the common introduced European

honey bee -- a gift of the early English and Spanish colonists -- has succumbed to parasitic mites, agricultural chemicals, droughts, and harsh winters. Honey bee colony numbers dropped from 5.9 million in 1950 to only 1.9 million in late 1996.

Almost 150 plant species are cultivated as food, fiber, and medicinal crop plants in the United States. Just one crop, almonds grown in California, requires 0.8 million bee colonies. With less than two million colonies tended by beekeepers, and wild colonies ravaged by mites and diseases, there aren't enough honey bees to pollinate our crops or the flowers, fruit trees, and vegetables in our yards. That is why our native insects are important to ecosystem health and for food stability and low prices at the supermarket. Every third bite of food we eat started out as a flower pollinated by an insect, usually a nondescript native bee. Without delay, we must now learn to protect and conserve bees and their food plants and use some simple techniques to get them back into our yards and lives.

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A MESSAGE FROM  
OUR PRESIDENT  
*Ellen Temple*  
President, Board of Directors

Of all the work a Board does, hiring an executive director is its number one responsibility. We were fortunate to have "legendary leader" Martha Farmer to keep the ship at full sail as the Interim Executive Director during the past nine months. After a thorough search, we are pleased to announce we have found the perfect fit for the long haul: Dr. Robert Breunig, who will take the helm beginning November 17, 1997. Dr. Breunig is a visionary and

experienced leader who will help take our Wildflower Center to the next level in its service to the people of North America.

Dr. Breunig comes to us with a wealth of CEO experience as the current Executive Director of the Museum of Natural History in Santa Barbara, California and as the past Executive Director of the Desert Botanical Garden in Phoenix, Arizona.

It was during his time as the leader of the Desert Botanical Garden that Dr. Breunig developed his passion for native plants and their importance to our national

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A MESSAGE FROM OUR  
NEW DIRECTOR

*Dr. Robert Breunig*  
Executive Director

The National Wildflower Research Center has a vital mission, an inspired and beloved founder, a strong board, an energetic and capable staff, and a devoted core of volunteers, along with a campus of great beauty and acclaim. Nothing could make me prouder than to have been selected to direct this organization. I am most honored to have the opportunity to further the mission of Lady Bird Johnson and follow others who have guided the

Wildflower Center to its state of current prominence. It was the mission and vision of Mrs. Johnson that

compelled me to accept this opportunity, for along the way in my career I have come to acquire a passion for native plants, wildflowers and their heritage.

The story through which I acquired this passion is, I believe, instructive. I was born and raised in urban Indianapolis, where my opportunities to observe nature as a

*continued on page 6*



*Dr. Robert Breunig*  
Executive Director

The purpose of the National Wildflower Research Center is to educate people about the environmental necessity, economic value, and natural beauty of native plants.

Founder  
*Lady Bird Johnson*

President of the Board of Directors  
*Ellen Temple*

Editors  
*F. M. Oxley*  
*Julie Barrett Heffington*

Designer  
*Elaine Brown*

Contributing Authors  
*Natalie Coffey*  
*Joseph Hammer*

Contributing Photographers  
*Stephen Buchmann*  
*Dennis Fagan*

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## Thanks for Your Help and Support!

During 1997 we had several successful spring events. Tiffany & Co. hosted a special luncheon at the Wildflower Center.

The annual Wildflower Days Festival attracted major underwriting by Whole Foods, The University of Texas at Austin LBJ School of Public Affairs, and American Airlines.

The *America the Beautiful Celebration* was a grand affair with guests from across the United States due to the efforts of our Gala chair, Peggy Mays. A big thank you to our many generous donors, including Four Seasons Hotel Austin.

The BIG BUGS exhibit arrived in June. Special thanks to Bradfield Martino Advertising, the Junior League of Austin, the *Austin American-Statesman*, Dow Chemical, Randalls Food Markets, Stephen Joseph, and the Austin Community Foundation for their contributions to the exhibit and educational programs.

Lack's Furniture honored the Wildflower Center by donating an industrial refrigerator for the Cafe.

Free-admission days were underwritten by JC Penney, KVUE 24 television, and the *Austin-American Statesman*.

Our Wildflower Patron's program has enjoyed tremendous success due to the leadership of Anne Symonds and Gay Estes. We appreciate their efforts and the generosity of our Patrons.

The Center is grateful to the supporters of our education programs: Applesseed Foundation, Brown Foundation, Inc., Dwight Sutherland, Marybeth Weston Lobdell, Meadows Foundation, Mitchell Energy and Development Corporation, Powell Foundation, Susan Vaughan Foundation, Inc., Texas Garden Clubs, Inc., Veritas Foundation, and 3M.

We also would like to thank our volunteers and members for their unwavering day-to-day support of our programs and activities.

Finally, the Center is extremely grateful for the T.L.L. Temple Foundation's grant to provide a much needed expansion for *Wild Ideas: The Store*.

While we can't thank all our supporters in this space, we want you all to know that we appreciate you, without you none of this would be possible. Thank you for your continued support.

## Attracting Native Bees

from page 1

Bees aren't unlike humans or other animals. Just like us they need food, water, and shelter. They are strict vegetarians who dine on sweet floral nectar for energy-rich sugars, and on protein and lipid-rich pollen grains offered up by flowering plants as nutritious "parting gifts" to these little go-betweens. Bees are especially hairy and gather up vast amounts of pollen containing plant sex cells and DNA. Going from flower to flower on different plants, they perform essential "outcrossed" pollinations, literally leaving fruits and seeds in their wake. Most people are surprised to learn that pollination happens by accident as bees go about gathering food for themselves and their larvae. Bees are not just out to "help" plants achieve sexual liaisons.

### native insects are important to ecosystem health

There are just a few simple rules to follow when gardening for wildlife. To create a pollinator garden for butterflies, moths, bees, hummingbirds, or bats -- remember to plant many

different kinds of flowers which bloom over a long period through the seasons -- the more floral diversity and rewards the better. Try to plant many different wildflowers, ones that are adapted to your local soils, climate, and rainfall. In just a short time, such plantings will repay your efforts since they require less water and fertilization than typical horticultural cultivars. The pollinators will thank you, too. Native plants or even older cultivated floral varieties are highly attractive and rewarding with nutritious pollen and nectar. Sadly, modern hybrids often are all for show and offer no food for the birds and the bees. Bumblebees have been shown to prefer older varieties and native species over double-flowered hybrid blossoms in side-by-side comparisons. For bees, try to plant lots of highly attractive yellow and blue flowers, especially those in the Asteraceae (Sunflower) and Fabaceae (Pea) families (see "Top 40" list).

Besides food, bees require water, nest sites, and building materials (often mud, resins, pebbles, plant hairs). The best real estate with all the amenities is just as scarce for native bees as for people. You can remedy this situation and build up populations of pollinating and non-threatening bees by leaving standing

dead trees or limbs on your property. Beetles, which emerge as adults from the dead wood, create perfect tunnels which female bees -- especially leaf-cutter and mason bees -- in search of nests seek out and occupy. Similarly, you can create artificial "bee condominiums" by drilling holes (from 1/8 to 5/16 inches in diameter and 3 to 6 inches deep) into scrap blocks of wood. These can be nailed up under eaves on homes or outbuildings to provide plenty of nesting sites for native bees which in turn can pollinate your garden or orchard.

### every third bite of food we eat started out as a flower pollinated by an insect

Small changes in gardening activities can help conserve and protect our pollinators for future generations.

For more information, please contact:  
The Forgotten Pollinators Campaign  
c/o The Arizona-Sonora Desert Museum  
2021 N. Kinney Road, Tucson, AZ 85743  
Telephone: (520) 883-3006  
Facsimile: (520) 883-2500  
e-mail: fpollen@azstarnet.com  
Web Site: <http://www.desert.net/museum/fp/>



Closeup of a common desert "digger bee,"  
*Centris pallida*.



Carpenter bee nest inside a sotol.

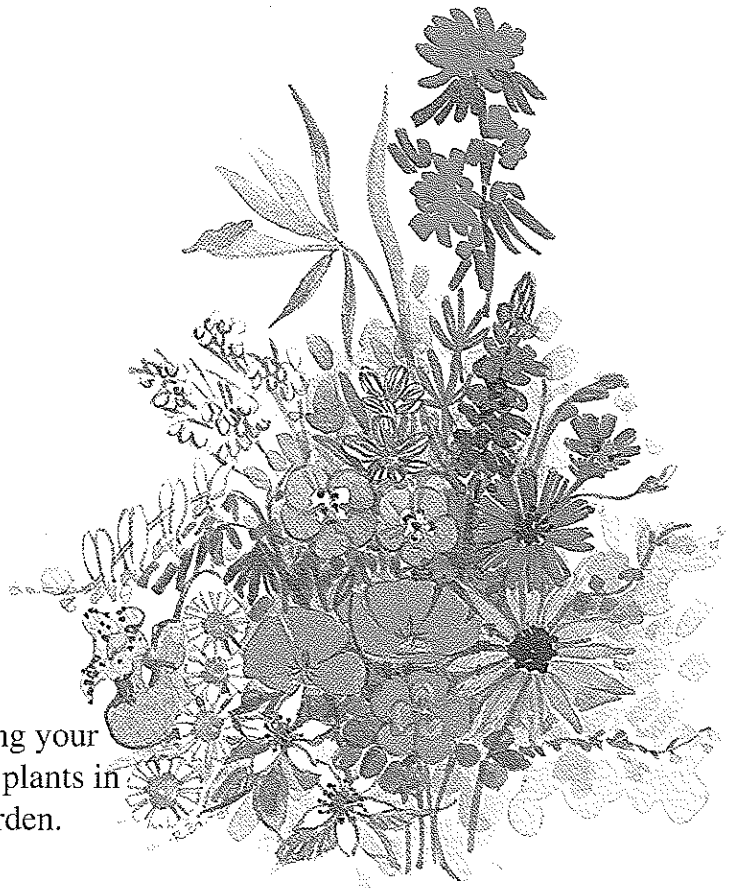


Female *Ptiloglossa* bee harvesting pollen  
from a deadly nightshade flower.



## “Top 40” Hit Parade Bee-Attracting Genera for Your Garden

1. *Phacelia* sp. (Scorpion weed, blue curls)
2. *Eriogonum* sp. (Wild buckwheat, umbrella plant)
3. *Helianthus* sp. (Sunflower)
4. *Lotus* sp. (Lotus)
5. *Solidago* sp. (Goldenrod)
6. *Salix* sp. (Willow)
7. *Cryptantha* sp. (White forget-me-not)
8. *Aster* sp. (Aster, daisy)
9. *Melilotus* sp. (Sweet clover)
10. *Ceanothus* sp. (Wild lilac, blue blossom)
11. *Penstemon* sp. (Beard-tongue)
12. *Haplopappus* sp. (Old man's beard)
13. *Chrysothamnus* sp. (Rabbitbrush)
14. *Clarkia* sp. (Farewell-to-spring, godetia)
15. *Gutierrezia* sp. (Matchweed, broomweed)
16. *Camissonia* sp.
17. *Lupinus* sp. (Lupine)
18. *Dalea* sp. (Indigo bush)
19. *Prunus* sp. (Cherry, plum)
20. *Trifolium* sp. (Clover, trefoil)
21. *Salvia* sp. (Sage)
22. *Asclepias* sp. (Butterfly weed, milkweed)
23. *Sphaeralcea* sp. (Globe mallow)
24. *Grindelia* sp. (Gumweed)
25. *Erigeron* sp. (Fleabane)
26. *Senecio* sp. (Groundsel)
27. *Eriodictyon* sp. (Yerba santa)
28. *Astragalus* sp. (Milk vetch)
29. *Encelia* sp. (Brittle bush, incienso)
30. *Rhus* sp. (Sumac)
31. *Cirsium* sp. (Thistle)
32. *Rubus* sp. (Bramble)
33. *Coreopsis* sp. (Coreopsis)
34. *Prosopis* sp. (Mesquite)
35. *Larrea* sp. (Creosote bush)
36. *Gilia* sp. (Gilia, sky rocket)
37. *Brassica* sp. (Mustard)
38. *Arctostaphylos* sp. (Bearberry, manzanita)
39. *Medicago* sp. (Medic)
40. *Chaenactis* sp. (False yarrow)



It is never too early to start thinking about planting your spring garden. Keep these “Top 40” bee-attracting plants in mind when planning your spring pollinator garden.





## Wild Ideas Shopping Event

The Center's annual holiday shopping event is December 5 - 7. Besides free admission and the 10% discount members receive every day, there will be tax-free shopping Friday and Saturday, December 5th and 6th. New specials and surprises will be featured each day, and a select group of artists and artisans will be on hand to sell their creations. Hours are 9 a.m. - 5:30 p.m. Friday and Saturday, and noon - 5 p.m. Sunday. Call (512) 292-4300 for more information.

## Holiday Cards Benefit the Wildflower Center



Cards For A Cause, an Atlanta-based greeting card company, has produced a holiday card representing trees of North America with the cooperation of the Wildflower Center. Royalties from the sale of the cards nationwide, at such stores as Border's Books and Crown Books, go to the Wildflower Center. The cards (\$13.95 for a box of 10) can also be ordered from *Wild Ideas: The Store*, at (512) 292-4300.

*Wild Ideas: The Store* will close after Sunday, December 7, and remain closed through January to allow for a major expansion funded by a generous grant from the F.L. Temple Foundation. (The catalog and mail order business will continue as usual.) Watch for exciting details about the store's reopening in February 1998!

## President

from page 2

well being. He positioned the Desert Botanical Garden as a major force in educating people about the value of desert plants.

Dr. Breunig earned his Ph.D. in anthropology from the University of Kansas and his B.A. from Indiana University. He has served as an educator and also as the curator/deputy director of the world renowned Heard Museum of Phoenix where he created the pace-setting exhibit, "Native Peoples of the Southwest." During his time at the Heard Museum, he developed much of his thinking about the relationship between culture and land in the desert. This led to his profound interest in native plants and their place in the history and ecosystems of the region.

Dr. Breunig is a member of the National Museum Services Board, the policy making

group for the Institute of Museum and Library Services, with the distinction of having been appointed by President George Bush in 1991 and then reappointed by President Clinton in 1994. He is a past member of the Board of Trustees, Center for Plant Conservation, St. Louis, Missouri, past Vice President, Board of Directors, Arizona Native Plant Society, and, past Senior Museum Associate, Museum Management Institute, the Getty Trust.

Bob has a reputation as a great leader, a visionary, and strategic thinker. He has a commitment to excellence.

We look forward to working with him and will support and help him in any way we can, as together, we guide this Center to new national influence.

## From the FIELD

### NEW ENGLAND

**Framingham, MA:** *Winter Twigs, November 8, New England Mountain Flowers, November 9, Ecological Succession in New England, November 12, North American Trilliums, November 14, Wetland Species Identification in Winter, November 15, Ferns and Fern Allies, November 19, Winter Wetland Plant Identification Workshop, November 22, Early Winter Hike, December 28, Winter-Greens, December 30.* **Contact:** The New-England Wild Flower Society, 180 Hemenway Rd., Framingham, MA 01701. (508) 877-7630 ext. 3303.

**New Hope, PA:** *Winter Weeds & Seeds, November 15.* **Contact:** Bowman's Hill Wildflower Preserve, Washington Crossing Historic Park, Box 685, New Hope, PA 18398, (215) 862-2924.

### SOUTHEAST

**Athens, GA:** *Seed Workshop: Collecting, Cleaning & Storing Seeds of Native Plants, November 6.* **Contact:** The State Botanical Garden of Georgia, 2450 S. Milledge Ave., Athens, GA 30605, (706) 542-6156.

### Ft. Lauderdale, FL: Ecological

*Restoration & Regional Conservation Strategies, November 12-15.* **Contact:** ALCA, 150 Eden St., Suite 270, Herndon, VA 20170, (800) 395-2522.

### OKLAHOMA/TEXAS

**Austin, TX:** *Wild Basin Walk, November 8, 9, 22, December 6, 14, 20.* **Contact:** Wild Basin Wilderness, 805 N. Capital of Texas Hwy., Austin, TX 78746, (512) 327-7622.

**Austin, TX:** *BIG BUGS, November 1, 1997 - February 21, 1998.* **Contact:** National Wildflower Research Center, 4801 La Crosse Avenue, Austin, TX 78739, (512) 292-4200.

**Houston, TX:** *Arboretum Amble, November 8.* **Contact:** Houston Arboretum & Nature Center, 4501 Woodway Dr., Houston, TX 77024, (713) 681-8433.

### NORTH CENTRAL/MIDWEST

**Kingsville, MO:** *Tree & Shrub Care to Minimize Environmental Stress, November 5.* **Contact:** Powell Gardens, 1609 NW U.S. Hwy. 50, Kingsville, MO 64061, (816) 697-2600 ext. 225.

## Executive Director

from page 2

child were somewhat limited. Although I enjoyed the city's parks and open spaces, nothing in my educational experience taught me to distinguish a native tulip tree from an exotic nor learn to recognize the native habitats of my region. I owe my first awareness of the necessity for native plant appreciation to experiences I gained among the Hopi and Navajo Indian people, while doing doctoral research in Arizona through the University of Kansas.

In 1970 I left the Midwest and settled in Flagstaff, Arizona where I taught anthropology at Northern Arizona University and later worked as an educator and curator at the Museum of Northern Arizona. Here, I was privileged to spend time with the late botanist Dr. Walter McDougall. To him I owe both a scientific and aesthetic appreciation for native flora gained during field trips through the Ponderosa Pine forest landscape of the Colorado Plateau. In 1982 I relocated to Phoenix to accept a position at the Heard Museum and create a permanent exhibit about Indians of the Southwest. Here I developed an appreciation for yet another landscape -- the Sonoran Desert -- and a growing respect for the unique diversity of each habitat and region in this land.

In Phoenix, as a result of watching the

spread of urban growth around us, my wife Karen and I made a commitment to address native plant issues in our personal lives by planting our home landscape with natives and wildflowers. We also held active positions in the Arizona Native Plant Society. My increasing awareness of the diversity and necessity of native flora peaked for me in 1986 when I accepted the directorship of the Desert Botanical Garden. Not unlike the Wildflower Center itself, this garden has among its collections inspiring displays of native flora and examples of regionally appropriate architecture. The Garden provided a forum for promoting the appreciation and use of wildflowers and native plants throughout the Phoenix metropolitan area. It also demonstrated to me the effectiveness of a physical site or center in achieving these goals and showed me how truly rewarding it is to work within the arena of native plants and wildflowers. It is my hope that I can, through my service at the Wildflower Center, facilitate similar journeys of native plant discovery in a great many others.

The Wildflower Center is the strongest national organization dedicated exclusively to the appreciation, preservation and utilization of wildflowers and other native flora. The Center honors the native plant heritage of our country and seeks to con-

nect people in a fundamental way to their landscape. I believe that this connection is essential for the long term well-being of all life on earth. Native plant species and habitats are losing ground to urbanization, soil erosion, the invasion of exotic species and other environmental causes. These effects are fast eroding the biodiversity and uniqueness of each region in this land. The Center's work to preserve and extend the use of native plants and wildflowers indeed supports the foundation of all conservation efforts, for without our flora nothing of living nature will endure.

I believe that the Wildflower Center has the potential to transform our nation -- to connect our population to its natural heritage and to develop throughout the land a sense of ecological citizenship -- a sense that every place has its own inherent beauty and merits preservation. I invite you to join me and the others who have dedicated themselves to this institution to work together to fulfill the profound vision of Lady Bird Johnson -- a vision that is vitally important to the future of our country, our continent and indeed our world.

*Dr. Robert Breunig will begin his official duties as Executive Director of the National Wildflower Research Center on November 17, 1997.*



NATIONAL WILDFLOWER RESEARCH CENTER  
4801 LA CROSSE AVENUE, AUSTIN, TEXAS 78739

- ✿ General Information, (512) 292-4100
- ✿ *Wild Ideas: The Store*, (512) 292-4300
- ✿ Membership, (512) 292-4200
- ✿ Web Site, [www.wildflower.org](http://www.wildflower.org)



*The Wildflower Center is a member of Earth Share of Texas*

## Grow Native

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