BIODYNAMIC GARDENING • DRY-COUNTRY NATIVES • BUNTINGS

TEXAS GARDENER

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TEXAS GARDENER 34 YEARS SINCE 1981

Grow Native

A Story of Passion, Persistence and the Love of Native Plants

Alpine lies nestled in the foothills of the Davis Mountains of West Texas, surrounded by the wide open spaces of the Chihuahuan Desert. Towering yuccas and rows of Arizona cypress accent the lawn at Sul Ross State University. A mass of purple-flowered cenizo crowd a traffic median and yards are profuse with blooming penstemon, yellow bells and desert willow. The native plants give a comforting sense of place to this small community.

Alpine's passion for native plants is not an accident. For more than 50 years, botanists at Sul Ross State University's Native Plant Propagation Program have collected seeds and cuttings, and tested hundreds of species to see which would do well as ornamentals. These plants, adapted to the dry conditions of the Trans-Pecos and the cold of a West Texas winter, are offered to the public for minimal cost and are the basis for a vibrant community of native-plant enthusiasts.

BY CATHRYN A. HOYT
Freelance Writer

Photos: Cathryn A. Hoyt

HISTORY OF THE PROGRAM

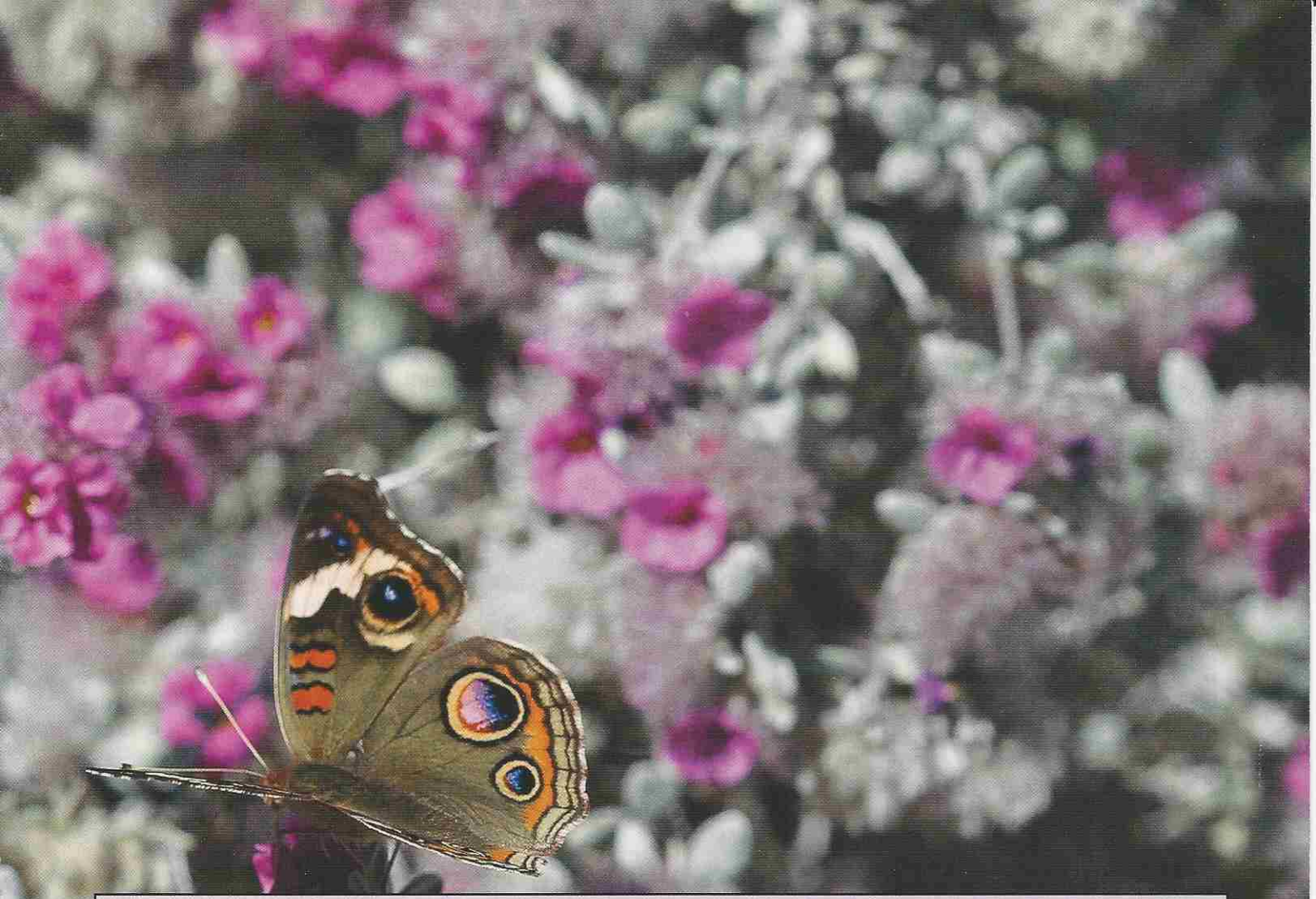
Dr. A. Michael Powell, founder of the Native Plant Propagation Program, traces his enthusiasm for growing native plants back to his research program. "When I started at SRSU in 1963," says Powell, "biosystematics was important." Biosystematics, the study of biological diversity and its origins, required source plants. "I needed to learn how to propagate my own research plants in order to experiment with hybrids."

His first success was with Arizona cypress, a beautiful evergreen tree native to the northern slopes of the mountains in West Texas and Mexico. Mature Arizona cypresses were abundant on the campus of Sul Ross, so he gathered a few seeds and was surprised at how easy they were to grow. After that, he started growing every native plant that produced collectable seed.

Powell's enthusiasm was driven by his desire to provide living plants for his students to study. "You could get plastic models of the different parts of a plant, but students learn so much more if they're working with living material," notes Powell. At first, his propagation attempts were confined to an indoor facility with banks of lights and concrete benches. Soon, this tiny greenhouse was full of teaching collections and Trans-Pecos liverworts, mosses, horsetails and ferns.

Powell's fledgling program got a boost in the mid-1970s, when the university built an outdoor greenhouse. "This was before plastic pots were available," says Powell with a smile. "I collected gallon containers from the cafeteria, punched holes in the bottom for drainage and used them as pots." He created his own growing medium by sterilizing good garden soil in a large oven, then adding some organic material. There was a lot of trial and error involved.

But the successes outweighed the errors, and soon Powell was



giving away seed or grown plants to anyone who expressed an interest in growing natives. The more he grew, the more he realized that there was a real need for native plants. The highway department wanted grasses for roadsides, the national parks needed native plants to restore the landscape around construction sites, and everyone wanted to know what would grow on the compacted caliche of an oil-well pad site.

"The most important thing," says Powell, "is working with local genotypes. If the national parks want plants for a restoration project, I think it's important to provide them with offspring of plants that grow in that park."

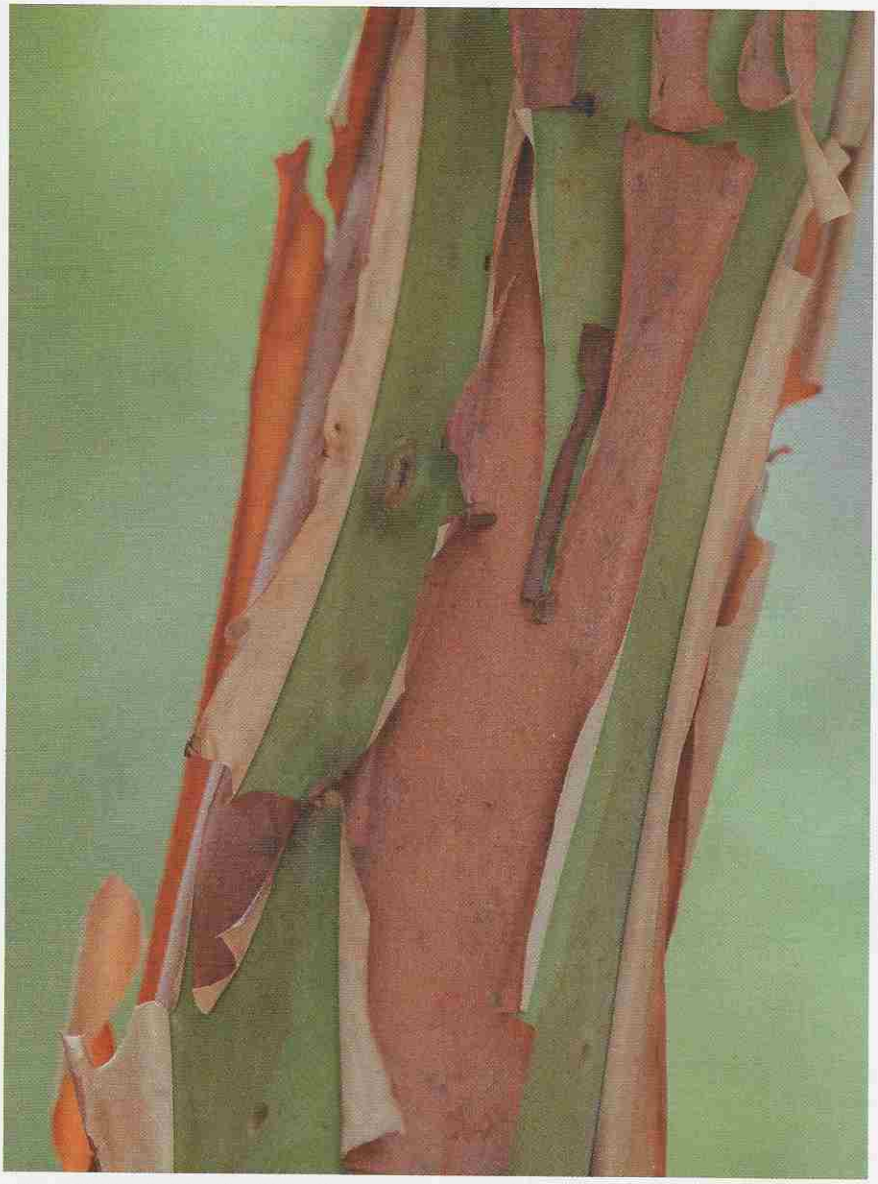
As interest in the use of native plants grew, the Sul Ross State University Native Plant Propagation Program was born. The program really took off in the late 1970s when funding to hire a manager became available and Sul Ross President C.R. "Bob" Richardson approached Powell and offered to build two new greenhouses. "He said I only had one chance, so I'd better get it right the first time," says Powell.

Powell researched greenhouses, looking for the best he could find. The high-desert climate posed some interesting challenges. The greenhouses had to provide protection from temperatures that regularly plummet below freezing, brilliant sunshine and frequent and potentially glass-shattering hail. The greenhouses he chose, from the Fort Worth Greenhouse Company, were state-of-the-art, featuring glass panels and aluminum shades that could be raised and lowered.

With the new greenhouses, the native plant propagation program expanded rapidly. But it was still a challenge to get native plants accepted as ornamentals. Everyone wanted "pretty" — which still meant pansies and petunias to most of the population. "We need to look at plants with different eyes," says Patty Manning. "We don't need tropical color all the time." Manning, a talented botanist, artist, and former manager of the Native Plant Propagation Program, knows that the beauty of many native plants is in the detail. "Slow down. Take the time to appreciate the shades of green and grey, the texture of the bark and the structure of tiny flowers."

To encourage the use of native plants, Powell planted more than 100 species of trees, shrubs and perennials in a demonstration garden — a garden that has expanded over the years and across the campus to feature plants of the lowland desert, mid-elevation grasslands and montane regions. A recent addition, the A. Michael Powell Cactus Garden, was created by Patty Manning. "What Patty did was unique," says Karen Little, the Environmental Laboratory manager at Sul Ross. "She went to sites where the desired cactus species were growing wild and then recreated their habitat. So you don't just see cactus; you see the other kinds of plants that would grow with that cactus species."

Today, local gardeners and



The peeling, red bark of the Texas madrone (above) makes this tree particularly attractive. Flocks of birds are attracted to the Texas madrone in the fall, when the bright red berries are ripe (below). The tree is evergreen, providing beautiful winter color.

plant enthusiasts from around the Southwest look forward to the annual Sul Ross plant sales, never sure what to expect. Will there be madrones? Agarito? Tracey hawthorn? Or perhaps something new, such as groovestem bouchea?

WHAT'S YOUR FAVORITE?

Asking staff to name a favorite plant drew puzzled frowns. How could you name just one? But with some pressing, a few outstanding plants appeared on everyone's "favorites" list.

TEXAS MADRONE

For Mike Powell, the successful propagation of Texas madrone (*Arbutus xalapensis*) is one of the highlights of the Native Plant Propagation Program. Found in the mountains of West Texas and the limestone hills of the Hill Country, these beautiful, evergreen trees are one of the most desirable ornamentals in Texas, according to Powell. Madrones are probably best known for their smooth, peeling, red bark. One wag told me that they are commonly called "tourist trees" because "they turn red and peel!" Madrones attract a wide variety of pollinators in the spring, when clusters of small, bell-shaped flowers cover the tree. In the late fall and winter, flocks of birds feast on the bright red berries.

Powell experimented with growing madrones because everyone wanted them, and no one knew how to grow them. "People were coming all the way from Austin, looking for madrones!" Powell says. He began by collecting madrone seeds from all the known localities. These different genotypes had different qualities. Some were faster growing, others able to withstand more xeric conditions. To clean the seeds, he placed them in a blender. "Some people cringe at that," says Powell, "but the seeds weren't destroyed as long as you didn't process them too much or too fast." He strained the berries and poured them out onto paper towels to dry.

The seeds were planted in long, cone-shaped pots filled with a fine, sterilized potting medium. Powell

is still amazed at how many grew. "We were getting 98–99 percent viability," says Powell. The trick to success, according to Powell, is paying attention. Madrones don't produce root hairs, so they're extremely susceptible to drying out and to fungal diseases. The pots were carefully watered with a sprayer so that the seeds weren't disturbed as they began to sprout. Once the seedlings have several leaves and are a few inches tall, they can be moved to a one-gallon container. Powell notes, "They're easy to transplant from there."

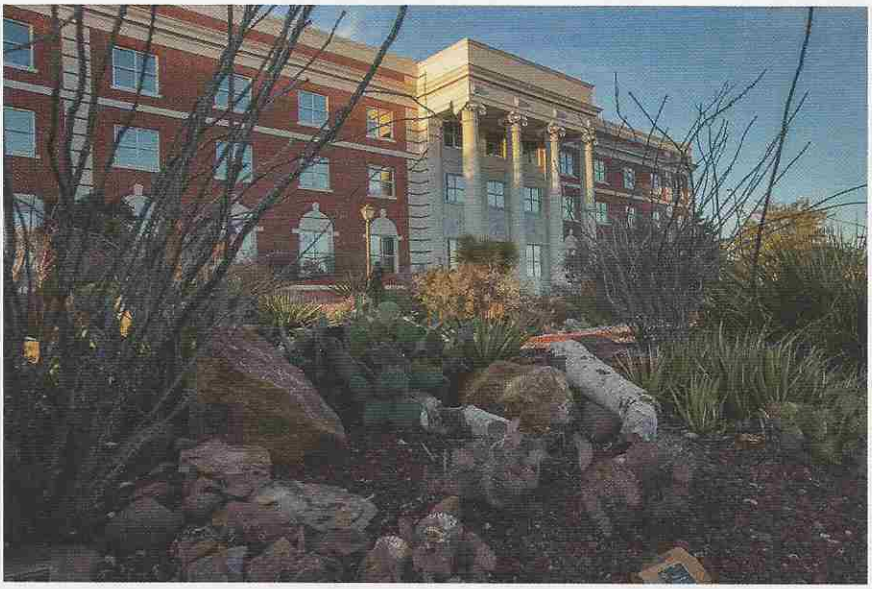
Well, somewhat easy. Madrones are finicky trees that don't like to have their roots disturbed. When transplanting, take every precaution to avoid root stress. Remove the container carefully and lower the tree into a hole as wide as the root ball. Sift additional soil over the roots to fill the hole. Don't tamp the soil down! Successful growers recommend not watering the newly planted trees for several days to weeks, depending on weather conditions, in order to avoid fungal damage.

TRACY HAWTHORN

"I guess we specialize in 'troublesome plants'," says Karen Little. "Things that most large commercial nurseries just don't have time for." The commercial nurseries need plants that are tough and can grow quickly. "We can coddle our plants a bit more."

One plant well worth the effort is Tracy hawthorn (*Crataegus tracyi*). A small tree found on the banks of rocky streams in West Texas and the Edwards Plateau, Tracy hawthorn is a favorite year-round. In the early spring, it puts on an amazing display of small, white flowers that attract butterflies, native bees and other small pollinators. During the summer, dark, glossy green leaves adorn the tree and by late summer, the small fruits turn bright red. Late in the year, Tracy hawthorns reward the gardener with a blaze of fall color — one of the few Trans-Pecos trees that do.

Learning how to grow Tracy hawthorn from seed took a while. It's a very complicated three-step



About 124 different types of native Chihuahuan Desert cacti are displayed in the A. Michael Powell Cactus Garden on the campus of Sul Ross State University.

Red-flowered mountain sage (above) towers over a mixed planting of native salvias at the Chihuahuan Desert Nature Center near Fort Davis. Karen Little (below), the current manager of the Native Plant Propagation Program, inspects a flat of seed-grown cacti.

Tracy hawthorn, a member of the rose family, is a small tree that puts on a lovely display of white flowers in the spring; glossy, dark-green leaves in the summer; and red rose-hips in the fall.

process, according to Jill Nokes, author of *How to Grow Native Plants of Texas and the Southwest.* The clean seed needs to be acid-scarified first, then placed in warm, moist storage for up to 120 days or planted outdoors in the fall. Following warm, moist storage, the seeds need from 100 to 300 days of cold temperatures before they'll sprout. "In our experience, they start growing while they're in cold storage," notes Little.

If you can get them started, Tracy hawthorns transplant well and respond nicely to incorporation into a landscape setting — as long as they get a bit of extra water! You might also use care where you plant them. Tracy hawthorns are well-armored with long, stout thorns.

PLUME TIQUILIA

"I'm a shrubofile," says Patty Manning. One of her favorites is plume tiquilia (*Tiquilia greggii*), a small, mounded shrub densely covered in silver-grey leaves. Plume tiquilia, a native to limestone substrates, responds happily to summer rains with a flush of ball-like clusters of tiny pink flowers and feathery seed plumes.

Growing plume tequilia is a challenge, according to Manning. The seeds are so tiny that a hand-lens is needed to be sure that they're ripe enough to collect. Once collected, Manning sifts them through a series of graduated sieves to separate the seeds from the dried flowerheads. Untreated seeds are planted in the early spring and sprout readily, although the seedlings are slow-growing and very sensitive to overwatering and transplanting. Have patience, though. Once they fill out a one-gallon pot, they're much hardier and will embrace a prominent position in your garden.

PENSTEMON

Nine species of penstemon grow in the Trans-Pecos region, but baccharisleaf penstemon (*Penstemon baccharifolius*) is a favorite of Native Plant Propagation Program staff. "It's kind of scraggly in the wild," explains Patty Manning. But in cultivation, it forms a beautiful, robust shrub that produces a profusion of red, tubular flowers that attract hummingbirds, native bees and butterflies. Unlike other penstemons that act like biennials — reproducing from seed and wandering about the landscape — baccharisleaf penstemon is a true perennial and will stay in place. "They're easier to use in a garden plan," says Manning. "They stay put."

Baccharisleaf penstemon can be grown from seed, but the seeds are tiny, difficult to collect, and the plant tends to be slow-growing. If you want to grow them from seed, that's fine, but be patient. They usually won't bloom until the second year. Baccarisleaf penstemon can also be propagated from cuttings. Plant in well-drained soil and don't overwater as they're susceptible to root rot.

SOME MORE FAVORITES

Mountain sage (*Salvia regla*): For those of you in a rut with autumn sage (*S. greggii*), mountain sage will come as a pleasant surprise. Native to the high elevations of the Chisos Mountains, mountain sage is ideally suited to areas with partial shade and ample moisture. They can reach 8 to 10 feet tall, so give them space! Mountain sage blooms in the fall, providing nectar for migrating hummingbirds and bumble bees.

Groovestem bouchea (*Bouchea linifolia*): Groovestem bouchea is a low shrub that produces clusters of showy, lavender flowers in the rainy season. Native to limestone habitats of the Trans-Pecos and the western Edwards Plateau, Groovestem bouchea is a plant that should be used more, according to Patty Manning. Plant in

full sun with well-drained mineral soils.

Big Bend silverleaf (*Leucophyllum minus*): Most native-plant gardeners are very familiar with cenizo (*Leucophyllum frutescens*). It — and its many hybrids — are widely available from nurseries. But what most people don't know is that there are two other species that grow in the Trans-Pecos and make excellent additions to a native-plant garden. Patty Manning's favorite is Big Bend silverleaf, a low shrub with silver-grey leaves and bright, deep blue flowers. It's the most cold-hardy and drought tolerant of all the cenizos.

Toothed serviceberry (*Malacomeles denticulata*): Toothed serviceberry is a moderately tall shrub found in limestone canyons at lower elevations in the Trans-Pecos. Drought-resistant, its long, arching stems, smallish white flowers and fleshy fruits (that turn from white to rose, to dark red, to blue-black) make it especially attractive. "Toothed serviceberry looks very lush in fruit, and lends a sort of opulence to the surroundings," says Patty Manning. "Mockingbirds love it."

Agarito (*Berberis trifoliolata*): Agarito is a wide-spread shrub that makes an outstanding ornamental but is surprisingly difficult to find in the nursery trade. The holly-like leaves are an exquisite blue-green color and, in the early spring, the shrub is covered with heavenly, honey-scented blooms that bees love. Agarito's red berries are relished by birds and humans alike — they make a great jelly!

Beargrass (*Nolina erumpens*): Beargrass isn't really a grass at all. It's a member of the agave family and really should be used more as an ornamental, if you have space. The small, white flowers attract butterflies, but it's the long, arching, evergreen leaves that make a statement.

As water becomes more and more of a concern, Texas gardeners are seeking out native plants that are ornamental, disease resistant and adapted to the regional climate. But for Mike Powell, who has spent his life promoting native plant ornamentals, the reason to grow natives is simple: "It's just the right thing to do." **TG**

PLACES TO VISIT

Sul Ross State University, Alpine. The demonstration gardens showcase plants produced by the Native Plant Propagation Program. Plants can also be purchased throughout the year.

The Chihuahuan Desert Nature Center, Fort Davis. This 20-acre botanical garden features more than 500 species of trees and shrubs native to the Chihuahuan Desert region and a collection of more than 250 species of cacti.

The Chihuahuan Desert Gardens, Centennial Museum, University of Texas at El Paso. This small, walled garden features more than 600 species of Chihuahuan Desert plants, musical fountains and beautiful sculptures.

More than 3,000 species of plants grow in the mountains, grasslands and desert shrublands of the vast Chihuahuan Desert region.