TREE COVER: A QUICK STUDY . THE MATRIARCH OF CHAMPIONS

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NATIONAL REGISTER OF BIG TREES 2004

> THE STORY BEHIND OAKS

GREENING BUSINESS



# **American Forests**

### STATURE BEYOND SIZE

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Don't be fooled by size. Maryland is the nation's matriarch of monumental trees. — by Whit Bronaugh

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A move toward a sustainable economy is attracting followers from across the corporate spectrum.  $-\,by\,Jane$ Braxton Little

#### FROM LITTLE ACORNS, CHAMPION OAKS GROW 38

How it all began for what is arguably one of the nation's best-loved species. — by Whit Bronaugh



# NATIONAL REGISTER OF BIG TREES 2004-05

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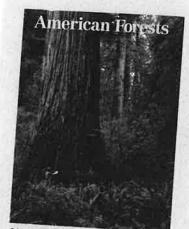


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## ARIZONA CHAMP SURVIVES FIRES

editor: Last summer wildfires in the Santa Catalina Mountains north of Tucson devastated 83,000 acres of beautiful mountain woodland on Coronado National Forest. These fires destroyed the mountain village of Summerhaven and later provided the charred background for President Bush's nationally televised speech calling for action to prevent such future disasters.

Tree lovers down in the Tucson valley watched as the blaze and smoke consumed thousands of acres of beautiful, rare Arizona cypress. Down in a deep canyon in the middle of the hottest part of the fires was our national champion cypress, a magnificent specimen estimated to be 500 years old with a diameter of nearly 7 feet. It was months after the fire before the Forest Service allowed us to inspect the burned areas.

It was with some trepidation that we approached the site; directly upslope from the champion many hundreds of cypress trees had been killed. But our tree, with its feet in the creek in the bottom of Bear Canyon, was unhamed, its bark not even charred. Nominated almost 50 years ago, this tree was one of Arizona's first national champions. Having survived centuries of unrecorded drought, wildfires, flood, and windstorm, our champion still reigns.

Robert Zahner Big Tree Coordinator, Arizona Tucson, Arizon

#### SHOW US THE PICTURE

editor: I am a retired teacher who has read American Forests for 35 years. The Forum section of your Winter 2004 issue has a letter from a teacher, Kathie Mogish, who relates her Sunday School children's interest in supporting good stewardship of our earth. They created a product which they sold to earn money and which they chose to send to you. Kathie's letter was accompanied by a picture, which the proud youngsters wanted you to see. Why didn't you publish the picture with the letter?

I'm writing this letter out of the disappointment the children must be feeling in not seeing the picture of their efforts recognized. You found room in your magazine to publish three pictures of a famous movie star, a picture of a well-known Indian activist, multiple pictures throughout of people doing all sorts of activities including all throughout your Clippings section.

Have you completely lost touch with the people who support you? My bet is that I will never see that picture or this letter in your magazine.

Darlene Demetrick Lopez Island, Washington

Compliments? Complaints? Questions? Send your Letters to the Editor to mrobbins@amfor.org or c/o American Forests, PO Box 2000, Washington, DC 20013. American Forests reserves the right to edit letters.





DEBORAH GANGLOFF EXECUTIVE DIRECTOR

# **Ecosystem Value & Trees**

Greener, cleaner, more financially savvy environments include trees. The evidence is all around us.

very day on my way to work I pass the site of a new "starter castle"-the sixcar-garage kind springing up in farm fields and open land across the country. In its front yard, hundred-year-old oaks lay ripped from the ground like matchsticks dropped from the hand of Paul Bunyan. If the proud owners knew what those trees were really worthin air and water quality, real estate values, and aesthetics, would they have sacrificed them for more lawn to mow?

AMERICAN FORESTS' challenge is to help people understand the value that trees and forests bring to an ecosystem. A focus on ecosystem values shifts the traditional view from seeing natural resources as a checking account that can be drawn down, to that of a savings account from which you might draw interest earned but keep the principle untouched. The ecosystem values of a forest don't disappear when one tree is removed. But if a significant portion of its

trees are lost, the cycling of air, water, and carbon are disturbed and the ecological benefits decrease.

More than 150 years ago, pioneers on the Tahoe National Forest searched for gold and other precious metals by shooting water through high-pressure hoses to eat away at hillsides and slopes. I visited one of those sites, Buckeye Diggings, with U.S. Forest Service silviculturist Gary Cline last year. Establishing forests back on these sites is difficult and exactly why we created our Global ReLeaf campaign: to sponsor the planting of native trees to restore damaged forest ecosystems.

AMERICAN FORESTS has pioneered the technique of measuring and valuing the work trees do in cities and towns. With the newest generation of our CITYgreen software, CITYgreen for ArcGIS, cities and towns can more easily learn the dollar values of trees and create models that will allow them to set

goals for expanding and improving tree canopy.

Healthier economies are also achieved through environmental improvement. In "Doing Well by Doing Good' (page 32), Jane Braxton Little proves that a better economy and a healthier environment go hand-in-hand. Many companies, some supporters of American Forests, have shown they can increase profits and market share by producing cleaner, greener products and supporting the work of nonprofit conservation groups. It's getting easier

to be green.

And there's no better symbol of the ecosystem values of trees than our very own National Register of Big Trees. This catalogue of arboreal treasures stands as a tribute to majestic specimens of nature that are the largest of their kind.

Whether they are 275 feet tall, like California's General Sherman giant sequoia, or tiny, like the longspine acacia in Florida, our national champion trees stand as silent symbols of the interdependence of humans and trees. If a tree can

grow large, it's an indication the environment is healthy-healthy enough to support a tree, the world's oldest and largest living things.

Big trees are a way to help people understand the ecosystem values that trees provide. Big trees have more leaves to trap air pollution and transpire water into the air. They have more roots to hold the soil against wind and rain erosion, and their wealth of branches and twigs cradle nests and dens. And big trees can absorb more greenhouse gases.

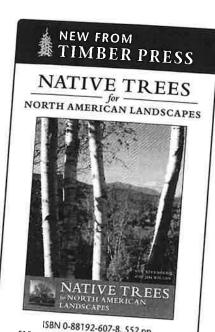
There's a reason American Forests launched the Big Tree program 64 years ago. When our imagination is captured by a 275-foot tall sequoia or a powerful, spreading oak with limbs that reach 100 feet, perhaps we'll also stop to think how trees make life possible for our species. Then maybe we won't so easily toss a hundred-year-old living thing aside and rev up the lawn mower. AF

AMERICAN FORESTS challenge is to help people understand the value that trees and forests bring to

an ecosystem.

In South Carolina. Chisolm Beckham helps search for national champs.





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- Tree profiles describing flower and fruit, native and adaptive range, and culture.
- More than 650 species and varieties, and more than 500 cultivars.

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American Forests gratefully accepts bequests for our ongoing programs and for our Endowment Fund. For more information, please contact Lu Rose at 800/368-5748 ext. 213 or write: American Forests, PO Box 2000 Washington, DC 20013 Attn: Wills & Bequests



#### CLIPPINGS

#### EBAY AND TREES

eBay auctions are no longer just a place to find a marble egg paperweight or a 1945 art deco vase. Now when you bid to win an item, you could be making a difference for a nonprofit like American

AMERICAN FORESTS has joined eBay's Giving Works program, in which a portion of the money bidders spend benefits a worthy nonprofit. Marked with a special ribbon icon, each Giving Works listing promises that a nonprofit will receive all or a portion of the proceeds from the sale of everything from silver chandelier earrings to blue tricycles.

Bidding on eBay Giving Works items is no different than bidding on any other eBay item. Just pick your item, sign in with your eBay account, and place a bid. You can even search specifically for eBay Giving Works items. Each item lists the nonprofit that will benefit. Visit www.ebay.com for more information about American Forests' listings.

The win-win situation comes via MissionFish, a service of the Points of Light Foundation. The Points of Light Foundation helps nonprofits turn in-kind donations into unrestricted funding.

## WANTED: OLD CHAMPS

Enjoy the 2004-2005 National Register of Big Trees in this issue, then get ready to help us with some changes for the 2006 Register.

Starting then, we'll have a "10 Year" rule: To stay on the list, all champs will need to have been remeasured within 10 years. We plan to make a few exceptions for trees in extremely remote locations, trees like Idaho's national champ whitebark pine, which requires a three-day hike to reach.

The new rule comes at the behest of Big Tree hunters and coordinators who attended a workshop in September 2003. With insects, disease, and fire threatening our forests, we worry that some champs may no longer be alive.

We hope this year's Register will inspire you to hunt for new champs and help us remeasure the old. Find out more on our website, www.americanforests.org/resources/bigtrees.

Mourning lowa's Senior Citizen

It came down last fall, but we didn't want this issue to pass without a special goodbye to lowa's oldest cucumber magnelia (Magnolia acuminata). Estimated to be more than 130 years old, the massive tree towered over the Good Samaritan Center in Waukon, lowa.

The much-beloved tree's passing was chronicled in the Waukon Standard, which ran a letter to the editor explaining that the tree was deemed to be dying and deteriorating, and therefore a hazard to passersby. Before it was taken down, the cucumber magnolia had sported a yellow ribbon to remember a Center employee who was called to active duty with the U.S. Army.

A woodcarver planned to keep the tree's legacy alive through carvings done from a portion of the trunk.



# TRANSITIONS



vе

Welcoming: New officers and four new members to AMERICAN FORESTS' Board of Directors. Kevin F. Daugherty, corporate marketer for ESRI in California

takes over as chairman from **R. Douglas Cowen**, who is chair, president and CEO
of The Davey Tree Expert Company.



Caroline Gabel, director of The Shared Earth Foundation, is treasurer.

New members are: James E. Hubbard, longtime state forester/direc-

tor for the Colorado State Forest Service, Hubbard has a distinguished career in state and private forestry administration and worked with various congressional committees on the forestry portion of the 1990 Farm Bill.

Bruce Lisman, executive vice president of Bear Stearns & Co. and former board chairman of the University of

Vermont. A native of New York City, Lisman works with several nonprofit and environmental organizations, and served on the board of the Riverside Park Fund, which helped restore and protect that NYC park.

Pernille Lopez, president of IKEA

North America. A former sales manager
and store manager for the Swedish furniture chain, she was appointed manager
of human resources for IKEA North
America in 1997 and was instrumental
in developing and implementing progressive policies that benefit employees.

Brad Rupp, a senior financial advisor and assistant vice president, investments, for Merrill Lynch Private Client Group in Jacksonville, Florida. Rupp has provided financial advisory services to high-net-worth individuals and small businesses for more than 20 years and previously worked for Proctor and Gamble.

Mourning: Steve Clark, 57, of Bethpage, Tennessee, who with his wife Vicki started one of the country's first urban forestry businesses. An enthusiastic lecturer who promoted progressive urban forestry practices, Clark worked closely with AMERICAN FORESTS in creating a partnership with the National Association of Home Builders in 1994.

Sherman "Jack" Frost, 94, of Columbus, Ohio. Known as "Mr. Water," Frost analyzed water for the Ohio Forestry Association and later for the division of water in the state Department of Natural Resources. He also served asa consultant for American Forests.

Forest, recently listed by the National Park Service on the National Register of Historic Places. A release from the college said it might be the only resource listed "for the continuous application of conservation science that began at the dawn of the American conservation movement."

The forest dates back to 1897.

Announcing: Ann Bartuska as new deputy chief for research and development for the U.S. Forest Service, replacing the retired Robert Lewis.

Patricia Ouderkirk, of Patricia S.
Ouderkirk Landscape Design in Bridgehampton, NY, as president of the Association of Professional Landscape Designers.

THE NATIONAL REGISTER 2004-2005

For us,

Jark.

and handsome

has a whole other meaning.

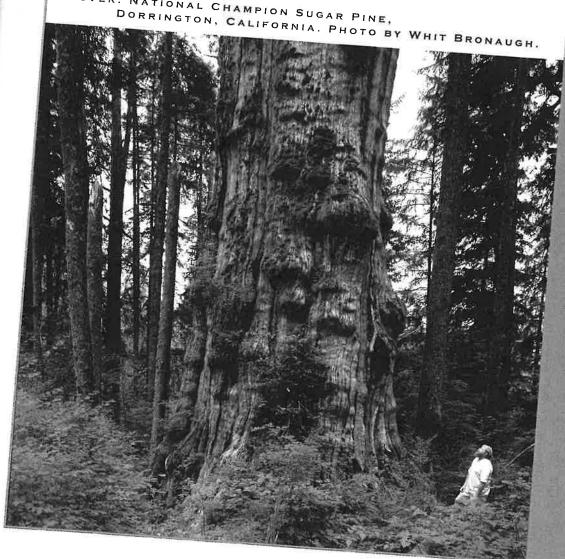
We're searching for the biggest of 826 species of trees for America's National Register of Big Trees. Join the search. Help champion America's biggest.

The National Register of Big Trees is online at http://www.americanforests.org/resources/bigtrees



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#### KEY

Co-champlon: . Naturalized: A County: Co.

National Forest: NF National Monument: NM

National Park: NP

National Recreation Area: NRA

National Wildlife Refuge:

State Forest: SF

State Natural Area: SNA

State Park: SP

State Recreation Area:

Wilderness Area: WA

Wildlife Management Area: WMA

For a list of champs by Latin name or by state, see our website at www.americanforests

# A COMMITMENT FOR THE AGES

ho doesn't stand in awe at the grandeur and majesty of a Champion Big Tree? We at Davey work with trees every day, but we have the same response to these giants as everyone else. And we know that support for these giants helps draw attention to the importance of all trees.



We all face the challenge of maintaining the balance between preserving our natural resources and accommodating growth and development. On every one of our work sites—be it a residential neighborhood, a utility right-of-way, or a public area—we strive to ensure that our actions foster the legacy of a healthy environment for our grandchildren.

We are proud to be affiliated with American Forests, an organization that shares our concern for the health of America's trees. With our sponsorship of the National Register of Big Trees and our continuing partnership in American Forests' Global ReLeaf campaign, Davey and American Forests celebrate nature's giants and acknowledge their majesty.

More than a century ago, John Davey founded our company with the goal of making sure that America's trees receive the best care available. Our support of the Big Tree program is one more way to stay true to his vision.

R. Douglas Cowan

Chairman and CEO, The Davey Tree Expert Company

ny tree can be a big tree; all it takes is a good place to grow, a little care, and a bit of luck. When we allow a tree to be all it can, the work it does for us increases dramatically. When it comes to trees, bigger really is better. Big trees provide more cooling shade and more places for wildlife to perch and nest. They sequester more carbon dioxide (a major greenhouse gas), trap more pollutants, and purify more water. Big trees hold more soil around

their roots, doing even more to slow soil erosion.

Our big trees are more than just anomalies. They are symbols of all the good work trees do for the quality of the environment and for our quality of life. And they are symbols of a world that will endure for generations to come; Earth's oldest living thing is a bristlecone pine in California that's been around for an estimated 4,700 years. Although most trees can outlive us—100 to 200 years is not unusual—they succumb to age, disease and insects, wind, rain, and drought. And now, all too often, to the chainsaw buzz of development.

American Forests' National Register of Big Trees is a wonderful way to educate people about the unique ecosystem services that trees provide. All trees work hard to improve our environment. It's our responsibility to maintain a healthy environment that allows trees to grow as big as they can be.

Deborah Gangloff

Executive Director, American Forests

# FOR EACH NOMINATION, AMERICAN FORESTS NEEDS THE FOLLOWING INFORMATION:

- 1. Correct name of the species or variety (only U.S. native and naturalized species are eligible). If you need help with identification, call your local Parks, Forest Service, or Extension office.
- 2. Circumference of the tree in inches at 4 1/2 feet above the ground. If there is a fork at this point, measure the smallest circumference below the fork. If it branches below 4 1/2 feet, measure the largest single stem at 4 1/2 feet.
- 3. Vertical height of the tree to the nearest foot.
- 4. Average diameter of the crown to the nearest foot. Measure the widest spread of the crown and the narrowest, then add them together and divide by two. 5. Location.
- 6. Date measured and by whom.
- 7. Name and address of owner.
- 8. Clear photograph with date taken.
- 9. Description of the tree's physical condition.
- 10. Name and address of nominator.

Send to: National Register of Big Trees, American Forests, P.O. Box 2000, Washington, DC 20013.

For the most complete information on measuring big trees, see our web site, www.americanforests.org/bigtrees.

### ELIGIBLE SPECIES

To be eligible for listing in the National Register of Big Trees, a species must be recognized as native or naturalized in the United States (species found only in Hawaii are not included). Hybrids and minor varieties are excluded. There are 826 eligible species and varieties: 747 native and 79 naturalized. To determine eligibility, AMERICAN FORESTS uses Elbert L. Little Jr.'s Checklist of United States Trees (Native and Naturalized), published in 1979 as U.S. Department of Agriculture Agricultural Handbook 541.

# DEFINITIONS OF TREES

As defined in the Checklist, trees are woody plants having one erect perennial stem or trunk at least 9 1/2 inches in circumference (3 inches in diameter) at 4 1/2 feet above the ground (breast height), a definitely formed crown of foliage, and a height of at least 13 feet. In contrast, shrubs are small woody plants, usually with several perennial stems branching at the base.

- Native tree species (also called indigenous) are wild and grew naturally or spontaneously in the undisturbed forest vegetation before the arrival of Columbus or other Europeans.
- Introduced tree species have been brought into the United States. A naturalized tree is an introduced species that has become common and established itself as though wild, reproducing naturally and spreading. Species accepted as naturalized are designated in the Register by the symbol ( $\Delta$ ).

# HOW TREES ARE COMPARED

To find a tree's total points, American Forests uses the following calculation: Trunk circumference (in inches) + Height (in feet) + 1/4 of its average crown spread (in feet) = Total points

• A nominee will replace a registered champion if it has more points. When two trees have scores that fall within 5 points of each other, they are listed as co-champions.

- The Editors

In California, Kathy Lyons helps measure endangered Santa Cruz cypress.

# Rising to New Heights

magine two years in the life of a mixed-age forest condensed into a one-hour movie. You could rejoice each spring as you see thousands of seedlings popping up all over, then mourn as most of them are eaten, wilted, overshadowed, starved, or trampled less than a minute later.

Cheer the select few that shoot up to the sapling stage, reaching several feet, perhaps, by the end of the movie. Watch for larger saplings and young trees to noticeably increase in girth and height, but you'll have to look closely to see the nearly imperceptible addition of one or two annual rings on bigger trees.

Except for the annual flush and fall of flowers and leaves, the odd fall of a major branch, and the relatively rare death and fall of a mature tree, not much happens in this movie, and it ends pretty much like it began. You could snooze through most of it and not miss a thing.

Now imagine a similar movie of a forest with a cast made up of titleholders from the National Register of Big Trees. There would be trees of all sizes—except none smaller than the Register's definition of a tree. Instead of making its debut as a seedling, each tree appears on screen at, or near, its species' maximum size.

You would witness the same seasonal changes, loss of branches, and growth in height and girth as in a natural forest but, by the end of this film, about 15 percent of the "actors" would have exited or died, to be replaced by a similar number of new actors in the surprise ending.

The two years since the previous edition of the National Register of Big Trees have yielded a sequel with its own dramatic changes. The 2004 edition honors 889 champions representing 738 species. Of these, 156 are newly crowned champions or co-champions of 142 different kinds of trees, while 115 former members of the royal family have lost their crowns or passed away.

The numbers have changed slightly but the five states with the most champions remain: Florida,



still at the top with 163 champs, followed by California (102), Arizona (84), Texas (80), and Virginia (56). Together, they account for more than half of all current national champion trees.

Arizona, which was just one champion ahead of Texas in 2002, has solidified its number three ranking with a net gain of 14, although Texas was close behind with a net gain of 11. Big tree hunters were most productive in Arizona where they found 34 new champions. Other particularly

active states were Texas (21 new champs), California (15), Tennessee (8), and Georgia (8).

Due to small size, lack of trees, or low tree species diversity, some states have relatively little chance of big tree glory at the national level. In 2002, 18 states and the District of Columbia had fewer than three national champs, if any. Since then, Nevada nabbed crowns for intermountain bristle-cone pine and co-champ big sagebrush, while Connecticut claimed the new champion sugar maple

HAVE STAR

POWER? SETTLE

BACK AND ENJOY

OUR BIENNIAL

LOOK AT WHAT'S

CHANGED IN THE

WORLD OF BIG

TREES. BY WHIT

IF ALL THE

WORLD'S A STAGE

AND THE FOREST

IS A MOVIE SET,

WHICH TREES

BRONAUGH



and a co-champion oneseed hawthorn, to double their totals to four champs each.

Kansas had been without a champion since 1997 when storms diminished, and vandalism destroyed, the Louis Vieux Elm near Louisville. Now Kansas is back with a 141-point champion eastern redbud in Topeka. The District sof Columbia recently announced its first valid national champion (an alder in the 1960s was misidentified), a 167-point common jujube which handily surpassed by 50 points previous co-champs from Texas and Georgia. Although Delaware, Massachusetts, North Dakota,

Oklahoma, and Wyoming remain without national champs, their state big tree programs have located some impressive trees.

Big tree enthusiasts are committed to finding the biggest individuals of each species of tree, no matter what its potential, but we can't help but be enthralled by the truly big finds. One of the most surprising was a gigantic Monterey pine near Carmel, California. Although introduced and cultivated as a timber tree in southern hemisphere. Monterey pine is native only to the central California coast where exceptional trees are 100 feet tall and 3 feet in diameter.

The new champion is twice as tall, has three times the diameter, and, with 570 points, outscores the previous champion by 248! This find moves the Monterey pine from relative obscurity in the Register to an overall ranking of 17, just five champs removed from the megatrees.

The third biggest new champion, an intermountain bristlecone Humboldt-Toiyabe in National Forest, Nevada, ended the 50-year reign of the Patriarch tree of California's White Mountains by just 26 points, Both trees are contenders for the nation's squattiest trees. The new champ is 38 feet in girth with a

**BROTHERS** ROBERT (RIGHT) AND BRUCE VAN PELT WITH THE INTERMOUNTAIN BRISTLECONE PINE IN NEVADA.

44-foot spread but stands only 52 feet tall. With differences of only a few feet here and a few inches there, and the blessing of great longevity, this could start a rivalry that could still be waged in the year 4000 and beyond!

The biggest new broadleaf champion—with 486 points—is a cherrybark oak in Tipton County, Tennessee. This is one of those big trees that is truly big in every dimension. It has a crown spread that just misses matching its 123-foot height, and a tape-stretching girth of nearly 28 feet. Thirteen other new members of the royal family score in the 400s: silver

maple, Arizona sycamore, Pacific madrone, American elm, common hackberry, two longbeak eucalyptus co-champs, and the black, willow, swamp chestnut, Shumard, white, and Texas live oaks.

When the famous 528-point Council (Pacific) Madrone blew down in 2000, its throne seemed inadequately filled by a 276-point unknown. Was the Council Madrone an aberration, or was the new champion an undeserving usurper? The new 433-point champion, of Carmel Valley, California, settled that question decisively, although it too has room to grow.

Ever since the even more famous Wye Oak toppled in 2002, the competition to find a new champion white oak has been fierce. As the second tree ever nominated for the National Register of Big Trees, and the undisputed champion ever since, Maryland has always claimed the crown for its state tree. Maryland contributed five nominations while 10 others came from Virginia, Ohio, New York, and the District of Columbia. A white oak in Brunswick County, Virginia, prevailed with 427 points. Its girth is 6 feet slimmer than the Wye Oak, but it is otherwise a majestic and worthy replacement.

After 64 years of a national campaign to find the biggest trees you might think that the chances of finding a bigger specimen of a well known tree are slim, unless the former champion loses life or limb. But for the 2004 Register, sharp-eyed tree lovers nominated 76 trees that beat the 2002 champions in their prime. In addition to those mentioned above, these include such well-known trees as quaking aspen, boxelder, northern catalpa, American holly, chestnut oak, and saguaro.

Other new champs are not as familiar, particularly those near the small end of the spectrum, because, as a species, they are more often on the shrub side of the definition of a tree. About one-third of the new champions (57) score fewer than 100 points, including 15 under 50 points.

The smallest new champ, a fireberry hawthorn at the Morton Arboretum in Lisle, Illinois, just outside Chicago is a skinny 8 inches in circumference, and just 10 feet tall. At 30 points it is just 5 points bigger than the smallest champions on the Register—the northern bayberry and corkwood.

Among the other new small champions you may recognize are the Texas redbud, yellow paloverde, mountain-laurel, and big sagebrush. The most impressive new flyweight is an 88-point huisachillo in Maricopa County,

# NATIONAL CHAMPS OF STATE TREES

In 2002, nearly one-third (15) of states boasted the national champion of their respective official state tree. This relatively high percentage, in most cases, is probably a reflection of

local incentive due to state pride rather than special growing conditions. It is also enhanced by the fact that some states share the crown with a co-champion in another state.

Since 2002, Maryland lost the white oak crown to Virginia, and Michigan lost the eastern white pine to Maine. But Michigan's loss was Maine's gain, and three other states brought home the crown jewels for their state trees: Nevada now proudly boasts the biggest intermountain bristlecone pine, Ohio has its namesake buckeye, and Arizona reclaimed the blue paloverde.

South Dakota still has the king of Black Hills spruce trees but transferred the crown to a different tree. The result of all these changes is that 17 states can now proudly show off the biggest individual of their official state tree.

M WAGGIT OR AMERICAN FORESTS

Lawrenceville, Virginia, now claims the national champion white oak.

Also this time, Virginia and Tennessee have snatched the crowns of seven species that are tree mascots in 15 other states. Fourteen other states also boast the champs for trees that are proclaimed official in another state. To provoke a little friendly competition, take a look at the facing page and the list of the nation's 50 official state trees—and see which state currently claims the champ for that species.—Whit Bronaugh

Arizona, that is more than three times bigger than the previous champ in Hidalgo, Texas.

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Sometimes big-tree enthusiasm gets in the way of an accurate ID, and the masquerading champions must be unceremoniously booted from the Register. State big tree coordinators, especially in Ohio and Kentucky, recently unmasked 12 imposters.

Most were a different but closely related and similar species or variety. For example, the sand live oak and Texas Hercules-club "champions" were actually just regular varieties of live oak and Hercules-club. Identifying trees is not always as simple as field guides convey; even experts are sometimes wrong.

In one case of mistaken identity, the nominator knew a champion when he saw one, he just didn't know Quercus shumardii. A 391-point fenceline tree in Powell County, Kentucky, held the scarlet oak crown for the last nine years until it was correctly identified as the very similar Shumard oak. By then, its expanding girth had increased its score to 430 points, which qualified it as the new champion Shumard oak!

The majority of champion trees, even if they are the biggest in the country and not just the biggest yet found, are only a point or a few ahead of their closest contenders. Sometimes the loss of a limb means the loss of its crown, a fate shared by seven members of the class of 2002. A black oak in Westmoreland County, Virginia, was fatally pruned by Hurricane Isabel, and a southern bayberry near Charles City, Virginia was pruned by its owner(!).

But not all champs that lose points lose their crowns. The biggestsyellow birch, of Deer Isle, Maine, lost 80 points but still looks down on all others of its kind. The biggest Bishop pine of Mendocino County, California, lost 90 points when it was correctly measured above a fork under 4 1/2 feet but is still the king.

The last two years have seen

the demise of 38 champions, mostly from natural causes. Notable were three former greats, each with more than 500 points: the white oak of Wye Mills, Maryland; an eastern cottonwood blown down in Cassia County, Idaho; and a Jeffrey pine in the Sierras Nevada of California that succumbed to a pine beetle infestation after a reign of 20 years.

Other notable losses were the deaths of a 423-point American elm in Karlin, Michigan; a 422-point sugarberry in Society Hill, South Carolina; a 366-point American chestnut in Cicero, Washington; a 352-point sugar maple in Kitzmiller, Maryland; and a 301-point shortleaf pine in Putnam County, Georgia.

The lives of least three national champions were sadly deemed less valuable than human enterprise. A 74-point small-flower tamarisk in Portland, Oregon, was cut down; a 498-point longbeak eucalyptus in Pinal County, Arizona, was burned for sucking too much water from nearby crops; and a 178-point Mexican elder near Tubac, Arizona, was bulldozed for road construction.

Champions were found for 30 of the 98 species that had vacant thrones in 2002, but losses since then means there 87 trees remain champ-less. The thrones of many of these species (see page 48) are hard to fill because the species is tough to identify, confined to extreme southern Texas or Florida, or usually a shrub. Some of the more accessible species you should keep your eye out for are red alder, pin cherry, Jeffrey pine, Virginia pine, and sugarberry.

Of course, the true champion for many trees probably grows in obscurity like a wannabe actor waiting to be discovered. With a field guide, a tape measure, and some time in the woods, you just might find the next big star, and get your name in the credits of the next big tree "movie." AF

Photojournalist Whit Bronaugh lives in Eugene, Oregon.

## FOR THE RECORD

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New Mexico	Flowering Dogw	vood Va., Tenn., N.C.
New York	Two-leaf Pinyon	Pine N.M.
North Carolina	Sugar Maple	Conn.
North Dakota	Longical PINE	Ga.
Ohio	American Elm	Tenn.
Oklahoma	Ohio Buckeye	Ohio
Oregon	Eastern Redbud	Kan.
Pennsylvania	Douglas-fir	Ore., Wash., Calif.
Rhode Island	Eastern Hemlock Red Maple	Tenn.
South Carolina		Tenn.
South Dakota	Cabbage Palmetto	Fla.
Tennessee	Black Hills Spruce Tuliptree	S,D,
Texas	Pecan	Va.
Utah	Blue Spruce	Tenn.
Vermont	Sugar Maple	Utah
Virginia	Flowering D-	Conn.
Washington	Flowering Dogwood Western Hemlock	Va., Tenn., N.C.
West Virginia	Sugar Maple	Wash.
Wisconsin	Sugar Maple	Conn.
Wyoming	Plains Cottonwood	Conn.
	poomining out	Colo.

# Towering TAX

FORGET THE TRADITIONAL DEFINITION OF A TREE. THERE ARE A FEW SPECIES-11 TO BE EXACT-THAT DEFY SUCH A MUNDANE DESCRIPTION.

STORY AND PHOTOS BY WHIT BRONAUGH

ny toddler knows what a tree is, but not all adults, including foresters, agree on how to define them. Most definitions emphasize their woody and perennial nature and a single stem near the ground. Arborists, foresters, dendrologists, and big tree hunters also require such plants to achieve a certain size or else be relegated to the ignominy of a shrub.

There are different standards for separating trees from shrubs, but everyone allows Mother Nature to decide how big a tree can grow. Presumably, a woody, single-stemmed, perennial plant with a crown in the stratosphere would still be just a tree.

Imagine if you lined up all the kinds of North American trees by maximum size. When you stepped back to look, here's what you'd see: a row of trees, hundreds of species long, with sizes ranging from 25points to 1,321 points.

A full third would offer champs that tip the scales at less than 100 points. Within each 100-point range thereafter, the number of champions gradually declines. There are 177 in the 100s, 124 in the 200s, 95 in the 300s, 56 in the 400s, and 23 in the 500s.

We've now covered more than 98 percent of all North American trees but we're not yet halfway through the range of possible sizes. On our imaginary line of trees, from the 25-point northern bayberry to the 597-point noble fir, an imaginary squirrel could easily hop from one tree to the next, with never more than a 15-point gap to cross. Our line gets a little thin in the 600s with only six trees, but they are still fairly evenly spaced, with the largest gap only 26 points wide. But now we are left with only seven trees to cover a span of 622 points!

Perhaps foresters someday will come up with a definition of megatree based on volume, the ultimate but often elusive measure of size. Or maybe there will be separate megatree criteria for height, circumference, and crown spread. For now, we'll use the arbitrary limit of 650 points, which separates the 11 biggest champion trees in America. Here they are, in order of increasing astonishment.

#### #11 SUGAR PINE

This is the largest pine in the world and, fittingly, it has the largest pine cones. Even if they miss your head, a 2-foot pine cone dropping nearby can give you a Chicken Little moment. The champion sugar pine just reaches megatree size with 659 points. Although much of the surrounding area has been logged, the biggest sugar pine is currently protected in a 10-acre grove of old-growth high above the North Fork of the Stanislaus River in the Sierras of California. You can see and even walk from one side to the other through an old fire scar at the base. It's sobering to pause inside and suddenly realize that the equivalent weight of 50 full-size pickups is balanced directly above your head, with much of its original support missing.

#### #10 MONTEREY CYPRESS

In the natural world, this species is restricted to the coast of Monterey Bay where it is often tortured, twisted, and flattened by salt-laden onshore winds. Only where it has been planted and protected farther inland has its





megatree potential been realized. The 668-point champion grows beside a country road near Pescadero, California, about 5 miles from the dwarfing coastal winds but still within the protective fog belt, which promotes rapid growth by reducing water loss. The cypress' short, massive trunk stands more than 14 feet thick before branching off in 20 different directions. The biggest Monterey cypress is also notable for having a 116-foot crown spread, second among conifers after the 130-foot crown of the Torrey pine.

# #9 CALIFORNIA-LAUREL

It is almost a prerequisite that to reach megatree size a tree must be a conifer. The 674-point champion California-laurel is the only angiosperm to break this rule, although its complex architecture hints that it may have broken the multi-stem rule long ago. But its history of growth is now buried within a trunk 14 feet thick, which with a 119-foot spread and tree-sized mossy limbs, makes for one jaw-dropping megatree.

# #8 PORT-ORFORD-CEDAR

A small species range centered in the Siskiyou Mountains of Oregon and California, a quality of wood once deemed incomparable, and an introduced root fungus have conspired to nearly eliminate the Port-Orford-cedar from the megatree category. This species often tops out above 200 feet and stumps have been found measuring 17 feet across, making its true potential well over 800 points! The current champion, in Oregon's Coquille River Valley,

is a "mere" 691 points, with a 12-foot thick trunk and a 229-foot height. Since its closest challenger scores only 564 points, the champion Port-Orford-cedar may be the species' last living megatree, itself a shadow of their former greatness.

#### #7 COMMON BALDCYPRESS

The common baldcypress is the only megatree

east of the Cascades and Sierras, and one of only two that score in the 700s. Some might argue that the champ, which grows in a southern Louisiana swamp, is more monster than megatree because of its double trunk and extreme flare. Only 83 feet tall, the Cat Island baldcypress has a nearly 54-foot circumference that inflates its score to a whopping 748 points. The next largest baldcypress, the old-growth Senator of Longwood, Florida, has 557 points and probably the greatest volume (4217 cubic feet) of any tree in the East. The Senator has little basal flare, so it

seems likely that there were baldcypress megatrees before logging. Old-growth baldcypresses have been accurately aged to at least 1,600 years but unless restraint and foresight survive the comings and

goings of empires, we may never know their true megatree potential.

# #6 BLUEGUM EUCALYPTUS

In Australia, bluegum eucalyptus is known to grow more than 300 feet tall. America's national champ, near Petrolia, California, is less than half that height because it grows in a fencerow instead of a forest. But its 48-foot girth helps give it an impressive 759 points. Bluegum eucalyptus was introduced into California in 1856. Today, although it's valued as a







windbreak and ornamental tree, bluegum is considered a major invasive exotic by the California Invasive Plant Council, and state and national parks seek to remove it from natural areas. The champion bluegum may be the biggest naturalized tree and the biggest hardwood in America, but for many, it's also the biggest weed.

We now enter the realm of the undisputed megatrees. The following five species not only routinely surpass 650 points, they are the only species represented by champions boasting more than 800 points.

# #5 COAST DOUGLAS-FIR

Unfortunately for megatree lovers, old-growth Douglas-fir forests were loved as much for their board-feet as their skyward view, meaning only a tiny fraction of these living treasures remain and the greatest specimens are gone. Had it been otherwise, the "world's tallest trees" title would be held jointly by the coast Doug-fir and the also cutover Australian

mountain ash (Eucalyptus regnans), both of which were known to exceed 400 feet. The biggest coast Douglas-fir ever measured in all dimensions was the Mineral Tree, which grew southwest of Mount Rainier and fell in 1930 when it was 1,020 years old. At one time it was 393 feet tall, more than 15 feet in diameter, and would have scored about 991 points!

The current co-champions, topping out at a little over 800 points each, have a bit of catching up to do, but they are still quite impressive. The Queets Fir (809 points) in the Olympic rainforest of Washington has a broken top, giving it a height of only 200 feet, but it is six inches thicker than the Mineral Tree. The 829-point Ol' Jed Douglas-fir in Jedediah Smith Redwoods State Park, California, is 2 feet slimmer but tops out at a lofty 301 feet

## #4 SITKA SPRUCE

Favored for airplane construction because of their incomparable strength-to-weight ratio, the accessi-

stern Red Cedar

TRAVERSING

THE RANGE IN

DEGREES OF

AMAZEMENT:

FROM LEFT,

THE 748-POINT

CAT ISLAND

BALDCYPRESS,

THE 668-POINT

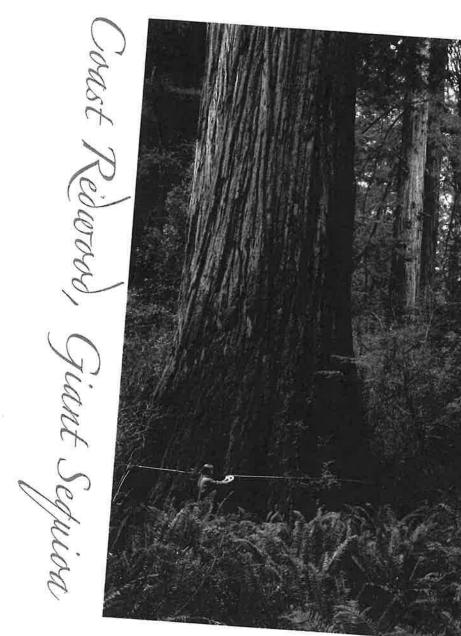
MONTEREY

CPYRESS, AND

THE 920-POINT

WESTERN

REDCEDAR.





ble Sitka spruce of the Pacific Northwest were heavily logged to support both world war efforts, costing the tree a chance to survive as old-growth across most of its range. A far more friendly battle took place in the 1980s between Oregon and Washington over who had the bigger specimen. In the end the two states declared a peaceful draw, and both trees remain on the Register today. Washington's cochamp, near Quinault Lake in the Olympic rainforest, has a diameter of nearly 18 feet, boosting its point total to 883. The Oregon tree, near Seaside, is about a foot slimmer but, at a height of 204 feet, is 13 feet taller with 856 points. Together, these and other remaining megatree spruces leave no doubt that the Sitka reigns as the world's biggest spruce and the second biggest member of the pine family after the historically bigger coast Douglas-fir.

# #3 WESTERN REDCEDAR

Now we enter the 900-point range, a category occu-

pied solely by another denizen of the Pacific Northwest, the western redcedar. Western redcedars' resistence to rot—which made the trees ideal for canoes, totem poles, and roofing-gives them long lives and the chance to reach goliath proportions. This durability in contact with the ground is offset by the crown's vulnerability to dieback from drought. Old trees have endured many dry years, each evidenced by a separate, usually dead, top. But, while living, the crowns all fed the continuously growing main stem to create the megatrees of today. If not for a grossly underestimated height, the biggest western redcedar would have reigned continuously since it was crowned in 1941. The 920point champion grows in Washington on the other side of Quinault Lake from the co-champ Sitka spruce. Now considered 174 feet tall (instead of 1941's guess of 100 feet), it has a tape-stretching 61foot girth and is, by volume, possibly the world's biggest tree outside of California. Only time will tell



diameter of nearly 24 feet, grows along Mill Creek in Jedediah Smith Redwoods State Park in California. It's the biggest coast redwood by volume, at 36,890 cubic feet. Only 14 trees in the world, all giant sequoias, have greater volumes, although, according to megatree scientist, artist, and measurer extraordinare Robert Van Pelt, at least two logged coast redwoods had volumes that actually beat the General Sherman giant sequoia. Just across the creek from the Del Norte Titan grows the co-champion Lost Monarch, which has a sequoia-sized diameter of 25 feet and is the tallest champion in the country, soaring to 321 feet-15 feet higher than the Statue of Liberty. These impressive dimensions give the Lost Monarch the largest point total-1,290-of the three co-champions and place it just 31 points shy of the General Sherman giant sequoia. The third co-champ is the Sir Issac Newton tree, a soaring 311 feet tall, with a diameter of 23 feet, and a megatree total of 1,203 points.

#1 GIANT SEQUOIA

All rise. Here is the champion of champions, the redwood might someday rack up more points, the General Sherman giant sequoia is 50 percent bigger by volume than any redwood alive today. And, if that's not impressive enough, nearly 12 percent bigger than the next biggest giant sequoia. From our normal eye-level perspective up close to the base, we are most impressed by a big tree's huge lower trunk and, enhanced by perspective, the near-van-

ishing point of its uppermost twig. But the most amazing fact of General Sherman's size is how much of it is up where the birds fly. Even if you discount everything below the 150-foot level, where the trunk is still 16 feet in diameter, General Sherman scores 754 points and

If you could place the General Sherman on one side of a seesaw, it would take a town of more than 60,000 people on the other side to raise it.

currently defines the upper size limit for a megatree. Any single-stemmed tree that is bigger than General Sherman must be either a fossil, a memory, or on a smaller planet. AF

Whit Bronaugh writes about and admires megatrees from his home in Eugene, Oregon.

king of kings: 1,312 points, 261 feet tall, with a trunk more than 85 feet around. Although a coast

still easily qualifies as a megatree! This most mega of megatrees has dropped 400-point branches that were more than 6 feet in diameter and 140 feet long.

Given that, we now know how Mother Nature

THE 1,223-

POINT DEL

NORTE TITAN

COAST

REDWOOD

(LEFT) AND

THE GIANT

OF GIANTS.

AT 1,312 POINTS

THE GENERAL

SHERMAN

GIANT

SEQUOIA.

INSET: FEELING

SMALL NEXT

TO SEASIDE,

OREGON'S

856-POINT

CHAMPION

SITKA SPRUCE.

enough to add significantly to its already great stature.

whether its surviving

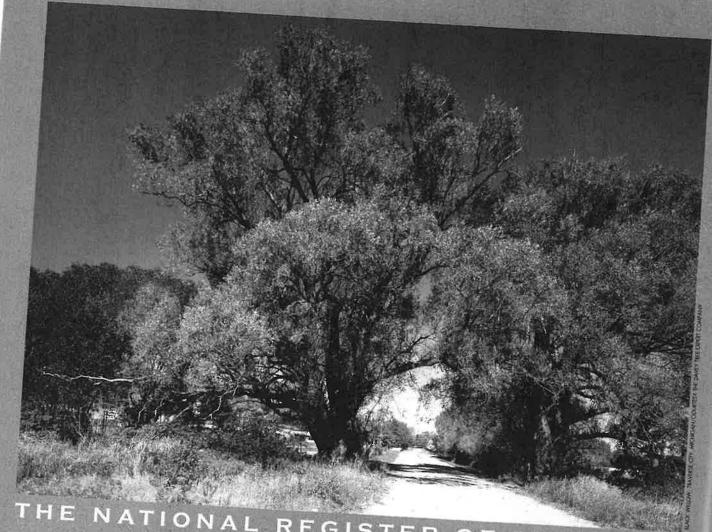
strip of cambium, just 2

feet wide, will live long

#### #2 COAST REDWOOD

Coast redwoods, and the giant sequoias that follow, are big-I mean really big-even compared to other megatrees. A huge gap of 359 points separates the biggest western redcedar from the biggest coast redwood. Perhaps they deserve to be called gigatrees. Redwood forests have so much biomass you almost feel lighter as you walk, antlike, below their gravitational pull.

There are three co-champion coast redwoods, all discovered by members of the megatree team of Ron Hildebrant, Michael Taylor, and Steve Sillett. The 1,223-point Del Norte Titan, 307 feet tall with a



# THE NATIONAL REGISTER OF BIG TREES 2004-2005

knew I'd need my "persuasive big tree hat" when I received this question from a reporter: "So, what's the big deal with big trees? Who cares?" In another recent call, an editor from a major consumer publication insisted big trees equal old trees—and that a tree's value is in its age. We love 'em, but big trees are misunderstood. Big does not necessarily mean old—or beautiful, for that matter. And a champion tree is a champion not because it has impressive bloodlines—and therefore produces the perfect tree—but because it exists in an ideal habitat, one

Those of us who work to promote the appreciation for and protection of these national champs still have a lot of work to do to explain the value of big trees to both urban and rural areas. Our national champions are not only the biggest of their kind, they're examples of the ecological value trees provide—they clean air and water; prevent soil eroision, especially along streamsides; and sequester carbon. And bigger does it better.

And beyond their economically savvy value, national champions are just plain cool. A tree identified as the largest of its species is a launching point for the imagination—just how tall is it? How many arms to encircle it? What makes this the ideal spot? How big is the closest contender? We have spent a lot of time over the past two years improving our web site (www.americanforests.org/resources/bigtrees) to make it more helpful and more informative for citizens, Big Tree hunters, and our state coordinators. Big Trees is consistently our most visited web page, and I welcome your comments and suggestions for continuing to improve it.

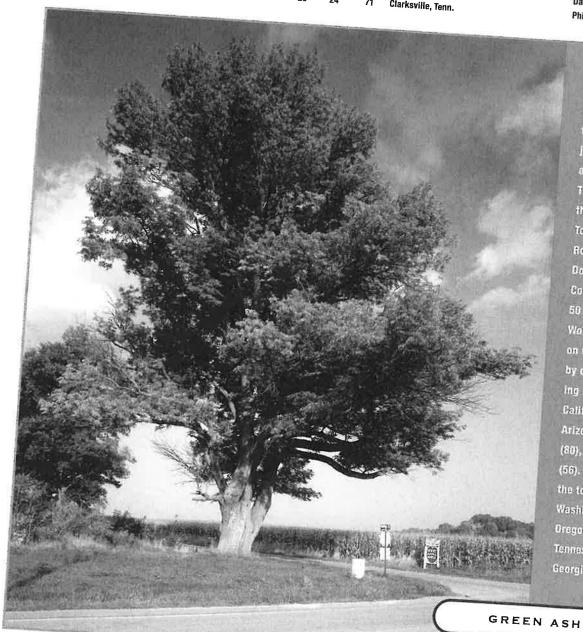
Recent improvements, along with the daily upkeep of the program, could not have been possible without the assistance of Patrick Mannion, a fellow in American Forests' Global ReLeaf program. Pat came from England to work at a nonprofit, and we hope his time with us caused him to look at the trees around London in a slightly different way. His presence is still missed. Robert W. Simons of Florida also deserves special thanks for jumping in at the last minute to help with final tallying for the Florida list.

Each issue of the Register is a challenge—a source of new surprises, some sorrows, and always endless fascination. I hope the trees you see pictured here and their locations inspire you to hunt for new champs and to help us remeasure the old. Join us in continuing to champion America's biggest trees.

SPECIES/MEASUREMENT	CIRC	harean.	CE"	HEIGHT	SP	READ	TOTAL	Ollers		
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Blackbrush, Acacia rigidula, 1998*										No. 40 // Actions
DIAUKUTUSII, Acacia rigidula 1000+			16	26		29	49	Case n		
Long-spine, Acacia macracantha 20	N4		14	27		31	49	Casa Grande, Ariz.		14220
AILANTHUS			32	24		46	68	Glendale, Ariz.		William Kinnison
Tree-of-heaven, Ailanthus altissima,							00	Monroe, Fla.		Ken Morrow
ALASKA-CEDAR	998∆		248	67	6					Joseph Nemec
Chamaecvnarie neeth				٠,	0	4 ;	331	Hamilton, Tenn.		
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Arizona			102	129	27	7 5	88	Olympic NP, Wash.		-
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Wountain, Alnus tenuifolia 1000		2	6	42	22	70		- Soundiness Park	Anhautt	- Seatt of M, David
oduside, AINUS maritima 1007		94	1	71		74		Dusiness Park	Achovitta to a	- Davie
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Speckled, Alnus rugosa, 1984		33			12	42	La	(e Accotink, Springfield		Slim Stillman
White, Alnus rhombifolia, 2000		38		30 se	39	73	Ma	ury Island, King Co., Wa	4, Va.	Richard Salzer
All Tues		149		66	56	118	St.	Clair Co., Mich.	ash.	Mike Lee
ALLTHORN		170		92	40	251	Poli	Co., Ore.		
Koeberlinia spinosa, 2003							-24	VID.		W. Brennan, P. Thompson, R. Kilgore Maynard Drawson
ALVARADOA		27	2	3 2	21	55	b.c.	- ***		Drawson
Mexican, Alvaradoa amorphoides, 1993						uu	БОУС	e Thompson Arboretun	n, Ariz.	Data
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Cordia boissieri, 2002				'	9	42	Mian	i, Fla.		
A N. 4. 0		76								John C. Cordy & Jim Eggert
ANACUA		10	25	38	3	111	Camir	n Real Viet		, a om Eggert
Ehretia anacua, 2003								o Real Viejo, Mercedes	, Texas	William MacWhorter
ANISE-TREE		146	42	52						·····ani wacwhorter
Florida, Illicium floridanum 1004					•	LUI	victori	a Co., Texas		E .
Yellow, Illicium parviflorum, 1993		15	29	20						Bob McVey
APPLE		8	18	20		49	Prairie	Cr. and County Dirt Rd., F. Lake George De-		
Common Motor			10	13		28 (	Ocala N	F, Lake George Ranger	, Perry Co., Ala.	Thomas Wilson
Common, <i>Malus sylvestris</i> , 1993∆		00						acorge nanger	District, Fla.	Jeff Overby & Ilke Toklu
Oregon crab, Malus fusca, 1989*		83	44	49	23	39 R	edford	Tienca Con Co.		a like lokiu
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Sweet crab, Malus coronaria, 1976	118	j ,	30	61	158		esterto	vn, Md.		Paul W. Thompson
ARBORVITAE	70		37		160	Mo	nroe Co	., Ga.		Eleanor P. Colston
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Berlandier, <i>Fraxinus berlandierana</i> , 2003 Black, <i>Fraxinus sie</i>					. •	. 01 (5	smouth	, Uhio	J	immy and Sandra Mock
TOMINUS III III 1004	252	48	1	2	240				93A 9B	rian P. Riley
nue, Fraxinus quadrangulata occa-	99	155			318	Los F	resnos	Texas		
- Guila, Fraxinus Caroliniana 4000	137	145	1,10,00	. 8	281	Adria	n, Mich		Br	ian Sichel
hihuahua, <i>Fraxinus papillosa,</i> 2003	56	58	175	. 8	300	McLea	an III.		R.	W. Smith & Paul W. Thompson
agant, Fraxinus cuspidata, 2003	33		2		20			Park, Fla.	Ja	y C. Hayek
odding, Fravinus and 1903	33	49	17	8 2	86	Corona	ado NF	n, 1 id. Ariz	Roi	bert W. Simons & n.
odding, Fraxinus gooddingii, 1995		26	26		66	Mohave	e Co o	ariz. Ork, Ariz.	Day	bert W. Simons & Daniel B. Ward vid & Paul Thornburg
Taxinus pennsulvanias	25 250	30	22	6	51	Corona	- 00. P	erk, Ariz.	Mik	e Hallen
55) I I AAIIIUS Oregaii 2000	259	95	95	37		Case n	o w	Ariz,		
well, Fraxinus anomala	17	27	26	5	á J	Cass Co	u., Micl		JUS	h Tewksbury
	58	33	21	96		Jniv. of	Arizon	3, Ariz.	D. S	teen, S. Heaney, E.B. Ehrle
PKIII, FFAXINUS PROFUMA - DATE	284	65	66	366		rescott	I NF, Ar	z,	LIDD	y Davidson
rollar, rraxinus anomala un	188	150	77		100	auvie Is	sland, (	)re,	David	d Thornburg & Harry Untiedt
	52	31	15	357	В	ig Oak	Tree SF	Mo	Liuon	Boge & Robert Heilman
petal, Fraxinus dinotale none	76	72		87	Hi	ghway	141, 0	Dalares Div.	Druce	Palmer
" I danies velutina noo-	39	32	67	165			UU., 163	as		Urbina
e, Fraxinus americana, 1983	189		34	80	La	ke Co.,	Calif		Billy V	
PEN	104	90	85	300	Fos	ssil Spr	inge w	A Ari-	Frank	T. Callahan
the IN		95	82	420	Mo	ntebelle	go IV go IV	n, AIIZ.	Jerry I	lash & Mike Hallen
oth, <i>Populus grandidentata</i> , 2001*							~ .162(5	urant, Palisades, N.Y.	E Arth	ir Belcher
an, ropulus grandidentata, 1984		70	78	248					·	Solelial
TOO MAKE DESTRIE	05 1	32	67	254	nav	idson, 7 quette,	ienn.		•	auffman
			-	~4	Mor					

SPECIES/A	EASUREMENT	ÇIRÇIIN	FERRENCE	STILL ST	-	U S	No.			
Quaking, Popule	o to the second				erent	SP	READ' TO	AL POINTS L	OCATION	William Control of the Control of th
AVOCAD	s tremuloides, 2001			120	136		44 26		Means Flag	ROMINATOR
Persea american	2002						44 26	67 Umatilla NF, Ore.		Pin o n
BACCHA	a, 2003∆		1	85	72		59 27	•		Bill Collar
Eastern, Bacchar	is halimifolia, 2001					•	9 27	2 Mission at San Juan	Capistrano, Calif.	
BALDCY	s manimitolia, 2001		1	14	21		9 41		,	Art Cowley & Camille Newton
Common. Taxorilla	PRESS					,	9 40	) Lincoln Co., Ga.		_
Montezuma Tava	n distichum var. distichu	um, 2001	64	4	83					Doug & Jess Riddle
BARRETA	num Mucronatum 2002	3	28		68	88		Ioiuiiu, Ld.		
Helietta parvifolia,	400-				50	89	377	San Benito, Cameron C	O., Texas	Jeff Hunt & Desmond Clapp
BASSUL-	1989		18	3	34	-				Sue Griffin
BASSWO (	) D *				34	25	58	Lower Rio Grande Valley	NWR Palmui	
American, <i>Tilia am</i> Carolina <i>Tilia</i> asse	ricana, 1993		292		70	40-		,	interior, lexas	Terry Rossignol
Carolina, <i>Tilia carol</i> Carolina, <i>Tilia carol</i>	iniana, 2001*		124		78 07	100	395	Montgomery County, Pa.		
White, Tilia heteropi	niana, 2001*		155		75	60	246	Caddo Parish, La.		Sherman Perkins & Halfred Wertz
BAYBERR	yiia, 1997		223		,, 16	57	244	East Feliciana Parish, La	_	ven jeane
Northern Musica	<b>(</b> 3:12			•		57	353	Pisgah NF, N.C.	•	Brain Chandler
Northern, Myrica per Odorless, Myrica in-	<i>sylvanica</i> , 1999		10	1	9	40				C. Woodard, M. Davie, W. Blozan
Odorless, Myrica inoc Pacific, Myrica califo	ora, 1994		33	1:	3 R	10	25	Jockey's Ridge SP, N.C.		
Southern, Myrica ceri	mca, 2003		66	34		23	57	Bellingrath Gardens, Theo		Sid Shearin
Southern, Myrica ceris	era, 1994*		76	20		39 30		. Janie Greek Redwoode C	D Calle	Richard Salzer
Southern, Myrica cerit	erd, 1994*		72	25		38 36		beintey Plantation, Charles	n Clar ve	Robert Van Pelt
BAYCEDAR	-ra, 1994*		68	26		36 32		control Plantation, Charles	City II	Richard Salzer
Suriana maritima, 1995				_3			102	Berkley Plantation, Charles	City II	lichard Salzer
BEECH			10	12	-					ichard Salzer
	PE-9500			12	- 4	3	28 B	ig Pine Key, Fla.		
American, Fagus grand. BIRCH	folia, 1994	2	79	115	40	_			V	ncent P. Condon & William G. Miller
Alaska por o				119	13	3	429 Lo	othian, Md.		
Alaska ppr., <i>Betula papy</i> Alaska ppr., <i>Betula pany</i>	rifera var. neoalaskana	. 1993*	72						Ga	ry Heinz
		1993* 4	, <u>,</u> 56	64	21		141 Ni	kiski, Alaska		
Gray, Betula populifolia, Kenai, Betula paggif	1999		i9	74 80	33			kiski, Alaska		n Miller
Kenai, Betula papyrifera Mountain paper Retula	ar. kenaica, 1994			47	32		147 Sci	hoharie, N.Y.		Miller
Mountain paper, Betula p Nrthwstrn paper, Betula p	apyrifera var. cordifolia	, 1995 11	2	67	19		02 Hop	oe, Alaska		f Breglia
Nrthwstrn paper, Betula pa Nrthwstrn paper, Betula pa	pyrifera var. subcordata	, 1975*4	6	66	80		99 Slee	eping Bear Dunes, Leelana am Rivo- O	Ron U Mich	Miller
Nrthwstrn paper, Betula pa Paper, Betula papyrifera v. Paper, Betula papyrifera v.	pyritera var. subcordata	1999*46	3	65	30 32			am niver, ure.	-3.33.33	ood B. Ehrle & John Spencer
Paper, Betula papyrifera vi	n. papyrifera, 1991*	220		07	76	11		's Canyon NRA, Idaho	rian	K I. Callahan
		222		07	76	34 34	e Blac	k Lake, Cheboygan Co. Mi	ch.	Johnson & M. Newell
Roundleaf, Betula uher 201	13	208	10	)5	112	34	- , 0111	Laux Barques, Mich.	.1000	rt Stein
Sweet, Betula lenta, 1980		34	4	19	15	87		ence Co., Tenn.	John	J. Chorzel
Water, Betula occidentatio	1973	182	7	8	80	280	Jenre	rson NF, Va.	Dan a	David Shires
wsum paper, Betula panyrif.	Tra tra-	111	5	3	42	175	Wew	Boston, N.H.	Philip	hrauder Harvell
gnamensi	8. 2003		70	)	77	261	Rollin	wa Co., Ore.	Mayns	rd Drawson
BLACK-MANG	ROVE	200	48	3	91	271		gham, Wash.	Robert	Van Pelt
Avicennia germinans, 2003	(OVE					-	DOG! I	sle, Maine		G. Fisk
BLACKBEAD		123	54	6	60	195	Fue	ada assa a		1.15K
Catclaw, Pithecellohium una	is-cati 100.						-vergla	ides NP, Fla.	Thomas	J. Smith
The state of the s		150	72	4	9	234	C			v. amim
additupe, rimecellohium -	TI SCHOOLS IN	171	50	64		237	Sarasot	a, Fla.	latine	1.0.
milliani all	ladalungga, 1978*	11	16	16		31	MCAIlen	, Hidalgo Co., Texas	loo Idel	J. Schilling
CVHAW	pense, 1995*	9	19	16		32	National	e Key, Fla.	Joe Idek R.W. Sim	
Viburnum prunifolium 1986*							Manoual	Key Deer Refuge, Fla.	T Ann III	ons & M.L. Eletz
Viburnum prunifolium, 1991*		64	24	33		96			· Ann W	lliams & Vincent P. Condon
susty, Viburnum rufidulum, 190	7	64	24	28			Doc- Was	hington Birthplace NM, Wal	kefield. Va Diakan -	-
LADDERNUT		47	30	23			Children Strategy	*4.	_	aizer
merican, Staphylea trifolia 100	re.						Knox Co.,	ienn.	Richard S Jim Corte	aizer
erra, Staphylea bolanderi. 1981		19	36	37		<b>i</b> 4	Ma.		oun colle	SC .
LOLLY 1991	•	14	28	12			Macomb (	Co., Mich.	LI taras	
ngleaf, <i>Guapira discolor</i> , 1993							Fresno Co.	, Calif.	n.J. Nett &	Paul W. Thompson
LUEBLOSSOM		54	21	11	* 7		_		Frank T. Ca	Hahan
In-murble C				• •	78	o L	.ignumvita	e Key Botanical State Park	t. Fla	
invite, Geanothine it	75, 1976	32	41	20	_				, Fla. Charlotte N	eidhauk
LUEWOOD		,,,								
ue-myrtle, <i>Ceanothus thyrsiflor</i> LUEWOOD ndalia hookeri, 1989		,,,	71	20	78	С	urry Co., O	lre.		
LUEWOOD  ndalia hookeri, 1989	7	_	10	26	78 114		urry Co., O In Juan, Te		Frank T. Cal	ahan .

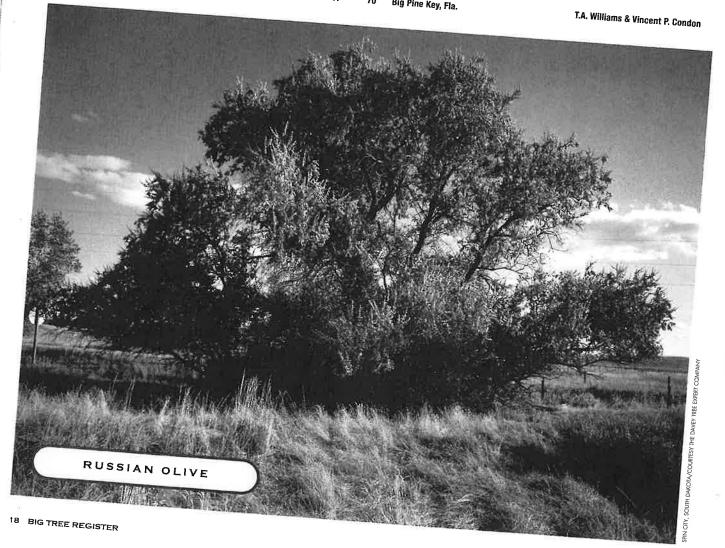
BOXELDER		100	SPREA	3,000	L POINTS LOCATION	TO PROPERTY.
Acer negundo, 2003 BUCCANEER-PAIM	230	120	84	37	1 Monrovia, Md.	KOMINATOR
Pseudophoenix sargentii, 1997 BUCIDA Bucida buceras, 1997∆	26	25	8	53	Elliott Key, Biscayne NP, Fla.	Kevin Moore Carol L. Lippincott
BUCKEYE Bottlebrush, Aesculus parviflora, 1993	139	<del>-</del> 50	48	201	Charles Deering Estate, Fla.	J. Valenta, A. Lupus, R. Hami
Cantornia, Aesculus californica, 2001 Ohio, Aesculus glabra var. glabra, 2003 Painted, Aesculus sylvatica, 1999 Red, Aesculus pavia, 1984* exas, Aesculus glabra var. arguta, 1986 ellow, Aesculus octandra, 1995 BUCKTHORN	34 166 140 18 91 95 51	14 47 77 34 64 58 30	20 59 64 16 52 48 24	53 228 233 56 168 165 87 378	Virginia Beach, Va. Santa Cruz Co., Calif. Greenwich, Ohio. Mountain Park, Fulton Co., Ga. Kalamazoo Co., Mich. Roanoke, Va. Harper, Texas Gabes Mount. Tr., Great Smoky Mtns. NP, Tenn.	Richard Salzer Jeff Reimer & Walter Mark Brian P. Riley Jess & Doug Riddle Paul W. Thompson William S. Hubard Bob & Lou Ellen O'Kennon
llifornia, <i>Rhamnus californica</i> , 1976* lifornia, <i>Rhamnus californica</i> , 2003* rolina, <i>Rhamnus caroliniana</i> , 2001*	24 23 40	30 23 25	25 39 24		Sunol Regional Wilderness, Alameda Co., Calif. Prescott NF, Ariz. Clarksville, Tenn.	Will Blozan & Michael Davie  E. Lagel  David & Judy Thornburg  Phil & Claudette Brown



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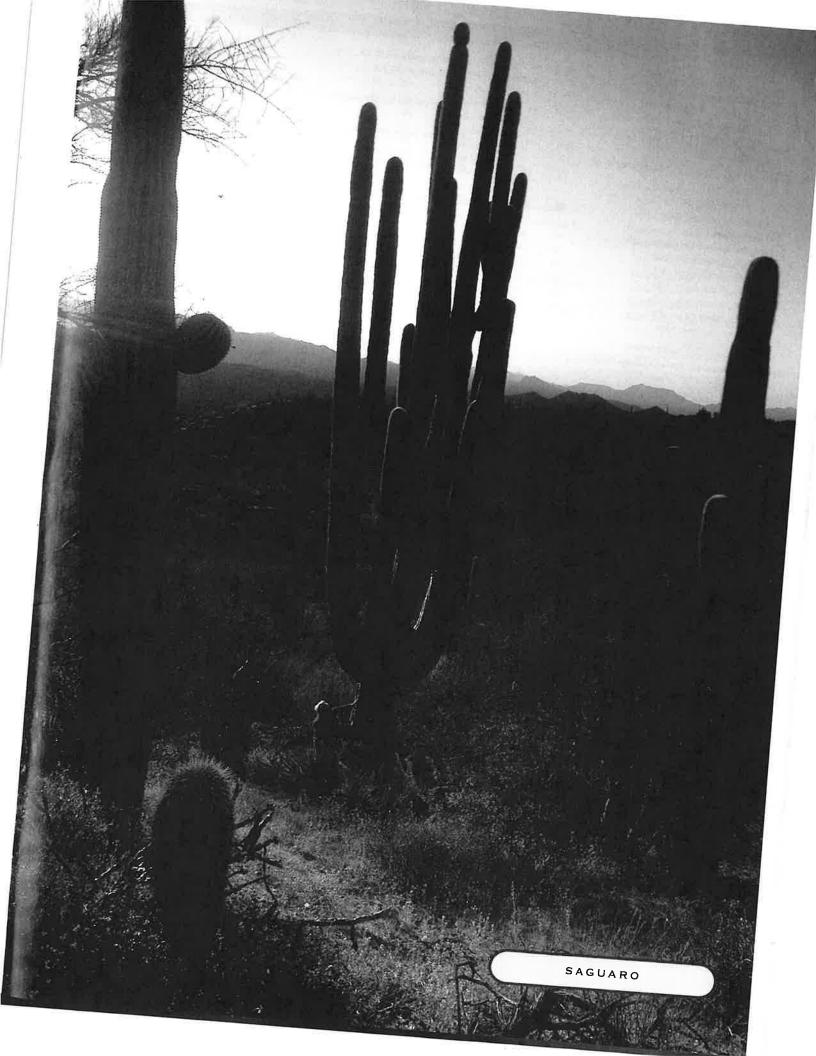
ichigan is home to 50 trees, including the jaw-dropping green Topash and Townline Dowagiac in Cass County. Its impressive 50 champs puts the (56). Rounding out Tennessee (33), and

SPECIES/MEASUREMENT	CIRCUMFEBENCE	HEIG					
Carolina, <i>Rhamnus caroliniana</i> , 1974*	23.5	- 1211		SPREAM	P TOT	AL POINTS LOCATION	
Cascara, Rhamnus purshiana, 1977*	9	41	27	23			NOMINATOR
Gastal a, Knamnus purshiana 1000+		99	37	50	7	duiebutg, Va.	D
European, Rhamnus cathartica, 1972∆	10	9	27	43	14	andside, ole.	Richard Salzer
Glossy, <i>Rhamnus frangula</i> , 1991∆	4	5	61	65	147	Gradian IAL, OLG.	Steve Ferguson
Hollyleaf, Rhamnus crocea, 1999	2	0	40	25	122 66	Special Michols Arboretum Ann 4-1	Ray Cross
BUCKWHEAT-TREE	20	;	26	44	****	marriage. Hinomfield true	
Cliftonia monophylla, 2000					63	Greenfield, Calif.	raul W. Inompson
BUFFALOBERRY	49	5	7	38	44-		Frank T. Callahan & Art Cowley
Silver, Shepherdia argentea, 1975				00	115	Wakulla Co., Fla.	B
BUMELIA	78	2:	,	20			David Roddenberry
Buckthorn Purell			•	20	105	Malheur Co., Ore.	
Buckthorn, Bumelia lycioides, 2001 Gum. Bumelia laccori	48	31					Frank T. Callahan
Gum, <i>Bumelia lanuginosa</i> , 1991 Saffron-nlum, <i>Bumelia</i>	93	80		29	86	Shelby Park, Nashville, Tenn.	
Saffron-plum, <i>Bumelia celastrina</i> , 1991 Tough, <i>Bumelia tenax</i> , 1987	55	30	,	66	190	Hobertson Co., Texas	Mark S. Hackney
BURNING D	41	41		32	93	Lower Rio Grande NWR Texas	E. G. Marsh
BURNINGBUSH		71	2	8	89	Amelia Island SRA, Fla.	William MacWhorter
Eastern, Euonymus atropurpureus, 2002 BUSTIC	90	40	_				Buford Pruitt Jr.
		40	34	<b>3</b> 1	39	Norwood Hills Country Club, St. Louis, Mo.	
Willow, Dipholis salicifolia, 1994	72	_				Tama y Club, St. Louis, Mo.	Lorri Grueber
BUTTERNUT	12	57	29	1	36	Barnacle State Historical Site, Dade Co., Fla	
Jugians cinerea, 2003	20=					ristorical Site, Dade Co., Fla	John T. Valente & Rodger Hammer
BUTTON-MANGROVE	265	80	86	36	i7 (	Chester, Conn.	a rouger nammer
erectus, 1993	-					conn.	Edward A. Richardson
BUTTONBUSH	174	51	68	24.	2 P:	alm Beach, Fla.	···onarusoji
Cephalanthus occidentalis, 1999						Beacil, Fla.	K. Van der Hulse & D. L. Lockhart
BYRSONIMA	60	26	38	96	ì p.	itto	So Huise & D. L. Lockhart
Key, Byrsonima lucida, 1995*					, Di	ittonwillow, Calif.	Frank T. Callahan
	31	35	17	70	D.		
				70	ធាច	Pine Key, Fla.	TA was
		1	-				T.A. Williams & Vincent P. Condon



SPECIES/MEASUREMENT	V Colonia				1		2		
	C!	CUMFER	ENCE"	HEIGHT	SPR	EAO' TOT	AL POINTS		
Key, Byrsonima lucida, 1995*			24	-		-	AL PUINTS	LOCATION	
CAESALPINIA			31	35	j 1	7 7	0 Monroe, Fla.	77	NOMINATOR
Mexican, <i>Caesalpinia mexicana,</i> CAJEPUT-TREE	2003		48	45			,		Eloise Boon & Vincent P. Condon
Melaleuca quinquenervia, 1992∆				40	60	108	Hidalgo Co., Texas	s	r. Condon
CALIFORNIA-LAI			231	62	28				Joe ideker
Umbellularia californica, 2003	JREL				- 40	300	Near Ft. Denaud, H	lendry Co., Fla	
CAMPHORITEE			536	108	119	874			Jeff Mangun
Cinnamomum camphora, 1992						674	San Francisco, Cali	if.	P
CANELLA			422	67	103	515	<b>D</b>		Dave Grabner & Leo Martin
Canella winterana, 1998 😁						013	Darby, Fla.		Sulvia V
CANOTIA			25	30	19	60	Crondit		Sylvia Young
Canotia holocantha, 2001*						_	Crocodile Lake NWR	, Fla.	Joseph Nemec
Canotia holocantha, 2003* CAPER			46 40	27	21	78	Yavapai Co., Ariz.		-cochi Hemec
Jamaica Canan		•	49	26	20	80	Prescott NF, Ariz.		Mike Hallen
Jamaica, Capparis cynophallophora, 1	997	2	5	4.			, A112.		David Thornburg & Harry Untiedt
ONSUARINA		-	J	15	20	45	Lee Co., Fla.		anarry Untiedt
Horsetail, <i>Casuarina equisetifolia</i> , 1968 CATALPA	<b>3</b> Δ	207	7	Pn.					David Fox & Dee Slinkard
Northern, Catalpa speciosa, 2003				89	56	310 0	llowalo, Maui, Hawaii		Sankara
Southern, Catalpa bignonioides, 2003		285	,	31 ,					L.W. Bryan
CATCLAW		271		٠.	•	387 K	night Township, Ind.		
Gregg, Acacia greggii, 1971*				•	,00	376 Ya	lobusha Co., Miss.		Thomas E. Westfall
aregg, Acacia greggii 2000+		77	49	9 4	6 1	20 -			J. Fergusion, J. Edwards, G. Byrd
nuemer, Acacia roemeriana gono		98	28		, ,	38 Rei 36 livs	d Rock, N. Mex.		
Maria Wrightii, 1986		61	22	24		-	alde, Texas		Samuel Lamb G.C. Carlile
CERCOCARPUS		72	36	42		9 Uva	Alamo, San Antonio, i Ide Co., Texas	Texas	Richard Salzer
Alderleaf, Cercocarpus montanus, 1999		26					ou, lexas		Virgil Helm
Birchleaf, <i>Cercocarpus betuloides</i> , 1972 Catalina, <i>Cercocarpus traskiae</i> , 2003 Curlleaf, <i>Cercocarpus traskiae</i> , 2003		44	21	11	50	) Neff	's Canvon Wassets &		
our Gucarnite ladit-tt		30	34 18	29	85		's Canyon, Wasatch-Ca rai Point, Ore.		Tony Dietz
or coolings brevitionic 1000		78	21	25 31	54	Catal	ina Island Conservance	CV Calif	Frank T. Callahan
* CHASTETREE		32	20	17	107 56		' VICER Hange, Nov	·), vaii,	Art Cowley
common, Vitex agnus-castus 2000 .					30	Coron	ado NF, Ariz.		Robert Van Peit & Chris Earle
CHERRY		111	26	37	146	Johns	- 011		Robert Zahner & Sid Jackson
Alabama black, <i>Prunus serotina</i> var. <i>alabame</i> Bitter, <i>Prunus emarginata</i> , 1999	ncie 100-					00111151	on City, Texas		Robert Edmondson
Bitter, Prunus emarginata, 1999 Black, Prunus esserti		40 65	35	27	82	Bristol,	Fla		
Black, Prunus serotina var. serotina, 2003* Black, Prunus serotina var. serotina, 2003* Catalina, Prunus lyenii 2003*		17	86 112	40	161		ia, Wash.		Robert T. Ing & Daniel B. Ward
	16		112  32	78 =1	319	Du Quoi	n, III,		Marshall Murray
onokecnerry, common	11	-	43	51 45	314	Great Sn	noky Mountains NP, Te	enn.	Maurice O'Keefe
Prunus virginiana var vientes	16	8	74	88	169 264	- artannia	ISIANO Conservaness	Calif.	Will Blozan & Jan Stykar
	-				-07	Owings N	Mills, Md.		A. Douglas Propst & Rill Hards
Prunus virginiana var. melanocarpa, 1991 Escarpment, Prunus carrette	54	7	<b>'</b> 3	18	132	Kootenai	Co., Idaho		Frank X. Rurka
Escarpment, Prunus serotina var. eximia, 2002*	102	5	1.				oo., Idalio		J.D. Pratt & D. Van Natter
	102	51			166 F	Real Co., 1	exas		
manaicu, Prunus mahalah toos	54	50	•		66 к 18 л	err Co., T	exas		Lee Haile
Tally Prunus avium 1000 .	78	36		, .		olon, Cali	ī.		Mark Duff & Robert Edmonson
Pin, Prunus pensylvanica, 2003 Sour, Prunus pensylvanica, 2003	263	80	80		33 W	est Chest	ns, Wash.		rialik I. Callahan
Sour, Prunus cerasus, 1972∆ Southwestern black, P	58 119	75	41	• • •	3 Gr	eat Smok	er, Pa. y Mountains NP, Tenn.		Ron Brightman & Robert Van Pelt M. Hobaugh, P. & C. Youngblood
Southwestern black, Prunus serotina var. rufula, 2 West Indies, Prunus myrtifolia, 1989	003 111	68 40	75	20		moun co.	Mich	•	Gerald Shelton
CHESTNUT	65	53	46 50	16:	3 Jef	f Davis C	o., Texas		Paul W. Thompson
American, Castanea dentata 2004			30	131	Mia	ımi, Fla.			Oscar Mestas & Wynn Anderson
MINABERRY	242	77	77	220	10-			10	Carol Lippincott
mella azedarach, 1967			•	338	Was	hougal, W	/ash.	ь	nhort Very B. v.
CHINKAPIN	222	75	96	321	¥			n	obert Van Pelt & Michael Dunn
Glant, Castanopsis chrysont				-4.1	naoh	e, South	Kona, Hawaii	J 1	W. Bryan
Justalied Ozarkensie 1000	153	122	37	284	Mend	ocino Co.	0.114	d.,,	<b></b> - yan
SHOLLA	54	60	38	124	Clark	Co., Ark.	, valif.	Pa	ul A. Violett
Jumping, Opuntia fulgida, 2001	32	21				1.44		Rol	bert E. Butler
H		21	15	57	Pinal (	Co., Ariz.			
								Mik	e Hallen

SPECIES/AVEASUREMENT	AL IS	UMFEREN	Thurs	·	-						
CINNECORD	and.	UMERHEN	DE-	leinur	8	PREAD	TOTAL POINT	Log	ATION		
Acacia choriophylla, 1996									arton	HOMINATO	IR THE
CLETHRA			14	20	0	24	40 Su	narionf Karama			
Cinnamon, Clethra acuminata, 1995*							- Out	garloaf Key, Fla.		David Sinclair & Mil	
" Liethra acuminata 1997*			10	33	1	12	46 Cale			Officiall & MI	ke Cullen
CLIFFROSE			9	29		10	41 Cale	dwell Fork Tr., Great S	Smoky Mtns. NP, N.C.	Will & Cort Di-	_
Cowania mexicana, 2003*							Carc	lwell Fork Tr., Great S	moky Mtns. NP, N.C.		lan Stykar
Cowania mexicana, 2003*			33	17		15			,	Will Blozan & Michae	el Davie
CLUSIA			28	19		17	54 Gran 51 Gran	d Canyon NP, Ariz.		louis en	
Florida, <i>Clusia rosea</i> , 1995						.,	or Gran	d Canyon NP, Ariz.		Judy Thornburg	
COCONUT			25	40	9	17				Mike Hallen	
Palm, <i>Cocos nucifera</i> , 1979∆			4		J	,	74 Hugh	Taylor Birch SP, Ft. L	auderdale Ela		
COFFEETREE		6	60	93	-					Jim Higgins	
Kentucky cy-				00	27	′ 1	59 betwe	en Pauahi and Ponoh	lawai Hilo u		
Kentucky, Gymnocladus dioicus, 2003		20	6	00					and, mo, nawan	Jane & Bryce Robinson	n
CONDALIA		-5		82	77	30	07 Lake C	Co., Ohio			
Bitter, Condalia globosa, 2003*			,					-		Mark Ervin	
Bitter, Condalia globosa, 2000*		44		18	16	6	6 Little A	jo Mountains, Ariz.			
CORALBEAN		42		17	25	6	5 Eagleta	il Mountains, Ariz. il Mountains WA, Ariz		Jim Malusa	
Southeastern, Erythring herbanes, 1005							3.0.0		z.	Central Arizona College	Uillia -
to an action of the state of th	00	40	3	32	30	79	J.M. "no:	ngii Deer		conege	niking Club
COKKMOOD	JJ	11	1	5	12	29	Arizone (	ng" Darling NWR, Fla	· ,	Richard Workman	
Leitneria floridana, 1989*						-5	· wizulia ;	Sonora Desert Museu	ım, Tucson, Ariz. 🦸	George Montgomery	
Leitneria floridana, 2000*		8	10	6	7	26				a- montyomery	
COTTONWOOD		8	15	5	8	25 25	waccasa:	ssa Bay State Preser	rve, Fla.	Obort Ci-	
Black, Populus trichocarna 1005					_	23	waccasas	ssa Bay State Preser	1.00	obert Simons & Thomas	Rooks
Lastern, Populus deltaidacus de la constantidacus d		320	158	1.	10	500			n.	Simons, C. Lippincott, K. I	McPherson
		444	93	10		506	Willamette	e Mission SP, Ore.			
Meseta, <i>Populus fremontii</i> var. <i>Tremontii</i> , 19 Narrowleaf <i>Populus a</i>	996	504	92	10		563	Seward, N	eb.	Ma	aynard C. Drawson	
		190	60	6		623	Santa Cruz	z Co., Ariz.	υa	ryl Hackbart	
Tallis, rupulus deltaidecues		314	79	8		265	Brewster C	co., Texas	Ma	rk Rouw & Don Richard	
	67	432	105	93		413	Malheur Co	)., Ore.		nes E. Liles	
Swamp, Populus heterophylla, 1999	2001	367	92	118		560	Hygiene, Co			nald Oakes	
CRANBERRYBUSH		151	93	50		489	Fort Davis,	Texas	Alle	gra Collister	
American, Viburnum trilobum, 1985*	12			-		257	Yazoo NWR,	Miss.		e Runnels	
American, Viburnum trilobum, 1985*		10	32	31					Lam	ar Dorris & David Linder	7
American, Viburnum trilobum, 1985*		18	25	25		50	Bloomfield H	lills, Mich.			
CUPANIA		10	32	31		49	Wayne, Mich		Paul	W. Thompson	
Florida, Cupania glabra, 1993				٠,		50 l	Westcroft Ga	rdens, Mich.	Paul	W. Thompson	
CYPRESS	2	25	31	20					Paul	W. Thompson	
Arizona Cumana			••	22	,	62 N	Monroe Co., F	la.			
Arizona, <i>Cupressus arizonica</i> var. <i>arizonica</i> , 199	3 24	n	00						Cliffor	d Shaw & George Avery	
Out out assis arizonia	. 2003 21	5	93	48	34	15 Sa	anta Catalina	Mountains, Ariz.		•	
Baker, Cupressus bakeri, 1976 Cuvamaca, Curamaca, Curama	120	9 4.	70 20	52	29	18 Cc	Conino NF, A	riz.	James	Mielke	
Cuyamaca, Cupressus arizonica var. stephensoni Gowen, Cupressus goveniana var.	ii. 1976 70	) , ) ·	29 37	29	26	5 Ro	gue River Ni	F. Ore	David 1	Thornburg & Harry Untie	d+
Gowen, Cupressus goveniana var. goveniana, 199 MacNab, Cupressus massati	9 66		37	28	114	4 Cle	eveland NP, C	alif	Frank 1	. Callahan	uı
			_	52	119	9 Poi	int Lobos SP,	Calif.	Frank T	. Callahan	
Manageria, Cupressus governa	991 267		_	45	221	Am	ador Co., Cal	lif.	Alan R.	Washburn	
		14		40	419	Mei	ndicino Co., (	Calif.	Frank T.	Callahan	
Talif Cupi essus arizonica una	115	102		16	668	San	Mateo, Pesr	adero Co., Calif.	Frank T.	Callahan	
		45		30	168	Seq	uoia NF, Cali	f.	R. Huntir	ngton & Fiesta Gardon S.	ohl
		38		10	167	Sequ	uoia NF, Calif	::a	rrank I.	Callahan	GIII.
anta Cruz, <i>Cupressus arizonica</i> var. <i>abramsiana, 2</i> anta Cruz, <i>Cupressus arizonica</i> var. <i>abramsiana, 2</i>	?003*9a				179	Sant	a Cruz, Calif.		Frank T. (	Callahan	
anta Cruz, <i>Cupressus arizonica</i> var. <i>abramsiana</i> , 2 argent, <i>Cupressus sarnentii 2</i> 000.	003*97	68			177	Sant	a Cruz, Calif.	-	Whit Bro	naugh	
argent, <i>Cupressus sargentii</i> , 2000 ecat <del>e</del> : <i>Cupressus sargentii</i> , 2000	244	67 50	45		175	Santa	a Cruz, Calif.		Whit Bron	augh	
ecat <del>e;</del> Cupressus guadalupensis var. forbesii, 2001	93	58 71	64		318	Wildo	at Canyon R	egional Park Calls	Whit Bron	augh	
		71	48	3.	176	San D	liego Co., Cal	lif.	Rory Nich	ols	
ue, <i>Callitris hugelii</i> , 1994∆ Y P. I.	100	_					500	9777)	Art Cowles	y .	H.
YRILLA	180	60	50	2	53	Brade	nton, Fla.				보
AHOON	E4	_					, a ret.		Steven Spe	zia	WADET
	51	44	30	10	03	Washir	ngton Co., Fla	•	- 70	=	/8585
Cassine, 1984*						-5141	-s-on 60., Fla	d.	Charles R. I	Reeves	SOLE.
Cassine, 1995*	55	40	36	10	14	St. Luci	io Co				I. Aff
cassine, 1995*	32	68	31	10	8	San C-	to. near F	t. Pierce, Fla.	Paul G. Willi	7. The c	8
cassine, 1994+	54	42	36	10:	5	mmer-	rios Park, Fia Ilee, Fia.	ı <b>.</b>	Chris Anders	diiiS	TONTO RANDORAL FOREST, ANDCHANTERNADETTE HEATH
BIG TREE REGISTER	34	61	34	104		San Carl	ilee, Fla. Ios Park, Fla.		Chris Anders	eon.	NATIO
" "CGISTED				_	•	val	ıvs rark, Fla.		Anuers	PUIT	õ
							,		Sam Allison		7.



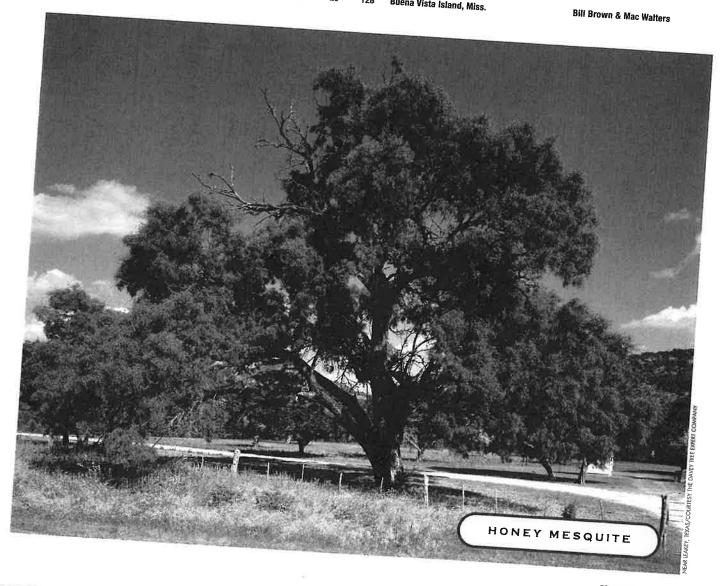
<i>llex cassine</i> , 1999* Myrtle, <i>llex myrtifolia</i> , 1998	4.	1 -	SPRE		AL POINTS LOCATION	Witness
DARLING-PLUM	77			10	6 Picayune Strand SF, Fla.	History .
Reynosia septentrionalis, 1993		J.	35	14	St. Marks NWR, Fla.	Chris Anderson
DESERT-WILLOW	21	28	13			David Roddenberry
Ciliopsis linearis, 1995			10	52	Lignumvitae Key Botanical State Pa	irk Ele
DEVILS-WALKINGS-	160	68	48	240		rk, Fla. Charlotte Niedhauk
Aralia spinosa, 1997 DEVILWOOD	23	74	40		Pinal Canyon Drive, Gila Co., Ariz.	Mitchell Holder
smanthus americanus, 2003		,,	16	101	Great Smoky Mountains NP, Tenn.	
OGWOOD	88	39	47	100		Katherine Johnson & Will Blozan
ternate-leaf, Cornus alternifolia, 1997			276	139	Keystone Heights, Fla.	
COLLUS SASSILIS 2000	41	49	27	97	Modie	John & Janet Sloane
Wering, Cornus florida, 1988*	20 110	18	16	42	Madison, N.J. Shasta Co., Calif.	Dave to t
wering, Cornus florida, 1995* wering, Cornus florida, 2001*	114	33 31	42	154	Glenwood Park, Norfolk, Va.	Dave Johnson & Jon Rafalowski Frank T. Callahan
vering, Cornus florida, 2000-	107	36	48	157	Clinton, Sampson Co., N.C.	B. Carmean, P &G. Williamson, D. Leibma
, Cornus racemosa, 1975	107	35	39 42		williamson Co., Tenn.	A.J. Bullard, Robert Melvin
Control of the Contro	18	38	24	100	Hampton, Va.	Jerry Greenshaw
AXIW.				02 (	Dakland Co., Mich.	Sabastian Velilla & Sandra Burke Paul W. Thompson

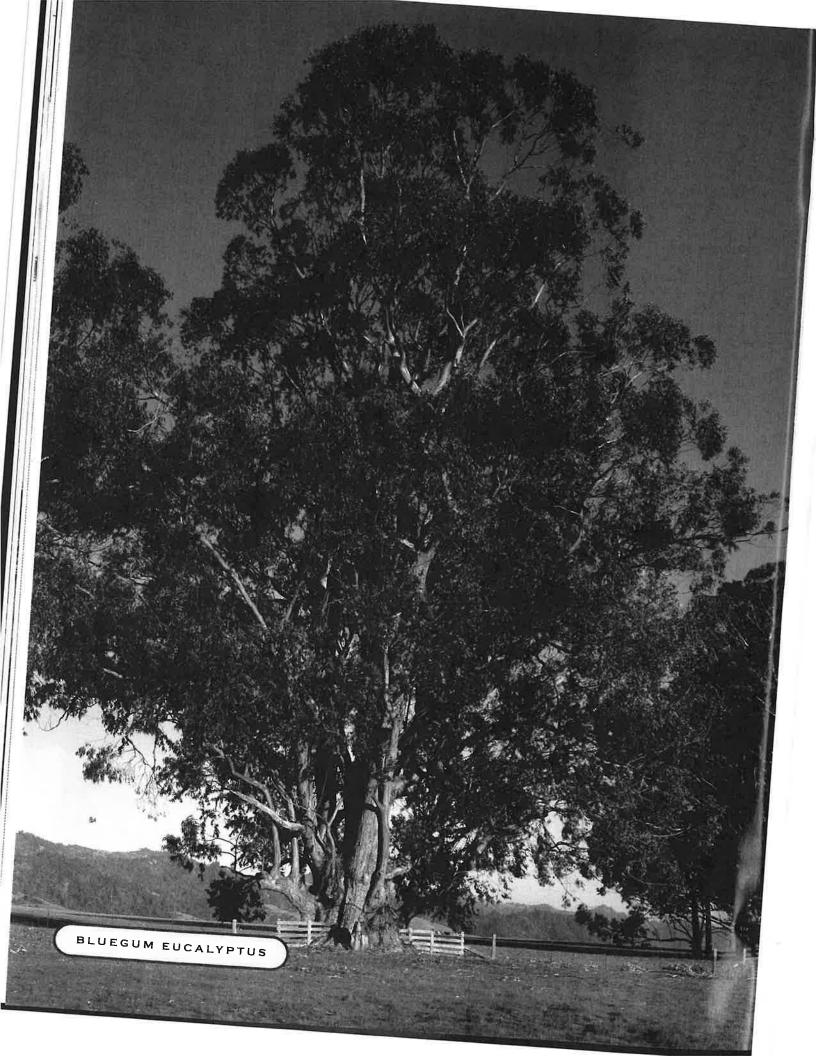


	SPECIES/MEASUREMENT	7 700000	Section 1				_	F		
		GIRGUI	RERENCE	* H	ПБИР	SPRE	EAD' TO	TAL POINTS	KS III	
	Pacific, Cornus nuttallii, 1986			C0		-		100	rocatto)*	NGMINATOR
	Red-osier, Cornus stolonifera, 1999			69 13	60	58	8 24	14 Clatskanie, Ore.		MUNINATOR
	Roughleaf, Cornus drummondii, 200	1		40	26	15		3 White Bird, Idaho		John E. Makela
	Roundleaf, <i>Cornus rugosa</i> , 1975 Smooth, <i>Cornus glabrata</i> , 1970*			1	22 40	33	3	O Shelby Co., Tenn.		F.D. Johnson
	Smooth, <i>Cornus glabrata</i> , 1991*			8	28	16		Leland, Mich.		David Smith
	Smooth, Cornus glabrata, 1991*		1	6	42	16 16	00	ano oreek, idano	1	Paul W. Thompson
	Swamp, Cornus stricta, 2003*		2	4	36	20	62	Jefferson NF, Va.		Frederick D. Johnson
	Swamp, Cornus stricta, 2001*		13	3	24	17	65	Theorem SP, W. Va.		Richard Salzer
	Swamp, <i>Cornus stricta</i> , 1993*		12		19	22	42			Richard Salzer
	Swamp, <i>Cornus stricta</i> , 1988*		10		23	24	37 39	Fayette Co., Tenn.		Ed Brown & Jack Herring
	Swamp, <i>Cornus stricta</i> , 1988*		12		23	22	41	Palatka, Fla.		David Smith
	Western, Cornus occidentalis, 2002		10		22	28	39	Indian Creek Rd., Che	esapeake, Va.	Robert W. Simons & D. Ward
	DOUGLAS-FIR		32		25	35	66	Che	sapeake, Va.	Jon Garmean & Gary Williams
	Bigcone, Pseudotsuga macros	•					07.50	Polk Co., Ore.		Byron Carmean & Gary Williamson Barbra Rupers
	county i Sebuulsuda menziacii		264	14	15	85	430	Annata un		-arora nupers
			512	30	1	65	829	Angeles NF, Calif.		William As
	, Soudotsuya menziegii yar	311, 1999* Varian dan	600	20	0	71	809	Jedediah Smith Redwo	ods SP, Calif.	William Maxwell Robert Van Pelt
				139	9 ;	55		Olympic NP, Wash.		Preston P. Macy
	American, Sambucus canadensis var. cana Blackbead, Sambucus melanas							Deschutes NF, Jefferson	n Co., Ore.	Mark Corbot e n
		<i>aensis</i> , 1989	9 38	16	2	2	60	Inffa		Mark Corbet & Ben Benhower
	Tambudus Cerriles 1007		39	42	3	0		Jefferson NF, Va.		Richard Salzer
	riorida, Sambucus canadonolo	ta 1004	156	45	40	0	211	Columbia Co., Ore.		Oliver Matthews
	della callicarna 1909	1554	26	18	12	2	47 N	Villiam SP, San Jose, Ca Marion Co., Fla.	lif,	Art Cowley
	ELEPHANT-TREE		56	27	32	!	91 7	illamook Co., Ore.		Robert W. Simons
	bursera microphylla, 1997*									William Schoppert
	Bursera microphylla, 1998*		17	13	16		34 Yu	ıma Co., Ariz.		anapper (
	ELLIOTTIA		21	12	21			IZA-Rorrego D		Ken Morrow & Mike Hallen
	Elliottia racemosa, 1999							za-Borrego Desert SP, (	Calif,	Whit Bronaugh
	Elliottia racemosa, 2000		34	43	20	8	32 Tis	On Totte-II o		- Grandyr
41	ELM		28	43	22	7	7 Tisa	on, Tattnall Co., Ga. on, Tattnall Co., Ga.		Howard Stanton a -
	American, <i>Ulmus americana</i> , 2001							on, ratulali Co., Ga.		Howard Stanley & Red Castleman Jim Mock
	Godal, Olinus Crassifolia 2002	27	•	22	84	420	) Maa	Man Ol II		com/massix
	riuriua, Ulmus americana var dante	15		20	68	293		man-Shelby SP, Tenn.		David Smith
	THE MONITASTIC TURB			72	61	261		man-Shelby SP, Tenn. sonville, Fla.		David Smith
	September, Ulmus serotina, 1985	202			122	350	Cass	opolis, Mich.		David Holley
	Siberian, <i>Ulmus pumila</i> , 1997*	105 239			64	271	Colbe	ert Co., Ala.		Paul W. Thompson
	Siberian, <i>Ulmus pumila</i> , 2001*∆	238			97	358	Grand	Junction, Colo.		T.F. Hall
	Slippery, <i>Ulmus rubra</i> , 2001 Winged, <i>Ulmus alata</i> , 1991	232	- 0		28	356	Londo	onderry, Ohio		Bob Ely
	ESENDE :	185	103 97		93	358	Frede	rick, Md.		Brian Riley
	ESENBECKIA Berlandier Frank		3/		78	302	Richm	ond Co., N.C.		Stuart Frazier
	Berlandier, Esenbeckia berlandieri, 1995	41	24							Walter B. High
	- UCALYPTIIC		24		21	70	Camero	on Co., Texas		
	Bluegum, Eucalyptus globulus, 2002∆	586						,		Brownsville Beautification Comm.
	Longbeak, Eucalyptus camaldulensis, 2003*A	276	141	12		759	Petrolia	ւ Calif.		THE OUT OF THE
	- Lucarypius camaldulencie 2000+	241	112	8.		409	Chandle	r, Ariz.		Loren Salladay & Robert Bush
	'Y-3E-MASTIC		140	93	3 4	104	Boyce T	hompson Arboretum, Ar		mine nation & Sylvia Escudoro
	Mastichodendron foetidissimum, 1995	105	440						IZ.	Robert & Glenda Zahner
G	ALSEBOX	100	118	94	2	47	Castellov	v Hammock Park, Fla.		705
- ·	yminda latifolia, 1995	10						raik, Fla.		R. Hammer
FI	IDDLEWOOD	10	19	13	3	32 F	- lorida K	eys Refuge, Fla.		
-	orida, Citharexylum fruticosum, 1986	4=						-yo netuye, Fla.		Albert H. Hetzell & Ron Smith
•	1 6	17	27	12	4	7 Li	ianumvit	20 Kau B		a non annin
L10	orida strangler, Ficus aurea, 1993						.3.1411141[	ae Key Botanical State	Park, Fla.	Ken Roundtree & Frank L. Zickar
One	ordear, Ficus citrifolia, 1992	360	63	72	441	OI.	d Cuttor	U		Tank L. Zickar
- 1	IR .	248	41	57	303	Lia Lia	a nancita	Hammock, Fla.		Albert H. Hetsell e. D.
Bals	sam, Abies balsamea, 1993						,vita	e Key Botanical State P	ark, Fla.	Albert H. Hetzell & Ron Smith David M. Sinclair & Frank L. Zickar
vali	Tornia red. Abiec magniti	200	100	45	259		rfield, Pa			w Frank L. Zickar
	Wille. Ahipe connect		172	41	547	You	rneia, Pa Semite Ni	l. D. O-111	ı	R.O. Brooks & C. Keeran
		457		39	503	Mer	ced tal-	, valif.	F	R. Van Pelt R. Knight
		454		33	260	Line	ced Laki Coln NF, N	e, Yosemite NP, Calif.	R	R. Van Pelt, R. Knight, M. Rudnicki Jobert Van Pelt
Noble	d, Abies grandis, 1997	0.45		52	253	High	ilands, N	r. wex.	Ε	ari Aldon
	c, Ables procera, 1989*	200	-	36	511	Redu	wood NP,	Calif		obert Zahner
		359 22	21 2	11	596	Giffo	rd Pinch	ot NF, Wash.		obert Van Pelt & Dale Thornburg
								···) md3ll,	Ha	rold Coates & Bob Smith

SPECIES/MEASUBEMENT	No.	-	1000					
	CLECUMFER	ENGE"	REIGHT	s	PREAD!	TOTAL POINTS	LOCATION	
Noble, <i>Abies procera</i> , 1989*		313	·			The second second	FOORTION	NOMINATOR
Pacific silver, Abies amabilis, 1999 Rocky Mtn. white. Abia.					49	597 Mt. St. He	lens NM, Wash.	The Later of the l
Rocky Mtn. white, Ables concolor v Subalpine, Ables lasiocarpa	ar. <i>concolor</i> , 199	90 227			37	467 Olympic N	P, Bogachiel Valley Woo	Robert Van Pelt
I adiocal pa var lac	Inna- da-	252	•		48	Outra M. I	ran	TOUR THE PER A STONE COLL.
THE USON THE	E			•	26	384 Olympic Ni	P, Wash.	r. Dietz, B. Gardnerm, D. Grierson, D. Full-
Florida, Piscidia piscipula, 1986		101	/11					Stephen Arno & Oscar Sedergren
FLORIDA-BOXWO	a c		41		48	154 Lee Co., Fla		
The state of the s		24						David Fox & Dee Slinkard
FLORIDA-PRIVET		24	27	1	16	55 Lignumvitae	Key Botanical State Pa	
Forestiera segregata, 1993		25	10				may Botalineal State Pa	rk, Fla. Ken Roundtree & David M Sinclair
FLOWERFENCE			18	2	1	48 Humiston Be	ach Park, Vero Beach, F	
Caesalpinia pulcherrima, 1991*∆		20					- GIN, Velo Beach, F	la, Janice Broda
Caesalpinia pulcherrima, 1991*∆		20 16	12	15	5 ;	36 Terrace Brow	rand Co. Et	
FORESTIERA		10	16	14	l g	36 Crescent Dr.	Hollywood, Calif.	John Kern
Desert-olive, Forestiera phillyreoides, 1	997						nonywood, Calif.	D. Spicer, W. Harms, W. Tesauro
· KANKLINIA	007	10	17	17	3	1 Buenos Aires	Altern	,, w. lesauro
Franklinia alatamaha, 1986						- nones Alles	NWK, Ariz.	Roseann Hanson
FREMONTIA		78	37	42	126	i Word-		
California, Fremontodrendron californica				_	120	wynamoor, Mo	ntgomery Co., Pa.	John Su
FRINGETREE	<i>m</i> , 2003	54	25	28				John Swartley
Chionanthus virginicus, 1989*			-	£0	86	Sequoia NF, Cal	lif.	
Chionanthus virginicus, 1989*	4	12	41	24				Art Cowley
Chionanthus virginicus, 2001*		;3	32	31	91	Telford Spring (	ounty Park Era	
Chionanthus virginicus, 1998*	5		25	35	94	Mount Vernon, V	a.	Buford Pruitt Jr.
GALLES = - 1998*	6-		20	43	93	Salt Lake City, U	tah	Richard Salzer
GALLBERRY	_		20	20	89	Elmwood Cemete	erv. Tenn	Art Scott & Shirley Hawkins
Large, Ilex coriacea, 1999	10						- 77 101111.	Carlyle Page
GEIGER-TREE	10	'	27	12	40	Great Dismal Swa	lme M.	
Cordia sebestena, 1994 $\Delta$							mp, va.	Byron Carmean & Gary Williamson
GUAJILLO	27	2	24 1	9	56	Tarnon Pay Na.		a daily williamson
Acacia berlandieri, 1989						Tarpon Bay Marin	a, Lee Co., Fla.	Eric H. Hover & Chair
GUIANA-PLUM	18	15	5 1	2	36	Albania .		Eric H. Hoyer & Chris J. Anderson
Drypetes lateriflora, 1998					-00	Amert Schwarz Ra	nch, Mercedes, Texas	Fleet Lentz
GUMBO-LIMBO	21	23	3 8					
Bursera simaruba, 1992*			`	•	46	Key Largo Hammoci	ks State Biological Site, F	ilo I-
Bursera simaruba, 1992*	108	55	52				0 0.10[1	la. Jeanne M. Parks
Bursera simaruba, 1995*	125	41	48		176 (	Captiva Island, Fla.		
HACKBERRY	99	64	57		78 5	St. Mary's Star of th	e Sea, Key West, Fla.	Jeff Mangun
Common, Celtis occidentalis, 2003			0,	ı	77 S	nider Park, Ft. Laud	lerdale, Fla.	W. Hubard & Beverlee Wang
Georgia, Celtis tenuifolia, 2003	248	126	445				,	Kathy Preston & Frank Zickar
Lindheimer, Celtis lindheimeri, 1975	43	26	112	40	02 W	ayland, Mich.		
Netleaf, Celtis reticulata, 1988	72		21	7	74 W	ashtenaw Co., Mich	L	Elwood B. Ehrle
Spiny, Celtis pallida, 1996*	180	43 60	46	12	?7 Co	mai Co., Texas	•	William Luitje & A. A. Reznicek
Spiny, Celtis pallida, 2000*	31	69 22	75	26	8 Ca	tron Co., N. Mex.		Frank Love & John Haislet
H A W T	25		24	5	9 Rin	icon Valley, Pima C	n Ari~	Ralph A. Fisher Jr.
HAWTHORN		31	23	62	2 Tuc	son, Ariz.	P., MIZ.	Matt Johnson
Beautiful, Crataegus pulcherrima, 1993	0=							Bob and Rita Cote
The state of the s	25	46	31	79	Tall	ahassee, Fla.		
Black, Crataegus douglasii, 1993	90	23	42	124	War	renton, Va.		Malcolm Johnson
Blueberry, Crataegus brachyacantha, 1993 Broadleaf, Crataegus prachyacantha, 1993	111	41	57	166	Bear	con Rock SP, Wash.		Richard Salzer
Cidiaegus dilatata anna	98	36	46	146	Etoil	e. Nacondoche a	_	Robert Van Pelt
ocito, crataegus ervthronoda 1007		23	34	83	Mort	e, Nacogdoches Co on Arboretum. Lisle		Keith Cook
ouckspur, Crataegus crus-galli 100-		16	21	45	Rolla	nd Moore Device		Edith Makra
Totaliula, Grataegus columbiana 1000	20	40	48	112	Mana	nd Moore Park, For ssas, Va.		Tim Buchanan
Unataegus Dunctata 1070		24	23	68	Nez P	erce Co., Idaho		Richard Salzer
ouvily, Crataegus mollis 1979	40-		38	145	Canaa	in Valley Park, W. Va		Gen & Brant Steigers
aniear, Crataegus flahellata 2004	4		62	173	Grosse	e lie, Mich.	7. A	ichard Salzer
rederry, Crataegus chryspearna ages	4-		35	92	Horrie	оп Co., W. Va.	P	aul W. Thompson
orataegus succulenta 1004	15 1		20	30	Morton	Arhoret	D	an Cooley & Michael Plevich
vateu, Crataegus pruinnes dond	51 <sub>21</sub>	t g	30 4		Pineete	ı Arboretum, Lisle, I em SP, W. Va.	II. Ec	lith Makra
valeu, Grataegus pruinosa 1001	64 30	3			Shann-	an ar, W. Va.		chard Salzer
reon real	63 32	3:		03	Sheren	doah Co., Va.	Ria	chard Salzer
on, oracaegus viridie 1001	61 40		_ `	12	Marlian.	doah Co., Va. on, W. Va.	Ric	chard Salzer
ansas, Crataegus coccinieidas as			-	_	evecat HINTO	er: 10/ 1/-	******	TOTAL DELIZER
ansas, Crataegus viridis, 1981 ansas, Crataegus coccinioides, 2003 ttlehip, Crataegus snathulata	36 16	40	) ,	32 1	Mo⇔	u, w. va.	Rin	hard Sales
ansas, Crataegus viridis, 1981 ansas, Crataegus coccinioides, 2003 ttlehip, Crataegus snathulata	36 16 42 35	40 32		i2	Morton /	Arboretum, Lisle III	Ric	hard Salzer
ansas, Crataegus coccinieidas as	36 <sub>16</sub>		2 8	i2    5	Morton / Hapeville	Arboretum, Lisle, III e, Fulton Co., Ga. -Shelby SP, Tenn.	Ric Edi	hard Salzer th Makra & Kunso Kim L. Chance

	UMFERENCE"	HEIGHT	SPA	EAO' TO	TAL POINTS LOCATION	9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9
Oneflower, Crataegus uniflora, 1991 Oneseed, Crataegus monogyna, 1992*∆ Oneseed, Crataegus monogyna, 2002*∆ Parsley, Crataegus marshallii, 2000 Pear, Crataegus calpodendron, 1991 Riverflat, Crataegus opaca, 2000 Scarlet, Crataegus coccinea, 1998 Texas, Crataegus texana, 2003	1 11 10 5; 23 58 62	1 3 0 4 3 20 5 20 30	7 5 4 5 3 3( ) 25 1 35	6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	36 Gainesville, Fla. 63 Mount Vernon, Wash. 68 Old Saybrook, Conn. 69 Covington Co., Miss. 69 Pope, III. 70 Union, Parish Co., La.	ROMINATOR  Robert T. Ing & Daniel B. Ward Ron Brightman Donald Swan Bryant E. Brown & Jon Wallace Larry Stritch & Scott Grigoroff Stephen Pagans
Tracy, Crafaegus tracyi, 2003 Washington, Crafaegus phaenopyrum, 2003* Washington, Crafaegus phaenopyrum, 1988* Washington, Crafaegus phaenopyrum, 1988* Yellow, Crafaegus flava, 2000 HAZEL Salifornia, Corylus cornuta var. californica, 1989	28 43 61 54 62 38	25 27 33 36 30 41	28 26 44 38 32 34	66 77 105 100 100 87	Harris Co., Texas  Jeff Davis County, Texas  Chattanooga National Cemetery, Tenn.  Abingdon, Va.	Charles McFadden Lynn Lowery Thomas R. Mangren Bruce Kauffman Richard Salzer Richard Salzer Christian S. Noble
HEMLOCK arolina, <i>Tsuga caroliniana</i> , 1990	30	50 27	42 21	127 62	Lincoln Co., Ore. Prince Frederick, Md.	Tom Morgan John Zyla
estern, <i>Tsuga canadensis</i> , 1998 contain, <i>Tsuga mertensiana</i> , 1990* contain, <i>Tsuga mertensiana</i> , 1993* contain, <i>Tsuga mertensiana</i> , 1993* cstern, <i>Tsuga heterophylla</i> , 1997* cstern, <i>Tsuga heterophylla</i> , 1996* ERCULES-CLUB cthoxylum clava-herculis, 1996	161 202 277 234 335 270 342	99 165 113 152 172 241 195	50 39 44 41 65 67 47	273 377 401 396 523 528 549	Henderson, N.C. Great Smoky Mountains NP, Tenn. Alpine Co., Calif. Olympic NP, Wash. Olympic NP, Wash. Olympic NP, Wash. Olympic NP, Wash.	Ken Knox W. Blozan, J. Boetsch, M. Davie Allen Miller R. Van Pelt, R. Wood, A. Jacobson Preston Macy Robert Van Pelt Robert L. Wood & Robert Van Pelt





SPECIES/MEASUREMENT	CI	RGUMFERE								
Texas. Zanthawatan			MUE"	HEIGHT	's	PREAD'	TOTA	L POINTS	A STATE OF THE PARTY OF THE PAR	*
Texas, <i>Zanthoxylum hirsutum</i> , 19 HIBISCUS	99		18		20			LOCAT	ION	NOMINATOR
Sea, Hibiscus tiliaceus, 1991∆				•	20	21	43	Gillespie Co., Texas		
Shrub althea, Hibissus			102	5	n					Mark Duff
Shrub althea, Hibiscus syriacus, 1 Shrub althea, Hibiscus syriacus, 2	999*∆		8	19	_	74	171	Boca Raton Garden Club, I	Roop Date	
HICKORY	001*∆		17	16		13	30	- initial	ooca katon, Fla.	2. COMELANIE
Bitternut, Carya cordiformis, 1999				.,	in .	9	35	Giles Co., Tenn.		Colby B. Rucker
Black, Carya texana, 2000			182	120						Dwayne Estes
Carolina, Carya ovata var. australis,			118	127	• • • • • • • • • • • • • • • • • • • •		327	LaGrange, Fayette Co., Tenn	YO .	
Jan Va Tomentone Cone			94	150	6	0	263	Sabine NF, Texas		William David Smith
municy, Garya myristiciformia door			178	108	6	_	260	Near Gallant, Etowah Co. Al	la	Mahler, Fant, Baggett, Fritz
Silli, varya yiabra var alaba ana	-	1	32	145	80		302	opper Mariboro, Md.		J. Lawrence Brasher
Julya yiaDfa Var. odorata 2000	,	2	00	105	125	. 8	297	Lowndes Co., Ala.		Md. Nat'l Capital Park & Plan. Comm.
sana, varya pallida, 1997*		1:	54	153	79		336 327	St. Simon Island, Ga.		- anny noward
Sand, Carya pallida, 1998*		14	13	94	86			Great Smoky Mtns. NP, Tenn.		Ken Knox & Sam Hocott
SCIUD, Carya floridana 1000		13	18	104	68		-00	vineland, N.J.		Bill Korn
Snagbark, Carya oyata yar ayata saa	)*		2	47	48			St. Leonard, Md.		Stephen R. Field & Adele Filippi
Salin, varya ovata var ovata sana	· !*	14		145	56	30	13 T	Highland Co., Fla.		Junn Zyla
Wallet Market Market 1004	•	177		90	116	29	3	Sumter NF, S.C.		J. Thorsen, R. Simons, J. & M. Buckner
water, Carya aquatica, 1902*		171		141	80	33		dgewater, Md.		Judge J. Woody
water, Carya aquatica, 2003*		228		101	85	350		reenup, Ky.		James & Kathleen Suite
HOLACANTHA		194	1	143	46	349		arr's Landing, Lake George, Fl	la.	Charles Wilburn & Rick Crooks Betty Rich
noiacantha emoryi, 2000							- 0	ongaree Swamp NM, S.C.		
HOLLY		38		25	23	69	0-			Robert Jones & Lee Reynaud
American, Ilex opaca, 2003						03	Ur	gan Pipe Cactus NM, Ariz.		l'
Carolina, Ilex ambigua, 1995		139	6	88	48	240				Jim Malusa
HONEYLOCUST		18		-	30	219	Cui	nberland, Va.		
Gleditsia triacanthos, 2003					00	53	Nev	v Port Richey, Pasco Co., Fla.		dward H. Robertson
HOPBUSH		236	114	1 6	3					). Robinson & M.W. Kenton
Dodonaea viscosa, 1998			•		13	373	Fred	erick Co., Md.		
HOPHODA		14	22							ary Schmidt
HOPHORNBEAM			~~	1:	3	39	Key t	.argo Hammocks State Botanio		*
Chisos, <i>Ostrya chisosensis</i> , 2001 Eastern, <i>Ostrya virginiana</i> , 1991		27	24					orare potanio	cal Site, Fla. Jo	seph Nemec
Knowiton, Ostrya knowitonii, 2002		115	34 74	24		67	Big B	end NP, Texas		
HOPTREE		55	51	111	2	217	Grand	Traverse Co., Mich.	Jai	mes E. Liles
California Ptotos			JI	37	1	15	Capito	Reef NP, Utah	Arv	id Tesaker
California, <i>Ptelea crenulata Greene</i> , 1991 Common, <i>Ptelea trik y</i>		49	20					Entre-section & - value		Clark
Common, <i>Ptelea trifoliata</i> , 1982 HORNBEAM		33	22	20	7	76 (	Lake C	o., Calif.		
American Com			35	40	7	78 A	Ada, M	ich.	Fran	k T. Callahan
American, Carpinus caroliniana, 1996	1	119							Paul	W. Thompson & C. Rogers
MANILLO		119	75	68	21	1 W	Vestch	ester Co., N.Y.		o. nogers
Pithecellobium pallens, 2000		40						00., M. J.	Robe	rt Messenger
HUISACHE		18	41	27	66	Ur	Niversi	hu of A-:		
Acacia farnesiana, 1989								ty of Arizona, Tucson, Ariz.	Kathr	yn Stiles
HUISACHILLO	16	31 ;	30	46	203	Δ+-	2000			y. ones
Acacia tortuosa, 2003						710	ascusa	County Jail, Tex.	Martin	Soward
HYPELATE	49	9 3	1	30	88	DL.			WILL THE	Soward
Hypelate trifoliata, 1998*						rng	penix, /	Ariz.	Von 8	
Hypelate trifoliata, 1994*	54	39	)	8	05					Kathy Morrow
INCENSE-CEDAR	46	39	)	25	95 91	Key	Largo	Hammocks State Botanical Sit	e Ele	
Libocedrus decurrens, 1997					31	Cora	al Coas	t subdivision, Key Largo, Fla.	-	
INDIA-ALMOND	468	165		49					v. Conde	on & W. Miller
Terminalia catappa, 1986∆		-		13	645	Marb	ole Mot	ıntains Wilderness, Calif.		
INDMAN-FIG	135	61	,	· ·					J. Herr, [	). McHardy, D. Wright
Opuntia ficus-indica, 1999∆		01	7	1 ;	214	Monro	oe Co.,	Fla.		
INKWOOD	36	14	_						D. Sinclai	r & M. Cullen
Exather positive		14	1(	6	54	Tucso	n Medi	cal Center, Ariz.		
Exothea paniculata, 1989	40							Tar Conton, ALIZ,	Ken Porte	r
JERUSALEM-THORN	40	44	21	į	B9 )	Key La	rgo Ha	Mmneke Stet		
aculeata, 2003	7.			•		,	J- 1101	mmocks State Botanical Site, I	Fla. Albert Het	zell & Ron Smith
JOEMOOD	78	45	50	13						non Shifti
Jacquinia keyensis, 1995						. eudig	· rafK,	Phoenix, Ariz.	Larry B. W.	ight & Dugger =
JOSHUA TREE	23	13	13	39	9 6	udios :	Ko		· , = 111	ight & Russell T. Gates
Yucca brevifolia, 1999				٠,	v	-alos I	Key, Fi	a.	Dianna s+	0.00
	168	48	44	227	C+	ans- ·				enson & Vince Condon
				~61	36	anford	Unive	rsity, Santa Clara Co., Calif.	Art Court	
								,	Art Cowley	

	Sprone									
Ш	SPECIES/MERSUREMENT	CIRCUN	IFERENCE:	" HEI	GHT'	SPRE	AD' TOTA	AL POINTS		
Ш	JUJUBE					==1		LOCATION LOCATION		NOMINATOR
Ш	Common, Ziziphus jujuba, 2003∆ JUNIPER			93	61	_				THE REAL PROPERTY.
Ш	Alligator, Juniperus deppeana, 2003*				01	51	16	<ol> <li>U.S. Capitol grounds, Washingt</li> </ol>	ton, DC	Rad Barre
Ш	Alligator, Juniperus deppeana, 1995*		3	05	65	54	384		,	Rod Royse
Ш	Amyator, Juniperus depneana 1000*			28	46	49		TOOGULL ME, ALIZ.		David Thornburg
	Halle, Juniperus ashei, 1999		30		57	76	384	Granite Mountain, Prescott NF, Prescott NF, Ariz.	Ariz.	William Litzinger
111	California, Juniperus californica, 1976		13 9		57 22	48	207	New Braunfels, Comal Co., Texa		Richard & Mickey Contreras
Ш	Common, <i>Juniperus communis</i> , 1993 Drooping, <i>Juniperus flaccida</i> , 1982		3		33 46	40 28	137	colusa Co., Calif.	3	Mark Peterson
Ш	Oneseed, Juniperus monosperma, 1981		102	2	55	35	90 166	Washtenaw Co., Mich.		Frank T. Callahan
	" " Juniperus pinchotii 2002		168		29	28	204	Big Bend NP, Texas		M. Huemann & Paul W. Thompson James E. Liles
	neggerry, Juniperus erythrocarna 2004		138		28	33	174	Jicarilla Mountains, N. Mex. Alpine, Texas		Tom Guck
Ш	mooky mountain, Juniperus sconulorus	1989	119 247		28	33	155	Organ Pipe Cactus NM, Ariz.		Frank T. Callahan
	ouniperus osteosperma 2002		260		_	21	292	Cache NF, Utah		John Stiles
	Western, Juniperus occidentalis, 2003 KIDNEYWOOD		481	7	_	56 56	314	Crowley Lake, Inyo NF, Calif.		R.P. McLaughlin
11	Eysenhardtia polystachya, 1993				- '	00	573	Stanislaus NF, Calif.		R. Witters & K. "Witters" Fritsche J.R. Hall
11	Texas, <i>Eysenhardtia texana</i> , 2003		49	21	1 2	!5	76	Court or		ont trail
П	LARCH		17	27				Coyote Mountain WA, Ariz. Superior, Ariz.		Peter Gierlach
1	European, <i>Larix decidua</i> . 2003 A							ouperior, Ariz.		K. Morrow, K. Stiles, M. Hallen
1	Subalpine, <i>Larix Iyallii</i> , 1993		188	90	78	3	298	Northfield West		, a outos, in hallen
1	Western, <i>Larix occidentalis</i> , 1999		236	94	56	ì	344	Northfield, Washington Co., Vt. Wenatchee NF, Wash.		Robert Stanton
1	LAURELCHERRY		273	162	34	!	444	olo NF, Missoula Co., Mont.		Stephen Arno & Jeff Hart
1	carolina, Prunus caroliniana, 2003		132	5				oo, Mont,		Helen Smith & Micha Krebs
1	English, <i>Prunus laurocerasus</i> , 1987∆		96	48 32	46		192 H	arris Co., Texas		
ı	LEADWOOD			32	52		141 S	eattle, Wash.		Paul Kisel
ı	Krugiodendron ferreum, 1993 LEBBEK		70	37	27					Arthur Lee Jacobson
l	Albizia lebbeck, 1968∆			0,	27	1	114 M	onroe Co., Fla.		R. Rose
	LEUCAENA		257	65	95					n. nose
1	Great, Leucaena pulverulenta, 2002				30	3	46 La	haina, Hawaii		L.W. Bryan
	Littleleaf, <i>Leucaena retusa</i> , 1986		33	27	26		67 Au	10 10 10 10 10 10 10 10 10 10 10 10 10 1		-ivi. Bryan
	LIDFLOWER		33	21	26		il Ter	dubon Sabal Palm Grove Sanctuary,	Texas	Joe Ideker
	Pale, Calyptranthes pallens, 1993						101	rell Co., Texas		Frank T. Callahan
	LIGNUMVITAE	•	49	40	24	9	5 Vas	Cava Musoum Lo		10
	Roughbark, Guaiacum sanctum 1005							caya Museum and Gardens, Mîamî,	Fla.	Carol L. Lippincott
	ickas, Guaiacum angustifolium. 2003	_		31	39	78	St. M	lary's Star of the Sea, Key West, Fla		
	LIME	3	,	27	15	62	Alan	io, Texas	ì.	Vincent Condon & Mike Miller
	Citrus aurantifolia, 2003∆	14	1 .	14						Terry Fears
	LOBLOLLY-BAY		•	21	15	39	Phoe	nix, Ariz.		
	Gordonia lasianthus, 1993	164	9	5	en	•				Larry B. Wright & Russell T. Gates
	LOCUST		•	•	60	274	0cala	NF, Fla.		Dohart or
	Black, <i>Robinia pseudoacacia</i> , 2001 Clammy, <i>Robinia viscosa</i> , 1996	312	94	1 4	8	499				Robert Simons & Daniel B. Ward
	New Mexico, Robinia geometricano const	19	35	. `	1	423 59	Living:	ston Co., N.Y.		3. Weidman
	New Mexico, Robinia neomexicana, 1997*	79	79		_	166	Coconi	cal Gardens, Highlands, N.C. no NF, Ariz.		iiii Wykle
	LOIEBUSH	90	71	2	~	168	Tonto A			udy Thornburg
	Ziziphus obtusifolia, 1999							11 0112.		like Hallen & George Kieren
	LYONIA	14	26	20	)	45	San Pec	Iro River, Pima Co., Ariz.		
	Tree, Lyonia ferruginea, 1998	25						ATIZ,	To	m Butler
	LYONTREE	35	45	30	1	88	Seminol	e Ranch Conservation Area, Fla.		
	Lyonothamnus floribundus, 2003	34	40					Tales, Fla.	Ma	ry Keim & Randy Snyder
	LYSILOMA	U-4	46	16	8	4	Catalina	lsi. Conservancy, Los Angeles, Calif.	_	
1	Bahama, <i>Lysiloma latisiliquum</i> , 2003 Littleleaf, <i>Lysiloma m</i>	166	49						Art	Cowley
	Littleleaf, <i>Lysiloma microphyllum</i> , 1998 MADRONE	54	33	62 39	23	1	Dade Cou	nty, Fla.	D.	and P as .
A	Arizona, Arbutus arizonica, 1997			JJ	97	1	Central A	rizona College, Ariz.	Riti	ert F. Mulgrew & Susan Formenth Kinnison
P	acific, Arbutus menziesii, 2003	176	42	46		_			201	INGUII
,,,	skas, Arbutus texana, 1999	316	88	116	230 433	E .	ast Sawr	nill Canyon, Coronado NF, Ariz.	Tom	Harlan
IV.	AGNOLIA	175	26	50	214	_	ig Sur La Încoln NF	iiu irust, Carmel Valley Calif		Washburn
As	she, <i>Magnolia ashei</i> , 1993					-1		IV. MEX.		Rossacker
		55	52	37	116	Не	enry Fodo	for Botanici Dante		
28	BIG TREE REGISTER							for Botanici Restoratn., Gladwyn, Pa	. J. He	nry, R. Steiger, R. Langford
										<b>V</b>

	COMFERENCE	* H	EIGHT	\$P	REAG	TOP	AL POINTS	
Bigleaf, Magnolia macrophylla, 2002						200	LOCATION LOCATION	The state of the s
Gucumpertree, Magnolia acuminata acon		88	70		56	17	2 Garrett Park, Md.	WORKHAROR
rrasici, magnolia traseri. 1998		88	79		88	389	9 North Contact Co.	Mont
Pyramid, Magnolia pyramidata, 1999		18	121	3	33	247	North Canton, Stark Co., Ohio	Montgomery Co. Md. Forestry Bo Jeremy R. Felland
Southern, Magnolia grandiflora 1004		6	84	3	0	138	Great Smoky Mountains NP, Tenn.	Jeremy R. Felland
Sweetbay, Magnolia virginiana 2004	26	Terry	98	9	0	389	Greensboro, Gadsden Co., Fla. Jones Co., Miss.	Jess & Doug Riddle
umbreна, Magnolia tripetala, 1993	17		93	7	1	287	Cumberland to	Arthur & Meredith Frassand Jeff Yelverton
MAHOGANY	12	2	50	50	)	185	Cumberland Island, Ga. Bucks Co., Pa.	C. Ruckdesphal on a
West Indies, Swietenia mahagoni, 1992							-33/4 CU., Pa.	C. Ruckdeschel, C.R. Shoop,M.N. Hopki John Swartley
MANCHINEEL	175		79	96		278	C4 se	Gwartiey
Hippomane mancinella, 1993							St. Mary's Star of the Sea, Key West, Fla.	Week-
MANGO	56		46	51				William S. Hubard & B. Wang
Mangifera indica, 1992∆				0,	,	115	Watson Hammock, Fla.	
MANGROVE	346		94	04				J. Parks, J. Andrew, D. Ward
Red. Rhizanhara			<b>-</b>	91	4	63	Hilo, Hawaii	
Red, Rhizophora mangle, 1995	47		-0					Robert & Katherine Van Pelt
MANZANITA	***	5	58	42	11	6	J.N. "Ding" Darling NWR, Fla.	
Big, Arctostaphylos manzanita, 1989	00						o Jaming Mwk, Fla.	Amy Bennett & R. Workman
- guoity, Arciostaphylog gloves done	92	2:	_	32	12	2	Austin Creek Co	and an workman
- godil j, Alciostaphylne glave	52	33	3	43	96	3	Austin Creek SRA, Guerneville, Calif.	Roger Raighe a o
mgic, Arctostaphylog primatel ac-	46	43	3	22	95		Sunol Regional Wilderness, Calif. Alameda Co., Calif.	Roger Raiche & Greg de Nevers E. Lagel
mgic, Attiostablishes primate: 4000	36	17		23	59	Ċ	oconino NF, Ariz.	Art Cowley
Arctostaphylos viscida 2004	37	18		14	59	C	oconino NF, Ariz.	
WAPLE	91	24	- 2	24	121	Ti	Jare Co., Calif,	David & Judy Thornburg
igleaf, <i>Acer macrophyllum</i> , 1995						-	ou, can,	K. Morrow, M. Hallen, C. Mills Art Cowley
ack, Acer nigrum, 1987	419	101	9	0	543	CI	***	and oursely
nyon, Acer grandidentatum, 1998	198	118	12	7	348	OI:	atsop Co., Ore.	Marin - 1 -
alk, Acer leucoderme, 2003*	139	75	50	)	227	Ali Te-	egan Co., Mich.	Maynard Drawson
	38	50	42		99	101	nto NF, Ariz.	Harold Nett & Paul W. Thompson
					-0	MD	unt Berry, Ga.	Rick Heffernon
	CONTRACTOR OF THE PARTY OF THE	-						Richard & Teresa Ware

### 'FISHING' FOR BIG TREES

hen the phone rings at the Murray residence, there is a good chance the caller's asking how his big tree stands up to reigning champion trees. The person who usually answers those calls is 14-year-old Holly, and she "gives me that look," says Joe Murray, the one



that says let's head out to some local home, park, or wooded area to ID and measure a tree. And—just maybe to exchange some "fishing" stories about big trees.

"Just like people, trees tell stories; the older the trees, the better the stories," Joe says. Joe and Holly help measure trees for both the National Register of Big Trees and Virginia's Big Tree Registry.

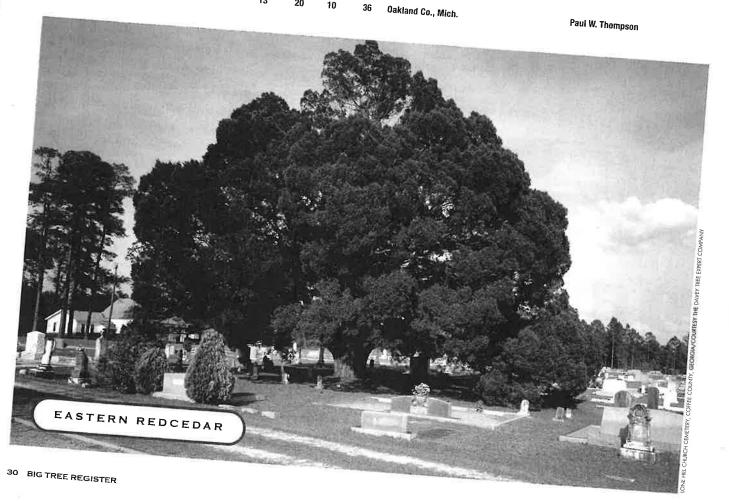
"I thought my dad was going a little crazy on big trees," says Holly, "but after meeting big tree hunters from across the United States [at an American Forests national training workshop in 2003] I see that he is not alone."

Knowing that the majority of Virginia's big trees are in urban areas, the father-daughter team started a big tree registry in their hometown of Staunton.

Their goal: to increase community awareness of local big trees and their benefits.

Well, there may be an ulterior motive, too. "My dad may be impressed with tree circumference," Holly adds, "but I'm looking at the tree for climbing possibilities!"

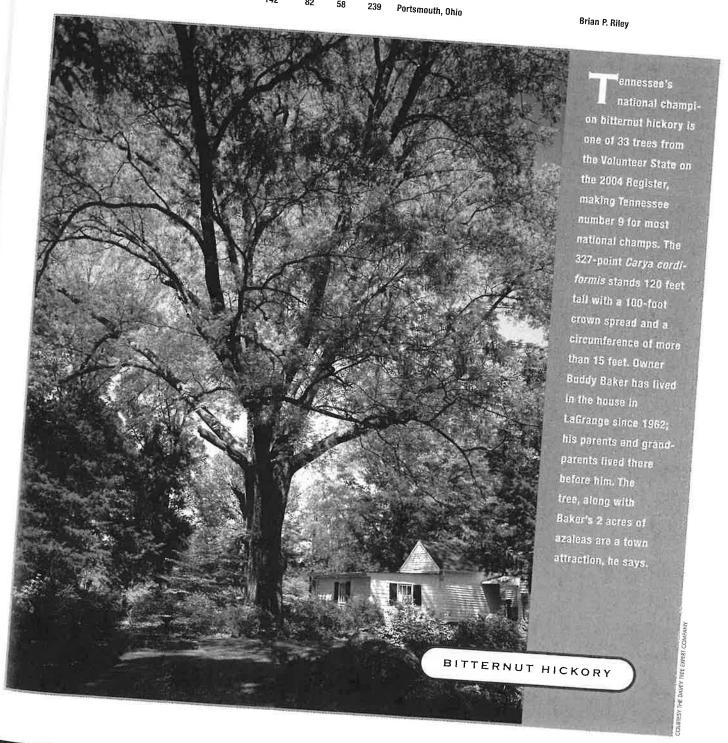
	MFERENC	E»	HEICHT	56	READ!	9107	AL POINTS	
Chalk, Acer leucoderme, 1999*							LOCATION	A THE PARTY OF THE
Fiorida, Acer barbatum, 2002		34	54	1	50	10	1 **	ROMINATOR
Mountain, Acer spicatum 1002*		146	91		75	25	Mills Forest, Jackson O. o.	a, Rill Loss o
mountain, Acer spicatum 2000*		33	58		31	99	mount berry, da.	
Mulway, Acer platanoides 1005*		34	62		20	101	Mich.	R. & T. Ware, Pat Tomlinson
Mulway, Acer platanoides 2001*	2	30	70		78	320	y wountain, Ga.	R. Krentzer & Pat Thompson
Heu, Acer rubrum, 1997	2	12	79	10	00	316	ourinvan. Pa	Jimmy Mock
Rocky Mountain, Acer glabrum 1000	2	76	141		8	439	Kenyon College, Ohio	R. Heilman, G. Odato, F. Heilman, T. Fry, C. Hub
onver, Acer saccharinum 2002	10	07	67	5		188	Great Smoky Mountains NP Tone	John Augnanbaugh & Brian P Dura
Striped, Acer pensylvanicum 1007	34	17	115	6	76	477	Guernes Island, Island Co. Week	will Blozan
ougal, Acer saccharum, 2004	4	4	77	3		129	Mewderry, Luce Co., Mich	Robert Van Pelt & Ron Brightman
Vine, Acer circinatum, 2003	22	3	115	89		360	Tillium Gap Tr., Great Smoky Mtne, No. T.	Guaries Wade & David Mitchell
MAYTEN	38	3	64	37		111	Amel politic	
Florida, Maytenus phyllanthoides, 2003				35		111	Olympic NP, Wash.	Glenn Dreyer
MEXICANI	22		19	26				Robert Van Pelt
MEXICAN-BUCKEYE				40		48	Boyce Thompson Arboretum, Superior, Ariz.	
Ungnadia speciosa, 2003	40						authoritor, Ariz.	K. Morrow, K. Stiles, M. Hallen
MESQUITE	12		22	17	:	38	Fort Worth, Texas	
Honey, Prosopis glandulosa var. glandulosa, 2000 Screwbean, Prosopio aut							reads	Steven Houser
	172		55	89	24	19	Noor Land	
Tosopis velutina 1002	48		27	37	8	-	Near Leakey, Real Co., Texas	Rannia W. D
wstrn noney, Prosopis alanduloes use to	196		46	60	25		Reeves Co., Texas	Ronnie W. Pendley Oscar Mestas
	03 104	3	33	83	158	•	Santa Cruz Co., Ariz.	Gilbert Sykes
Drypetes diversifolia, 1994							fulare, Calif.	Art Cowley
MOUNTAIN-ASH	39	4	6	18	00		14	Art Cowley
American, Sorbus americana, 1979					90	K	ey Largo, Fla.	
European, <i>Sorbus aucuparia</i> , 2003∆	80	62	, ,	ın				Vincent P. Condon & William G. Miller
ireene, Sorbus scopulina, 1993	121	46		10	152	W	est Virginia SP, W. Va.	
howy, Sorbus decora, 1982	24	14			179	Se	attle, Wash.	Richard Salzer
itka, <i>Sorbus sitchensis</i> , 1981	57	58	4		43	Fir	ich Arboretum, Spokane, Wash.	R. Van Pelt & A. L. Jacobson
1 O LI N.T.A. I.	19	50	U.		123	wia	ckinac Co., Mich.	A. L. Jacobson & R. Brightman
OUNTAIN-HOLLY	450	50	18	5	74	Gar	diner, Ore.	William J. Mahalak
emopanthus collinus, 1982	13	-						Lance Morgan
	13	20	10		36	0ak	land Co., Mich.	
THE RESERVE TO SERVE THE PARTY OF THE PARTY								Paul W. Thompson



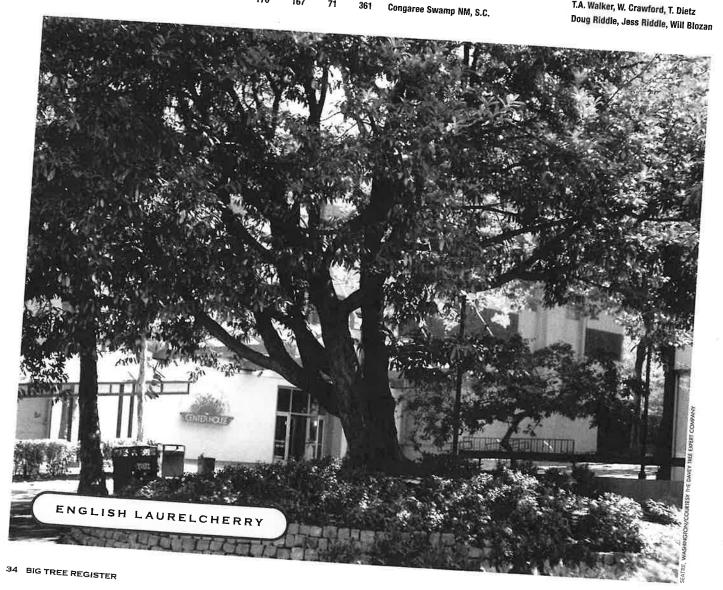
MOUNTAIN		FERENDE	HEL	GAT	SPRE	AO' TOTAL	POINTS	LOCATION	
MOUNTAIN-LAURI Kalmia latifolia, 1999*	ЕL							The saliture	MOMINATOR
Kalmia latifolia, 1999*			56	20	19		-		The state of the s
			48	25			Fannin Co., Ga.		
MULBERRY					18	78	Great Smoky Mtns.	NP, Tenn.	George C. Hoffman
Black, <i>Morus nigra</i> , 1999∆ Red, <i>Morus rubra</i> , 1999		25	52	78	70	1-2550			Will Blozan
Texas, <i>Morus microphylla</i> , 2000		30		70 52	76 52	0.10	Westminster, Carroll	il Co., Md.	porter delice (A)
White, <i>Morus alba</i> , 1992∆		10		30	52 48		rayette Co., Tenn.		Beth Sanders
MULI FINI NI		292		59	48 73	142	Presidio Co., Texas		David Smith
MULLEIN NIGHTSH	ADE				13	369	Johnson Co., Mo.		Oscar Mestas
2002 Suanum erianthum 2002		13		16	17				Susan Troxel
MYRTLE-OF-THE-RI	VER				17	33	Hidalgo County, Texas	s	
7 - Landies Zuzygium, 1997		9	,	22					William MacWhorter
NANNYBERRY		•	•		4	32	Key Largo Hammocks	State Rotanio	ol Cia. m
Viburnum lentago, 1994		34	_	^				PotatiiCS	al Site, Fla. Joseph Nemec
NOLINA		34	5	U	40	94 (	akland Co., Mich.		
Bigelow, <i>Nolina bigelovii</i> , 1997		100					,		Paul W. Thompson
OAK		125	13	i	8	140 C	abeza Prieta NWR, Yui	Ima C	
Ajo, Quercus turbinella var. ajoensis, 199	8	200					······································	ma Go., Ariz.	Tom & Anita Harlan
winte, quercus arizonias noss	-	82	35	4	10	127 Or	gan Pipe Cactus NM,	0-1-	
randisas, quercus arkansana 2000		210	42	6	5	268 Sa	nta Cruz Co., Ariz.	ACIZ,	R. and G. Zahner, K. Morrow
ocal, quercus Ilicifolia, 2002		150 49	100	104		276 Co	vington Co., Miss.		David & Paul Thornburg
Bigelow, <i>Quercus durandii</i> var. breviloba,	1999	49 111	41	34		99 Sh	enandoah NP, Va.		Bryant E. Brown & Jon Wallace
quereus veiutina, 2002		332	54 oc	38		175 Wil	liamson Creek, Travis	Co Tour	Hichard Salzer
Blackjack, Quercus marilandica, 1999		144	96 04	96		AIII	ia, III.		Mark Baker
bide, quercus douglasii. 2001		276	94 112	65		254 Byre	on Methodist Church.	Peach c	Larry Mahan
Bluejack, <i>Quercus incana</i> , 2003*		83	68	83		- 1414	re co., calif.		- , , coroll
Bluejack, <i>Quercus incana</i> , 2003* Bluejack, <i>Quercus incana</i> , 2003*		87	61	45		162 Mixo	in, Cherokee Co., Texa	as	Art Cowley & Dan Busby
Bluejack, <i>Quercus incana</i> , 1992* Bur, <i>Quercus macrocarpa</i> , 1995		88	56	45 85		as Mine	ola, Wood Co., Texas		Gregory Dean Stockton
California black Querous 1	3	322	96	65 103		ou Pasc	o Co., Fla.		William Godwin
California black, <i>Quercus kelloggii</i> , 1972 Canyon live, <i>Quercus chrysolepis</i> , 2001			124	115		44 Paris			Michael W. Kenton
Chapman, Quercus chapmanii, 2004	3	45	69	121		91 Siskij	ou NF, Ore.		Owen H. Robinson
onerrybark, Quercus falcata var		83	51	57	14	Tulare	Co., Calif.		Ralph King
Cherrybark, Quercus falcata var. pagodifolia, Chestnut, Quercus prime pago	2003* 33	32	123	122	14 48		NF, Fla.		Mike Cobb & Art Cowley
, decreas printes, 7002	1991* 32			136	482		Co., Tenn.		Robert W. Simons David Smith
Uninkapin, Quercus muehlenhardi 1000	27		99	98	396		Co., Va.		
omous, quercus graciliformie 1000	28:		75	106	384				Byron Carmean & Gary Williamson Tom Mayer & Jeanine Ove
ouast live, Quercus agrifolia 1000	65	5 (	66	36	140		a, UNIO		Jim Noe & Marilyn Ortt
variington, Quercus hemicabaarias sass	338		58	75	415	Julian,	id NP, Texas Calif		James E. Liles
mgton, quercus hemienhaorica nocas	226	•	19 1	34	359	- minant			Clint Powell
post, quercus stellata var natura-	216			19	354	- manual C	Ve Golf Course		Gordon Ward & Daniel Ward
1 440,003 000000, 1995*				95	318	Morehou	Me Golf Course, Ft. Be Ise Parish, La.	enning, Ga.	Daniel Milburn & Scott Long
Dunn, Quercus dunnii, 1999*	83	37	•	36	129	Yavapai	Co., Ariz.		Wayne Roberts
Durand, Quercus durandii var. durandii, 2002	85	35		10	130	Joion, Ca			Lora Morrow
ominapin, quercus princidos anos	76 41	70			155		ods WMA, Ga.		Frank T. Calllahan & Art Cowley
moryi, 2001	222	25	197		72	Salem, N	≥, ua. ≥b.		marshall & Scott Adams
Engelmann, Quercus engelmannii, 2003	240	81	72	3 2	321	Catron Co			G. Sternberg, J. Evertson, J. Lockley,
Linguisti, quercus robur, 2001 A	192	28	35	. 8	277	Julian, Sa	n Diego Co., Calif		m. meiendrez, G. Sternberg, T. Buchanan
Gambel, <i>Quercus gambelii</i> , 2003 Georgia, <i>Quercus gambelii</i> , 2003	219	104 106	89		318	State Capi	tol, Olympia, Wash		Clinton S. Powell
Georgia, <i>Quercus georgiana</i> , 1999 Graves, <i>Quercus gravas</i> , 1999	73	75	64		141	coconino i	NF, Ariz.		Robert Van Pelt
Graves, Quercus gravesii, 1982*	154	75 42	63	11.50		Athens, Ga			S. Poppenberger, H. Untiedt,
iraves, <i>Quercus gravesii</i> , 1976* ray, <i>Quercus grisea</i> , 2001	145	42 51	40		06	Big Bend N	P, Texas		Lucia Duncan-Harrison
avard, <i>Quercus havardii</i> , 1986	237	55	41	20	06	Amistad Re	creation Area, near Do	el Rio Tau	James E. Liles
terior live. Quercus	40	30	37	30		Translate II	r, N. Wex.		B. Simpson, J.J. McEntire, J.B. Norris
terior <u>li</u> ve, <i>Quercus wislizeni</i> , 2001 icey, <i>Quercus glaucoides</i> , 2003	252	51	23	7	6	Yoakum Co.	, Texas		W. Melendrez, G. Sternberg, T. Buchanan
urel, Quercus laurifolia, 1987*	114	53	73 74	32	1 1	Near Stockt	on, Calif.		C. Murrell Thompson
urel, Quercus laurifolia, 1987*	257	82	106	186	6 N	Magic Sprin	gs Ranch, Blanco Co	Texas	Darold Mac Dannald
e, Quercus virginiana var. virginiana, 1976*	258	80	114	366	. 5	onnbcava	va.		David Vaughn
e, Quercus virginiana var. virginiana, 1976*	439	55	132	367	_	kaloosa Co	, Fla.		R. & E. Lehman & Byron Carmean
xican blue, <i>Quercus oblongifolia</i> , 1999	411	77	140	527	N	ear Lewisbi	ırg, La.		Geoffrey A. Cummings
nr, Quercus mohriana, 2001	120	65	69	523	W	are Co., Ga.		8	John deMarche & La. Forestry Assoc.
eat, Quercus rugosa, 1992	37	18	20	202 60	200	dalgo Co., N	i. Mex.		Jimmy Mock Samuel Lamb
thern red, <i>Quercus rubra</i> , 2001	88	47	36	60 144	Gu	iadalupe Mo	ountains NP, Texas		
ruma, 2001	405		102	511	Sa	nta Catalina	Mountains, Coronado	NF, Ariz.	T. Buchanan, M. Melendrez, G. Sternberg
				311	IVIO	nroe Co., N	.у.		Robert Zahner & James W. Smith Dan Dinero

	SPECIES/MEASUREMENT	GSHOUN	FERENCE	MEIG	nr si	PREAD!	TOTAL FOI	The state of the s		
	Nuttall Quarous							LOCATION	HOMILE	oron a
HII	Nuttall, <i>Quercus nuttallii</i> , 1991* Nuttall, <i>Quercus nuttallii</i> , 1991*		2	60	110	96	394	Andrew Posteriore		WANTE OF THE REAL PROPERTY.
	oglethorpe, Quercus palethornene	ie 1000	2	58	115	85		Washington Co., Miss.	Clyde Hamberlin	
	oregon write, Quercus garryana 1	18, 1999 994			79	82		Morhouse Parish, La. lear Lexington, Ga.	William E. Burns	
IIII	Overcup, quercus lyrata, 1987	•••	27			72	388 D	ouglas Co., Ore.	Samuel Jones	
IIII	Pin, <i>Quercus palustris</i> , 2003*		25				444 L	ewiston-Woodville, Bertie Co., N	Allen Silveus	
111	Pin, Quercus palustris, 2001*		24	_	350		037 D	avies Co., Ky.	Contende &	Tom White
	Post, Quercus stellata var. stellata,	1996			. 6		396 M	iddlesboro County Club, Middlesi	Scott Eckstein	
	Sand live, <i>Quercus virginiana</i> var. <i>gu</i> Sand post, <i>Quercus stellata</i> var. <i>mai</i> Sandpaper, <i>Quercus stellata</i> var.	<i>eminata</i> , 1995	189		1 10			nerson, Jackson Co., Ga.	boro, Ky. M. Harp, L. Johnso Jimmy Mock	n, D. Carmical
Ш	Sandpaper, Quercus pungens var. pu Shingle, Quercus in but	garetta, 1995	157	8	_			inesville, Fla.	Robert W. Simons	
	Total Tubical Supplication 1007		13	1	8 2	_		rianna, Fla. ronado NF, Ariz.	Robert T. Ing & Dan	iol P Ward
Ш	Silumard, Quercus shumardii yar aba	imardii onno	208	105	-			cinnati, Ohio	Ken Morrow	iei B. ward
	4 dellas liventencoides on	10-4	286	120		43	30 Pov	vell Co., Ky.	A. P. Newman & R. I	3ernhard
	Southern red, Quercus falcata una del		158 312	85			66 Cor	onado NF, Ariz.	Raymond Hayes	
11	onestitut, quercus michausii	2003	266	150	2002		1 Tho	maston, Upson Co., Ga.	Ken Porter & Mike H	allen
П	- vality willte, quercus bicolor 2000		300	140 68		10,	5 Big	Oak Tree SP, Mo.	C. Bowie, J.A. Osbol	t, G. Hill
П	Texas, Quercus shumardii var. texana,	2003	198	70	49 82	380	0 High	land Co., Va.	Bruce Palmer	
	Texas live, <i>Quercus virginiana</i> var. <i>fusi</i> Toumey, <i>Quercus toumeyi</i> , 1994	iformis, 2002	357	48	80	289	Fort	Worth, Tarrant Co., Texas	P. Williamson, G. Williamson	), B. Cannean
1	Turbinella, Quercus turbinella var. turbi		68	27	33	452 103	Grah	am, Young Co., Texas	Matthew & Michael I Jay Burkett	Blevins
1	Turkey, Quercus laevis, 2003	inella, 2003	81	51	48	144	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	osa Lookout Trail, Coronado NF	Ariz. Robert Zahner	
1	Valley, Quercus lobata, 1984		113	93	90	229	opini	9 Woulitain Ranch SP, Nev		
	Vasey, Quercus pungens var. vasevana	2002*	348	163	99	536	13374	g Spring Community, Barnwell Co of Covelo, Calif.	o., Ga. James G. Fowke	
1	y ductous pungens var vacavana	1996*	47	50	34	106	Big Be	nd NP, Texas	Willis Linn Jepsen	
1	water, quercus nigra, 1996*		61 278	39	32	108	Val Ve	rde Co., Texas	James E. Liles	
1	Water, Quercus nigra, 2000*		286	120	111	426	Rosela	nd Plantation, Concordia Parish,	B. Simpson, J.J. McEnt	ire, J.B. Norris
	White, <i>Quercus alba</i> , 2004		312	118 86	108	431	Julies	o., Miss.	Kevill Bridgewater	
	Willow, Quercus phellos, 2003		305	112	116 136	427	Lawren	ceville, Va.	Herman Smith	
	OLEANDER Nerium electric acces			112	130	451	Eastvill	e, Northhampton Co, Va.	Frank E. McKeever	
	<i>Nerium oleander</i> , 2003∆* <i>Nerium oleander</i> , 2003∆*		55	28	25				Ralph Dodd & Jack Will	tins
	Nerium oleander, 1997∆*		52	26	25 28	89	Sun City	, Ariz.	Lorent D. Was a con-	
	ORANGE		46	29	36	85 84	Sun City	, Ariz.	Larry B. Wright & Russel	I T. Gates
	Citrus sinensis, 2001∆					04	Exeter, C	alif,	Larry B. Wright & Russel Art Cowley	I T. Gates
	Sour, Citrus aurantium, 2003∆	(	51	34	31	103	V 0		- Hay	
	OSAGE-ORANGE	1	8	24	17	46	Kern Co.,	Calif.	Art Cowley	
	Maclura pomifera, 2002						Omv. of A	riz. Campus Arboretum, Ariz.	Libby Davison	
	OYSTERWOOD	32	6	60	64	402 (	Charlotte	0- 4		
	Gymnanthes lucida, 1998						OUBLIGHE	co., va.	Red Hill Shrine	
	PALMETTO	15	5 ;	24	11	41 L	ianumvit	20 K B		
	Cabbage, Sabal palmetto, 1994							ae Key Botanical State Park, Fla	a. Michael Cullen & David Sir	nelais
	Dwarf, Sabal minor, 2003*	69	-	0 1	4 1	33 L:	afayette (	o Ele		ioiqii
	Dwarf, Sabal minor, 2003*	43	_	8 1	3	74 B	razoria, T	70., FIB. Prac	Jerry N. Livingston	
	Mexican, Sabal mexicana, 1995*	42 61	_		2 (		razoria, Te		Mickey Merritt	
	Mexican, Sabal mexicana, 1995*	61	50	`	•	l5 Hi	dalgo Co.	, Texas	Edward C. Fritz	
	PALOVERDE	0.	45	20	11	1 Sa	ın Benito,	Cameron Co., Texas	Joe Ideker & Bill McWhorte	г
	Blue, Cercidium floridum, 2003	87	42						Sue Griffin	
	Texas, Cercidium texanum, 1995 Yellow, Cercidium and	37	42 34			5 Hye	der, Mario	opa Co., Ariz.	Barris I and Australia	
	Yellow, Cercidium microphyllum, 2003 PAPAYA	43	29	34 43	•	) Las	s Palomas	WMA, Texas	Mike Hallen & Chuck Hocka	Jay
	Carica papaya, 1995∆			70	83	Mo!	bile, Mari	copa Co., Ariz.	Joe Ideker Mike Hallen	
1	PAPER MALL	27	17	11	4-				ance uquell	
E	PAPER-MULBERRY Boussonetia papyrifera, 1991∆		•••	• • • • • • • • • • • • • • • • • • • •	47	Hon	nestead, F	Fla,	R. Workman	
F	PARADISE —	157	75	55	240					
S	PARADISE-TREE Simarouba glauca, 1994			00	246	Flam	ingo Trop	ical Gardens, Ft. Lauderdale, Fla.	. David Bar-Zvi	
P	PARASOLTREE	109	63	59	107				. Sasia Bal-7Al	
CI	hinese, Firmiana simplex, 2003∆			• • • • • • • • • • • • • • • • • • • •	187	Fort I	Lauderda	le, Fla.	A. Ruckley User L.	
Р	AULOWNIA	141	47	36	107				A. Buckley, Hendrickson, R. Tri	ckel
Ro	Oyal, Paulownia tomant				197	San D	Diego Co.,	Calif.	Art Cowley	
Р	yal, <i>Paulownia tomentosa</i> , 2003∆ AUROTIS-PALM	285	57	66	250	p			vonicy	
Acc	oelorrhaphe wrightii, 1995*				359	rieitz	Memorial	High School, Evansville, Ind.	Scott C. Wanner P	7
Acc	oelorrhaphe wrightii, 1995*	13	32	4	46				Scott C. Wagner & Mary Ellen J	ones
32	BIG TREE REGISTER	10	34	4	46 45	Fairati	Palm Bead	h, Fla.	Michael Zimmerman	
						· an Cill	uu iropica	al Garden, Miami, Fla.	Don Evans & Daniel B. Ward	
									·· o. maiu	

PAWPAW	CIRCUMFERENCE"	HEIGHT!	SPREA	D' TOTA	LOCATION	
Common, Asimina triloba, 1986 Smaliflower, Asimina parviflora, 1993 PEACH Prunus persica, 1986* $\Delta$	26 21	63 24	29 17	96 49	oncoapeake, va.	Byron Carmean & Gary Williamso
Prunus persica, 1994*∆ PEAR	72 50	18 37	32 25	98 93	Bealton, Va. Lusby, Md.	H. Terrell Davis  Richard Salzer
Common, <i>Pyrus communis</i> , 1991∆ PECAN Carya illinoensis, 2000	174	59	56	247	Waitsburg, Wash.	John Zyla
PEPPERTREE → Chinus molle, 1999∆	267	136	111	431	Cocke Co., Tenn.	R. Van Pelt, S. Muse, M. Drawson W.K. Remine
razil, <i>Schinus terebinthifolia</i> , 1991∆ PERSIMMON	367 166	57 35	72 52	442 214	San Juan Capistrano, Calif. Broward Co., Fla.	Ray Wheeler
nmmon, <i>Diospyros virginiana</i> , 2003*	142	82	58		Portsmouth, Ohio	John W. Kern Brian P. Riley



Texas, <i>Diospyros texana</i> , 1972		-	1		TAL POINTS LOCATION	ROMSHATOR
PIGEON-PLUM	6	8 20	6 32	2 10	02 Uvalde Co., Texas	
Coccoloba diversifolia, 1994	84					William Graves
PINCKNEYA	04	49	22	13	9 Simpson Park, Miami, Fla.	
Pinckneya pubens, 1991					, and in the	Harold Nett
PINE	. 10	21	7	33	3 Marion Co., Fla.	
Apache, Pinus engelmannii, 1998*						Robert T. Ing & Daniel B. Ward
Apache, Pinus engelmannii 1000*	127	108	44	246	Mt. Wrightoon Wa. a	waig
Arizona, Pinus ponderosa var. arizonica 1000	121	112	38	243	Mt. Wrightson WA, Coronado NF, Ariz.	R. & G. Zahner & K. Morrow
. aotrian, Fillus nigra, 1991	153	127	57	294	Mt. Wrightson WA, Coronado NF, Ariz.	Ken Morrow & Mike Hallen
Bishop, <i>Pinus muricata.</i> 2001	129	114	49	255	Santa Catalina Mtns., Coronado NF, Ariz. Lincoln Park, Tacoma, Wash.	R. & G. Zahner & K. Porter
Solander's, Pinus contorta var holandari 1000	117	70	69	204	Fort Bragg, Mendocino Co., Calif.	Robert Van Pelt
order pinyon, PINUS discolor 1000	58	76	18	139	Jughandle State Reserve, Calif.	Frank T. Callahan
minuahua, Pinus leionhylla var akir.	64	32	37	105	Pusch Ridge WA, Coronado NF, Ariz.	Robert E. Sholars
and account, Finus aristata var aristata tara		87	34	217	White Mountain Appare B	
Title aristata var prietate topo	132	76	39	218	White Mountain Apache Reservation, Ariz. Carson NF, N. Mex.	Dave Borland & Lucky Holden
Throng i mus courters, 2001	138	72	33	218	Colfax Co., N. Mex.	S. Edmonds, J. Crellin, W. Hurst
gger, Pinus sabiniana, 2002	152	141	72	311	San Diego Co., Calif.	Joel B. Cotton
stern white, Pinus strobus, 2003	178	120	77	317	Tulare Co., Calif.	Art Cowley & Clint Powell
Ktall, Pinus balfouriana, 1982	229	125	72	372	Morrill, Maine	Art Cowley
ermntn. bristlecone, <i>Pinus aristata</i> var. <i>longaeva</i> , 2003 ck, <i>Pinus banksiana</i> , 1005	310 466	76	34	401	Trinity NF, Calif.	Elsie Bowen
- annoiana, 1995	116	52	44	518	Humboldt-Toiyabe NF, Nev.	Stanley G. & Richard S. Moore
obcone, Pinus attenuata, 1976	135	56	61	187	Lake Bronson SP, Minn.	Robert Van Pelt
ber, Pinus flexilis, 1988	275	117	66	269	Shasta Co., Calif.	Steve Morgan & Rick Olson
10113, Fillus taeda, 2003	176	58	46	345	Uinta NF, Utah	Paul Caster
		167	71		Congaree Swamp NM, S.C.	T.A. Walker, W. Crawford, T. Dietz Doug Riddle, Jess Riddle, Will Blozan

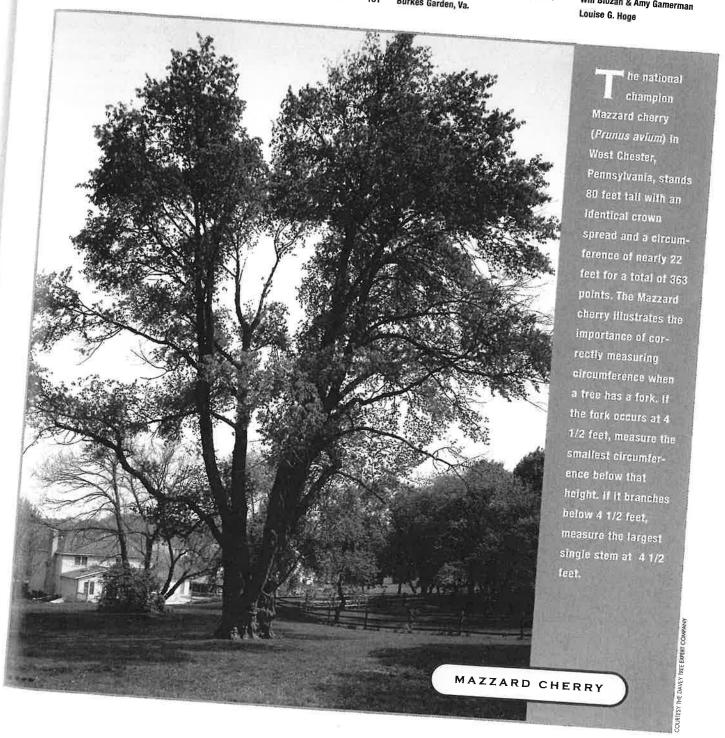


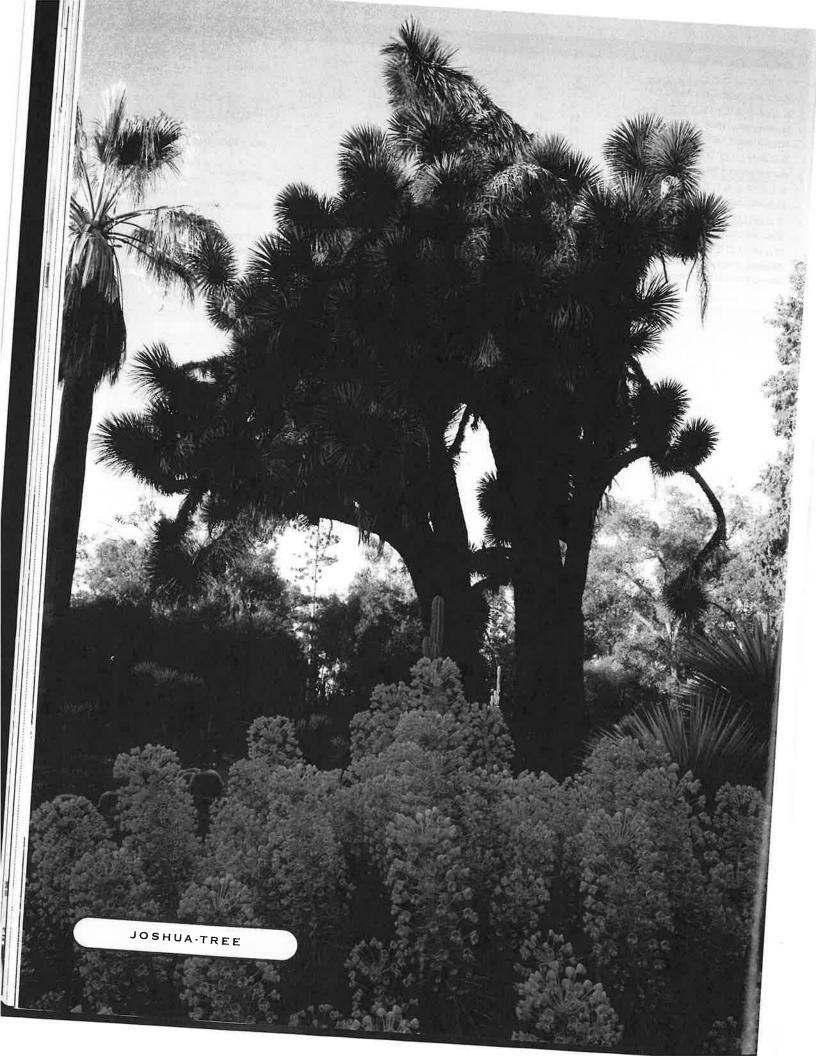
~~~96	Dole Pinus saus		-		IGHT'		EAD' TOT	AL POINTS	LOCATION	
Longle	pole, <i>Pinus contorta</i> var. <i>latifo</i> af, <i>Pinus palustris</i> , 1999	lia, 1999		132	155		22	100000000000000000000000000000000000000	AND PROPERTY.	NOMINATOR
Mexica	III Dinyon <i>Din</i>			127	120		32 29	randy co., mano		
Monter	ın pinyon, <i>Pinus cembroides</i> , 1 ey, <i>Pinus radiata</i> , 2003	1982	1	11	66	4	6 26			S. Keaffer & T. McManus
Parry p	invon <i>Pinus auta</i> , 2003			48	200			Big Bend NP, Texas		Terrell L. Brooks
Pinvon	inyon, <i>Pinus quadrifolia</i> , 1976			86	53	8		Carrier, Calli.		James E. Liles
Pitch. P	(two-leaf), <i>Pinus edulis</i> , 1982 inus rigida, 1998*			13	69	42		verside 60., Calif.		Alan Washburn
Pitch. P.	inus rigida, 1998* inus rigida, 1999*		14		112	52	50	Cuba, N.M.		Frank T. Callahan
Pond Pi	nus rigida, 1999*		16		99	75		White Co., Helen, Ga.		Joseph P. Szimhart
Pondero	nus serotina, 2000			_	132	40	~,0	Bradford, Merrimack	Co. N.H.	K. Jackson, P. Todd, J. Mock
Ponderes	sa, Pinus ponderosa var. ponde	erosa, 1997	1 29:	_		52	256	Pierce Co., Ga.	oo., n.n.	William Weiler
	PUIJUHITOSA VAL	erosa, 1997*	294		227	68	537	Plumas Co., Calif.		Jimmy Mock & Chris Mock
·	10011038, 1391		124		23	59	532	Trinity Alps Wilderness, Watersmeet Mich	Chart Tr.	John Bell & Philip Intorf
Poole, FILL	s resinosa, 1998*				24	60	263	Watersmeet, Mich.	Shasta-Innity N	F, Calif. Robert Van Pelt & Al Groncki
rocky (VIII),	ponderosa, <i>Pinus ponderosa</i> var. s Is clausa. 1997	CODUlonim 1	12U 140	•	26	48	258	Clearwater Co., Itasca	CD set	E.B. Ehrle, R. Zelinski, P. Thompson
		,			94	64	451	Lolo NF, Mont.	or, Minn.	Sidney Frissell & Stephen McCool
Scoton, Pil	nus sylvestris, 1983∆		97		91	42	199	Welaka SF, Fla.		Donald M. Wood & Don Campbell
Snore, Pini	us contorta var contorta tona	,	186	6	4	76	269	Lenawee Co., Mich.		Ned D. Neenan
-normon, r	""US echinata 2002*	-	138	10	1	37	248	Bryant Snobomist C		Paul W. Thompson & H. Nett
SHOLLIGAL, E	INUS echinata 2000+		123	10	5	66	245	Bryant, Snohomish Co., 1	Wash.	Ron Brightman
Sierra lodge	Pole, Pinus contonto	F21/2mm 000	135	87	7	70	240	Demorest, Habersham Co	o., Ga.	Jimmy Mock
Sierra lodge	pole, <i>Pinus contorta</i> var. <i>muri</i> inyon, <i>Pinus manatali</i>	ayana, 200	1"245	116	;	50	374	Myrtle, Union Co., Miss.		Glenn H. Coffey
Singleleaf p	inyon, <i>Pinus monophylla</i> , 1991	<i>ayana</i> , 1997		124	. 4	42		San Bernadino NF, Calif.		Miles Gulik
	CHIOTHI VAL Allianti Const.	1	164	45		10		Stanislaus NF, Calif.		Mr. & Mrs. C. Grinstead
9.40(1) 7 7710\$	elliottii var. elliottii tonos		143	129	5	9		nyo Co., Calif.		Frank T. Callahan
again i milda	Siash, Pinus alliastican		130	138	5			Machua Co., Fla.		
		sa, 1997	138	68	64		_	acksonville, Fla.		R. W. Simons & M. Meisenburg
Spruce, Pinus	glabra. 2003	174	185	111	62			ero Beach, Fla.		James R. Karels
Sugar, <i>Pinus</i> (	ambertiana, 1997		146	156	70		_	ncoln NF, N. Mex.		Sebastian River High School
Table mountai	n, <i>Pinus pungens</i> , 1984		435	209	59		319 B	enville NF, Miss.		Thomas Dix
Torrey, Pinus 1	orreyana, 1993		97	94	46		659 D	rrington, Calif.		Grace & Art Bradshaw
Washoe, Pinus	washoensis, 1997	2	45	126	130		203 St	okes Co., N.C.		Herbert E. McLean & Gary Whitson
Western white	Pinus monticola, 1991	2	43	145	64		404 Ca	rpenteria, Calif.		M. Pell, S. Williams, K. Knox, S. Knox
Whitebark, Pin	us albicaulis, 1980	3:	94	151			404 So	uth Warner Wilderness, M	lodoc co caus	cuward Scanion
PISONI	is aivicaulis, 1980	33	31	69	52			orado Mr, Gallf.	oudo oo., cant.	H.F. Bowman
Picania	٩ _		•	03	47	4	12 Sav	vtooth NRA, Idaho		Henry Carsten & Maynard Drawson
Pisonia rotunda	ta, 1994	,								Allan W. Ashton & David O. Lee
PLUM		3	8	28	14	(	69 Mor	roe Co., Fla.		
Allegheny, <i>Prunt</i>	us alleghaniensis, 1991*									Robert W. Ehrig
"" gricity, Prunu	S alleghaniencie 1004+	37	7	37	24	8	0 Jeff	Man He		
randitions, Prunu.	S americana 1002	52	?	24	32	8	4 Look	erson NF, Va.		Richard Salzer
Ganada, Prunus I	7 <i>iara.</i> 1079	39		48	36	9	e com	Haven Swim & Beach Clu den Co., Fla.	b, Roanoke, Va.	Richard Cal
Unickasaw, Prunt	IS annuctifolia 1000	50		51	48	113	uags	den Co., Fla.	R. Simon	Is I Buoke a se
THE PERSON OF TH	S UMhellata 1004	130	- 8	36	48	228	MISCO	mb Co., Mich.		ls, J. Buckner, A. Gholson, R. Godfrey
Garden, Prunus de	Omestica 1000 i	18	3	14	24		Clats	op SF, Ore.		r aut w. inompson
Klamath, Prunus s	inconca, 1993∆	130		_	48	58		sville, Fla.		William Schoppert
Mexican, Prunus n	noviceus acces	42	2	_		189		nd, Ore.		R. Ing, D. Ward, R. Simons
Mexican, Prunus n	rexicana, 2003*	65	2		19	75		th Falls, Ore.		Phyllis Reynolds
Wildange Deve	lexicana, 2003*	68	17		31	94	Harris	Co., Texas		Frank T. Callahan
Wildangen Pro-	munsoniana, 2003*	25			8	90	Hood (	o., Texas		Mickey Merritt
D. C. C.	munsoniana, 2001*	53	36	_	5	70	Dallas	County, Texas	ı	Frank L. Saffarrans Jr.
LISTACHE	<b>-</b>	u <sub>0</sub>	17	1	5	74	Lincoln	's New Salem State Histo		Steve Houser
exas, <i>Pistacia texa</i>	па, 2003							Salem State Histo		Sue Wydick & Guy Sternberg
OINCIAN	IA	18	22	16	6	44	Judes P	Poor W		, -winnery
oyal, <i>Delonix regia</i> ,	19944					•	oude K	. Bean Vstr Cntr, Langtry, Te	exas M	lark Duff
POISON		102	61	57		1-7				wall
OISON-S	DMAC		٠.	3/	1	177	Ft. Dena	ud Road, Hendry Co., Fla.		LE
oxicodendron verni)	¢ 2000*	18	20					2 1 id.	M	ichael W. Kenton
xicodendron vernix	, 1991*	23	30	19		52	Arnold, N	ld.		
OISONTR	EE	40	23	21	1	51	Chesapea		Co	lby B. Rucker
rida, <i>Metopium tox</i>	iferum. 1993							,	В,	Carmean & G. Williamson
OND-APP	LF	81	39	32	12	28	Lianum	aa K B		
nona glabra, 1989						-	A.iniiiA	ae Key Botanical SP, Fla.	Ken	Roundtree & no
ONDOVA	_ 2	125	44	47	40					ı Roundtree & David M. Sinclair
ONDCYPR	ESS		•	7/	18	1 1	Miami, Fla	•		-1.
Million dias	r. <i>nutans</i> , 2003	150	100						Card	of L. Lippincott
<i>palum distichum</i> ya			100	74	269	) B	owie, Md.			
odium distichum va PLAR										
<i>lalum distichum</i> va	nifera, 1991	165					ind,		Lawı	rence Criven & David Slade

THE REPORT AND ADDRESS OF THE PARTY OF THE P

SPECIESIMEASUREMENT	CIECUM	FERENCE	D BI	IGHT'				
White, <i>Populus alba</i> , 2003		2010		411/8	31	EAD' TO	TAL POINTS LOCAT	GN TOWN
PORTIATREE		2	239	86	12	26 3	57 01-1	ROMINATOR
Thespesia populnea, 1968∆						0,	7 Charlevox, Mich.	Elwood B. Ehrle
PORT-ORFORD-CEC		1	80	42	6	9 16	7 Kokaha u	= = = = = = = = = = = = = = = = = =
Chamaecyparis lawsoniana, 1997	AR					- 10	7 Kekaha, Hawaii	L.W. Bryan
POSSUMHAW		45	52	229	39	9 69	Cinting are a	,
Illex decidua, 1993						- 00	l Siskiyou NF, Ore.	Donald Denniston
PRICKLY-ASH		3	9	47	31	94	Coded	
Common, Zanthovatum						34	Gadsden Co., Fla.	R. Simons, J. Buckner, A. Gholson, R. Godfrej
Common, <i>Zanthoxylum americanum</i> , 199 Lime, <i>Zanthoxylum fagara</i> , 1993	4	15	5	28	38	53	Di	, and a choisen, R. Godfre
PRINCEWOOD		21	l	26	38	57	Bloomfield Hills, Mich.	Paul W. Thomspon
Exostema caribaeum, 1998						٠.	Lee Co., Fla.	Eric H. Hoyer & Norma Jean Byrd
PRIVET		22		33	19	60	Connection	
California, <i>Ligustrum ovalifolium</i> , 1999∆						00	Crocodile Lake NWR, Key La	rgo, Fla. Joseph Nemec
Chinese, <i>Ligustrum sinense</i> , 2001∆		96		30	38	136	D	- Fra Manie
Japanese, <i>Ligustrum japonicum</i> , 2003∆		107	(	62	65	185	Roanoke, Va.	Richard Salzer
RAPANEA		25	2	28	28	60	Sacramento State Capitol , C	alif. R. Van Pelt & A. L. Jacobson
Florida, Rapanea punctata, 1992							Jerome, Yavapai Co., Ariz.	David Thornburg
REDBAY		29	3	0	17	63	Sanihal E2	···
Redbay, Persea borbonia var. borbonia, 199							Sanibel, Fla.	Ferrell Johns
REDBUD	3	152	7	7	52	242	Hamilton a	
California, Cercis occidentalis, 2001						272	Hamilton Co., Fla.	Norman Nichols
Eastern, Cercis canadensis var. canadensis, Texas. Cercis canadensis		71	45		38	126	Court B	
Texas, Cercis canadensis var. texensis, 2003	2003	92	39		40	141	Santa Rosa, Calif.	E. Lagel
REDCEDAR		52	28		40		Topeka, Kan.	Mark Tyree
Eastern, Juniperus virginiana, 1997							Kendall Co., Tex.	Steve Lowe
Southern, Juniperus silicicola, 1995		242	57	6	9	316	one Will of a	
Western, <i>Thuja plicata</i> , 1999		195	75	5	2	283	one Hill Ch. Cemetery, Coffee (	o., Ga. Richard Johnston
REDSHANK	;	761	159	4	5		ircher, Alachua Co., Fla. lympic NP, Wash.	Robert W. Simons & Bill Russell
Adenostoma sparsifolium, 2002							Timpio III, Wasii.	F.W. Mathias
REDWOOD		48	23	26	6	78 W	arner Springs, Calif.	
Coast, Sequoia sempervirens, 1997*							arner Springs, Calif.	Frank T. Callahan
Coast, Sequoia sempervirens 1999*	8	67	311	101	12	203 Pr	airie Creek D. J	
Coast, Sequoia sempervirens, 1997*			307	83		51.5	airie Creek Redwoods SP, Calif didiah Smith Redwoods SP, Cal	Ron Hildebrant & Michael Taylor
RHODODENDRON	95	50	321	75	12	90 Je	didiah Smith Redwoods SP, Cal	if. R. Hildebrant, M. Taylor, S. Sillett
Catawba, Rhododendron catawhiones 1001							ricuwoods SP, Cal	f. R. Hildebrant, M. Taylor, S. Sillett
odlawna, Hnododendron catawhienca 1005+	1		26	11	;	39 Pis	gah NF, N.C.	
niiouogenaron catawhianna 2004+	11		19	17	4		Ridge Parkway, Buncombe Co.,	Ken, Amy, and Mike Knox
. dolle, nilouodendron macrophyllum 2002	17		15	12	3	5 Bra	sstown Bald, Ga	N.C. Will Blozan & Katherine Johnson
110000 maximum, 2002	22 28		28	17	5	4 Fort	Bragg, Calif.	Jess & Doug Riddle
ROYALPALM	20	,	34	28	6	9 Sun	ter NF, S.C.	Frank T. Callahan
Florida, <i>Roystonea elata</i> , 1995	50	_						Steve Muzal
RUSSIAN-OLIVE	30	9	99	18	154	. Faka	hatchee Stand, near Copeland,	Elo -
Elaeagnus angustiflolia, 2003∆	100		_				, was a copolally,	ria. Daniel B. Ward
SAGEBRUSH	160	4	7	61	222	Spin	City, Pennington Co., S.D.	
Big, Artemisia tridentata, 2003*	20						o con b.b.	Royce King
Big, Artemisia tridentata. 2002*	22 25	10		12	35	On BL	M land near Carson City, Nev.	
Big, Artemisia tridentata, 1991*	17	11		12	39	Cedar	City, Utah	John Copeland
Big, Artemisia tridentata, 1995*	20	17 13		16	38	Frank	in Co., Wash.	Ron Larson
SAGUARO		13		7	37	Crook	ed River National Grassland, Or	R. Noggles, B. Glodowski, F. Johnson
Gereus giganteus, 2003*	108	20		_			<b>_, 01</b>	e. Mark R. Corbet
Pereus giganteus, 2003*	94	32 46	1		144	Mamm	oth, Pinal Co., Ariz.	Obs. I am
SAPIUM	•	70	10	U	143	Tonto N	IF, Ariz.	Charley Blank
umping-bean, Sapium biloculare, 2001	9	13			_			J. Pleggenkuhle, C. Seymour, C. Hockaday
APODILLA	_	19	18	)	27	Cabeza	Prieta NWR, Ariz.	firm Marker
anilkara zapota, 1992*∆	156	70						Jim Malusa
anilkara zapota, 1993*∆	174	72 56	62		244	Key Wes		W000
ASSAFRAS		90	53		243		n Preserve, Miami, Fla.	William S. Hubard & B. Wang
ssafras albidum, 1995	271	77	-					Miller, Hammer, Flynn
A T I KI		77	67	3	64	Owen-t		
ATINLEAF				•		Owensbo	ro, Ky.	0 W p .
ATINLEAF Ysophyllum oliviforme, 1994	73	41	34	Ī		OWENSDO	ro, Ky.	O.W. Rash

SATINWOOD	The same of the sa	HEIGHT	SPRE	10' YOY	L POINTS LOCATION	The state of the s
West Indies, Zanthoxylum flavum, 1993 SAW-PALMETTO Sarenoa repens, 1994*	33	20	28	60		MOMINATOR
Serenoa repens, 1987*	22	20	13	4-		John Baust
SCARLETBUSH Hamelia patens, 1996	27	21	8	45 50	THE THE PARTY OF T	Buford C. Pruitt & D. Fogler
SEAGRAPE Coccoloba uvifera, 1994	15	13	16	32	Big Pine Key, Fla.	Steve Fousek & Paul Williams
SEQUOIA	149	62	66	228	Miami, Fla.	Jean F. De St. Croix
iiant, <i>Sequoiadendron gigantęum</i> , 1999 SERVICEBERRY	1020	274	107	1321	Sequoia NP, Calif.	Don McGarthy
legheny, <i>Amelanchier laevis</i> , 1997 owny, <i>Amelanchier arborea</i> , 1986	78 108	101 60	36	188	Blvd. Prong, Great Smoky Mtns. NP, Tenn.	Isabelle F. Story
		00	53	181	Burkes Garden, Va.	Will Blozan & Amy Gamerman Louise G. Hoge

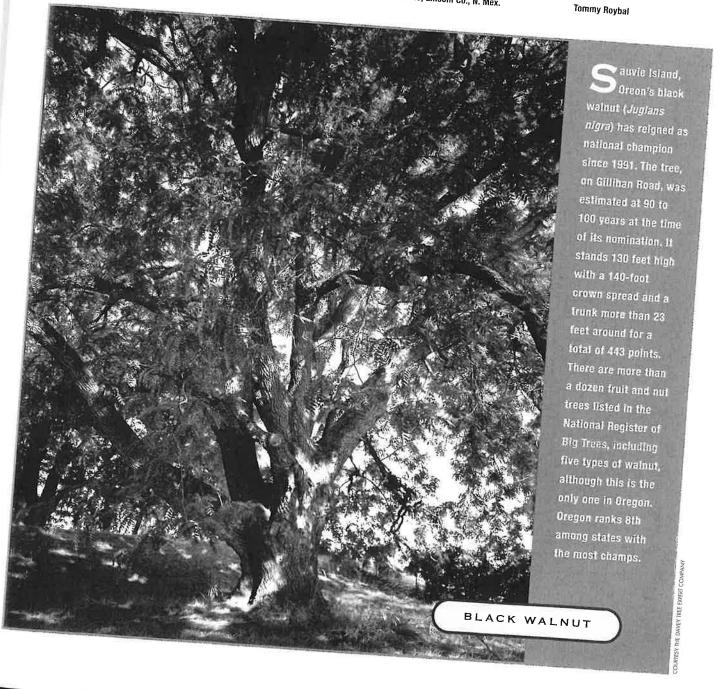




SPECIES/MEASUREMENT	elita	WEREN				No.					
Roundleaf Amelon		and the same		EIGHT	SP	READ	TOTAL :	Ollers	LOCATION		
Roundleaf, Amelanchier sanguinea, 2	2002		58	20		-2/01		220	rocarros.		HOMMERTOR
Utah, <i>Amelanchier utahensis</i> , 1991 Western, <i>Amelanchier alnifolia</i> , 1993			273	39 30	-	34	106	Clarendon, Vt.			
SILKBAY			39	42		26	310	Duchesne Co., Utah			Dave Potter
			3.50	42	1	43	92	Beacon Rock SP, Was	sh.		J.L. Feller
Persea borbonia var. humilis, 1991			55	20	00	12%					Robert Van Pelt
SILKTASSEL Waveleaf Garage VIII			-8	38	4	6	105	Ocala NF, Fla.		;*	
Wavyleaf, Garrya elliptica, 1972			28	00							Robert W. Simons
Wright, Garrya wrightii, 1997			28	29	22		63	Brookings, Ore.			
SILKTREE		-	-0	22	22	?	56	Buenos Aires NWR, Ari	i-		Frank T. Callahan
Mimosa, <i>Albizia julibrissin</i> , 1997∆		17	0					- Anny Ann	12,		Robert Zahner
SILVERBELL ,		''	a	56	74	2	254 (	rlando, Fla.			
Carolina, Halesia carolina, 2001		150						,			Marsha S. Roepe
Little, Halesia parvillora, 1993		152		110	43	2	73 G	eat Smoky Mouse.			
Two-wing, Halesia diptera, 2003		11 57		23	15	3	37 Ri	eat Smoky Mountains ce Creek Swamp, p	NP, Tenn		Jess & Doug Riddle
SILVERPALM		3/		44	41	11	11 Sp	ce Creek Swamp, Putr	nam Co., i	Fla.	Robert W. Simons & Daniel B. Ward
Florida, Coccothrinax argentata, 1993*		4.5						ring Grove Cemetery &	& Arboret	um, Cinn.OH	Len Thomas & Tom Smith
Total Total Total Total		19		29	6	5(	0 Ba	nia Honda SP, Fla.			a a folia Sinith
SMUKETHORN		21	2	25	7	48	8 Bal	ia Honda SP, Fla. ia Honda SP, Fla.			John A. Baust
valea spinosa, 1976								or, Fla.			Clifford Shaw & George Avery
SMOKETREE		48	1	7	12	68	B Anz	Rosson on -			a deorge Avery
American, <i>Cotinus obovatus</i> , 1980						_	-1112	a Borrego SP, Calif.			Frank T. Callahan
SUAPBERRY		95	39	) 3	38	144	Pord	un II-t			. Сапанал
Western, Sapindus drummondii aass							1 610	ue University, West La	fayette, I	nd. s	SA Jamina
Sapindus saponaria 1001		108	61	6	5	185					S.A. Jamieson & A.T. Grossman
SULDIERWOOD		88	72	36		169	Агала	as Co., Texas		v	and B
colubrina elliptica, 1998*						103	Payne	s Prairie State Preser	ve, Fla.		arl Bartels
Colubrina elliptica, 1999*		24	41	9	1	c-				ni	obert Simons
Colubrina elliptica, 1991*		25	30	29		67 62	John I	ennekamp Coral Reef	SP. Fla.	7.	_
SOPHORA		22	41	13		62 66		HE LAKE NWR FIS		J0:	seph Nemec
Mescalbean, Sophora secundificant too						υψ	John P	ennekamp Coral Reef	SP, Fla.		seph Nemec
Texas, Sophora affinis, 2003		68	27	27	4	00				J89	nne M. Parks
SOURWOOD		65	36	36		02 10	Comal (	Co., Texas		. 9	
Oxydendrum arboreum, 1998				_	•	10	Llano C	)., Texas		Ann	Holland & Kathy Thieleman
SPARKLEBERRY	13	32	95	70		ı= .				DIII	Edwards
ride, vaccinium arhoreum 10014					24	io į	Amelia (	o., Va.			
Tree, Vaccinium arboreum, 1997*	5	2	29	<b>1</b> E	_					John	Anderson & Joseph Humphreys
SPICEBUSH	3:		47	45 30	92	2 E	vergree	Country Club, Evergr	reen Ala		
Lindera benzoin, 1999*				50	88	3 D	eSoto N	Miss.	ven, Ala.		Stuart
Lindera benzoin, 1992*	14	, ,	6	10						Gary	H. Lott & Wayne R. McCardle
SPRUCE	12	_	2	19	45	An	mes Plai	tation, Fayette Co., Te			
Black, Picea mariana, 1989		·	_	24	50	Na	assau Co	., N.Y.	un.	David	
Black Hills, Pices glaves	62	70	,							Mike U	Irban
Black Hills, <i>Picea glauca</i> var. <i>densata</i> , 2003 Blue, <i>Picea pungens</i> , 2001	117	78 103		21	145	Tay	ylor Co.,	Wis.			
Brewer, Picea brewerana, 1999	190	127		30	228	Blac	ick Hills	NF, S. Dak.		Nick Ri	sch
Engelmann, <i>Picea engelmannii</i> , 1998 Norway, <i>Picea en</i>	272	137		13	328	Ash	iley NF, (	ltah		Mark Ro	
Norway, <i>Picea abies</i> , 1988∆	265	156		-	420	Sha	sta-Trini	ty NF. Calif.		A.J Fran	ndsen & Sherel Goodrich
Red, Picea rubens, 1986*	185	108		-	428	Olym	mpic NP,	Wash.		requard	Herzstein & Neal Hadlow
Red, Picea rubens, 1997*	169	123	5		307	Durh	ham, N.H			A Magan	an Pelt & Arthur Jacobson
itka, Picea sitchensis, 1998*	144	146	39	. `	302	Great	t Smoky	Mountaine No. 4. a		mis. War	nie Marty
itka, <i>Picea sitchensis</i> , 1998*	629	204	34	_	99	THER	ket Bran	h, Great Smoky Mar-	No.	Jim Renf	ro & Chris Blakeman
hite, Picea glauca var. glauca, 2001	668	191	93						. NP, N.C.		an
TEWARTIA	126	130	96	٠,		quina	mit rake	Olympic NE Work		Maynard	Drawson
Ountain Stewartia ovata, 2002		100	30	26	64	Littlef	fork, Koo	chiching Co., Minn.		Robert Va	n Pelt
ginia. Stewartia mate	34	10						5 -o., mini.		Richard St	tapleton
ginia, Stewartia malacodendron, 1987*	10	16	11	5	3 1	Virgini	ia Beach	.Va.			
ginia, <i>Stewartia malacodendron</i> , 1987* 「OPPER	10	15 19	24	3	1 (	Chesap	peake, V	 I,		Richard Sa	
OPPER		13	28	36	) P	once d	de Leon,	Fla.		Byron Carn	nean & G.M. Williamas-
leaf, Eugenia foetida, 1998*	16	4-					90			Murdock "F	Ray" Gillis
leaf, Eugenia foetida, 1999*	16	19	14	39	М	aratho	on, Mon-	oe Co., Fla.			···
Eugenia rhombea, 1999	11	24	8	37	Ke	y Larn	go Hame	noko eta: ~		Dianna Stev	enson & Jeanette Hobbs
perry, Eugenia confusa, 1993	19 60	23	14	46	Cr	ocodil	le Lake 1	ocks State Botanical S IWR, Key Largo, Fla.	Site, Fla.	Joseph Nem	ec deallette Hobbs
	60 34	46	26	113						Joseph Nem	ec
1994*	4-	51	40	95	Fer	n Fore	est Natur	& Gardens, Miami, Fl	a.	C. Lippincott	9-5-1
	15	28	9	45	Bar	nacle	State u	e Cntr., Pompono Beacl storical Site, Fla.		Jim Higgins	

SPECIES/MEASUREMENT	CONTRACTOR OF THE PARTY OF THE							
The same of the sa	CIRCUMFE	BENCE"	MEIG	HT.	SPE	Ello!	TOTAL POINTS	Trock management
White, Eugenia axillaris, 1993*		41				400.200	LOCATION LOCATION	HOMINATOR
STRONGBACK		15	•	25	1	11	43 Sanibel Island, Fla.	
Bahama, Bourreria ovata, 1999		32		20				Richard R. Workman
Rough, Bourreria radula, 1995		22		28 23		4	64 Crocodile Lake NWR, Key Largo	. Fla
SUMAC				23	19	9	50 Key West, Fla.	
Evergreen, Rhus virens, 1991		36		12			_	Vincent P. Condon
Mearns, <i>Rhus choriophylla</i> , 1995 Prairie, <i>Rhus lanceolata</i> , 1994		24		20	17 19		52 Concan, Uvalde Co., Texas	W. I. Commis
Shining, <i>Rhus copallina</i> var. <i>copallina</i> , 200		48		23	35		49 Coronado NF, Ariz. 80 Kerrville Tayon	W.J. Graves Robert Zahner
Smooth, Rhus glabra, 2001	0	38	2	29	32		THE TEXAS	Raymond C. Doggett
Southern, Rhus copalling var Jeucanthe to	150	36	5	2	28		75 Pontotoc Co., Miss. 95 Drybranch, Ga.	Rickey Harwell & G.W. Poyner
Tagnorn, nitus typnina. 1985	193	13	2	2	15		39 Arcadia, Fla.	Roger Blount
Sugar, <i>Rhus ovata</i> , 1995		50	6		20	11		Arden Streit Jr.
SWAMPBAY		65	32	2	33	10	5 Superstition WA, Tonto NF., Ariz.	Ted Kretschmann
Persea borbonia var. pubescens, 2003		4-					19 10/10 HI , MI(2.	Ken Marrow
SWAMP-PRIVET		45	82	?	18	13	Pettigrew SP, N.C.	
Forestiera acuminata, 1997		100					,	S. Shearin, J. Greenwood, A. Paul
SWEETGUM		100	41		49	153	Yazoo NWR, Washington Co., Miss.	
Liquidambar styraciflua, 1986		970	40-				July Co., IMISS.	David Linden
SWEETLEAF	•	278	136	6	66	431	Neuse River near Perfection, N.C.	
Symplocos tinctoria, 1986*		54						H.E. Bremer, B. Tate, S. Newcombe
Symplocos tinctoria, 1986*		35	54		8	118	Chesapeake, Va.	B 8
SYCAMORE		00	70	3	6	114	Chesapeake, Va.	Byron Carmean & Gary M. Williamson
Platanus occidentalis, 2001	4	40	85					Byron Carmean & Gary M. Williamson
Arizona, <i>Platanus wrightii</i> , 2003 California, <i>Platanus</i>		36	75	68		542	Montgomery Co., Ky.	Chart
California, <i>Platanus racemosa</i> , 2001	35		95	94 108		435	Camp Verde, Coconino NF, Ariz.	Charles Saunders & Chuck Wilburn
TALLOWTREE Sapium sebiferum, 2000∆						472	San Juan Capistrano, Calif.	Harry Untiedt & David Thornburg Art Cowley
TALLOWWOOD	13	7	68	68		222	N	cowiey
Ximenia americana, 1997				-		222	Vidor, Texas	Robert N. Norton
TAMARACK	16	3	18	14		38	Constant	and the second
Larix laricina, 2003				•		30	Crocodile Lake NWR, Fla.	Joseph Nemec
TAMARIND	151	6	62	69	,	230	Count	- Fri Hollieg
Tamarindus indica, 1992∆					•	-00	Coventry, Conn.	Edward Richardson
TAMARISK	167	7	<b>'</b> 5	84	2	63	Monthe	
Tamarix chinensis, 1999∧					_		Mary immaculate Star of the Sea School, K	ey West, Fla. M.Cullen & D. Singlair
Small-flower, Tamarix parviflora 1986	170	4	5	50	2	28	Albuquerque, N. Mex.	- Maria di Bioliciali
JANOAK	56	14	4	22	7	76 F	fampton, Va.	Robert Squires
Lithocarpus densifiorus, 1997								Richard Salzer
TESOTA	275	144		59	43	4 0	phir, Curry Co., Ore.	
Olneya tesota, 1996	4==						y 551, 510.	George Miller
THATCHPALM	170	43	4	<b>1</b> 5	224	4 M	aricopa Co., Ariz.	
Florida, Thrinax radiata, 1991								K. & J. Morrow
Key, Thrinax morrisii, 1995	17	28		2	46	: Ha	llywood, Fla.	
TORCHWOOD	19	19	,	9	40	Fa	irchild Tropical Garden, Miami, Fla.	D. Spicer, W. Harms, W. Tesauro
Amyris elemifera, 1994	10							Don Evans & Daniel B. Ward
TORREYA	18	22	15	5	44	Ma	ry Immaculate Star of the Sea School, Key \	W
California, Torreya californica, 1992	251	00					to a control, key	west, Fla. M.Cullen & D.Sinclair
Florida, Torreya taxifolia, 1972	109	96 45	68		364	Swa	anton, Calif.	
TOYON	120	40	40		164	Nor	lina, N.C.	Frank T. Callahan
Heteromeles arbutifolia, 1992	58	32	20		-			Robert Simons
TREE TOBACCO	-	32	28		97	Sant	a Barbara Co., Calif.	Frank T. Collect
Nicotiana glauca, 2001	14	20	14			_		Frank T. Callahan
TREE-CACTUS		-0	14		38	Tucs	on, Ariz.	John 9 Janiary
eering, <i>Cereus robinii</i> var. <i>deeringii</i> , 1992	11	23	•			_		John & Janielle Richmond
y, vereus robinii var, robinii 1002*	11	23	2 1		35 24	Monr	oe Co., Fla.	Michael K. II.
ey, <i>Cereus robinii</i> var. <i>robinii</i> , 1995* REMA	12	17	2		34 20	Natio	nal Key Deer Refuge, Monroe Co., Fla.	Michael K. Hennessey
orida, <i>Trema micrantha</i> , 1995			~	ď	30	watio	nal Key Deer Refuge, Monroe Co., Fla.	Michael K. Hennessey Vincent P. Condon
RIFOLIATE 0 -	18	39	30	6	5			Порино
RIFOLIATE-ORANGE				O	J	COINE	Co., Fla.	Chris Anderson & Lisa Moore
· · · · · · · · · · · · · · · · · ·	42	18	00					LISA Moore
	43 -	10	20	66	6.	Roanoi	ro II-	

TUPELO	IMFERENCE"	HEIGHT	SPREE	10° TOT	AL POINTS LOCATION	
Black, Nyssa sylvatica var. sylvatica, 2000 Ogeechee, Nyssa ogeche, 1993* Ogeechee, Nyssa ogeche, 1993* Swamp, Nyssa sylvatica var. biflora, 1987 Water, Nyssa aquatica, 1991 VAUQUELINIA Torrey, Vauquelinia californica, 1993	232 166 174 238 336		01	362 269 267 354 455	Apalachicola NF, Fla.  Apalachicola NF, Fla.  Apalachicola NF, Fla.	William Godwin Robert W. Simons & Dale Allen R. Simons, D. Ward, D. Allen, G. Hei Byron Carmean & Gary Williamson Byron Carmean & Gary Williamson
VELVETSEED Elliptic-leaf, Guettarda elliptica, 1992	78 36	47 23	40	135	Organ Pipe Cactus NM, Ariz.	Robert Zahner
Roughleaf, <i>Guettarda scabra</i> , 1998 VIBURNAM Possumhaw, <i>Viburnum nudum</i> , 2003	11	17	24 11	65 31	Simpson Park, Miami, Fla. Key Largo Hammocks State Botanical Site, Fla.	William G. Miller & John Valenta Joseph Nemec
Nalter, Viburnum obovatum, 2000 VALNUT rizona, Juglans major, 1999	17 22	33 32	20 31	55 62	Watkinsville, Oconee Co., Ga. Suwannee River Water Mgmt. District, Fla.	Larry Morris & Scott Bryant Robert & Erika Simons
lack, <i>Juglans nigra</i> , 1991 ttle, <i>Juglans microcarpa</i> , 1986	215 278 160	73 130 53	88 140 65	770	Aravaipa Canyon Preserve, Ariz. Sauvie Island, Ore. Picacho, Lincoln Co. N. May	Ken Morrow & Mike Hallen Dan Tillman Tommy Roybal



No.th - C. W.	NEMLE"	HEIGHT	SPREAL	D' TOTA	L POINTS LOCATION	
Northern California, Juglans hindsii, 2001 Southern California, Juglans californica, 2003 WASHINGTONIA California (fangalay)	304 259	76 112	107 106	407 398	7 Napa, Calif.	John Britton Tree Service
California (fanpalm), <i>Washingtonia filifera</i> , 1991* California (fanpalm), <i>Washingtonia filifera</i> , 2001* California (fanoalm), <i>Washingtonia filifera</i> , 2001*	120	83	21	208	0-	Gordon R. Foster
California (fanpalm), Washingtonia filifera, 2001*	121	83	21	209	Sacramento State Capitol Grounds, Calif.	R Van Doll e a r
ATER-ELM nera aquatica, 1983	141	66	18	212	Sacramento State Capitol Grounds, Calif. Sacramento State Capitol Grounds, Calif.	R. Van Pelt & A.L. Jacobson R. Van Pelt & A.L. Jacobson Art Cowley
VATERLOCUST leditsia aquatica, 1993*	183	106	96	313	New Bern, N.C.	Richard Salzer
editsia aquatica, 2000**	110	74	73	202	Mira	Ouizer
HITE-CEDAR antic, Chamaecyparis thyoides, 1985	103	93	45	207	Wyndmoor, Pa. Suwannee River Water Mgmt. District, Fla.	Maurice E. Hobaugh
thern, <i>Thuja occidentalis</i> , 1978	186	88	42	285		C. Houder, R. Heek, R. Simons
ILD-DILLY nilkara bahamensis, 1998	216	113	42		Brewton, Ala. Leelanau Co., Mich.	James M. McGougin Sr. Paul W. Thompson
	34	19	32	61	Crane Hammock subdivision, Marathon, Fla.	Harry DeLashmutt & Jeanette Hol

#### ONCE IN A LIFETIME

outh Carolina is a gracious, beautiful state of historic homes, coastal towns, and massive trees. It can also be a place of mosquitoes, intense heat, and snakes. For grad students Chisolm Beckham and Bill Jordan, putting the two together to verify trees for the state's Champion Tree Project was a once-in-a-lifetime experience. The two came away with stories like Beckham's tale of slogging through a swamp populated with wild hogs and so-called widow makers, but also Jordan's story of the director of a Chamber of Commerce who personally drove him to an old plantation to find the state champ southern redcedar.

Big as they are, the trees are not always easy to find. Sometime it was "like working for a collection agency," Beckham recalls. "I would dial 411 and give the name and

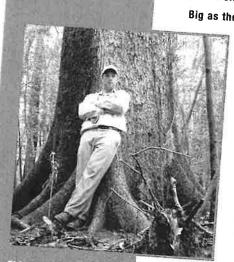
last known city of residence of the nominee or landowner." Often there would be no one listed by that name, so he would then ask for people with the same last name and choose "old school" first names like Ruford, Chester, or Louise. Often "someone at the other end of those names knew, or had known, the tree and the person in question."

Big tree hunting also brought the two men face to face with the changes progress had wrought on their state. "Often when I found the location of a previous champion, the area would be totally different, usually because of residential or commercial development," Jordan recalled. "The majestic tree that once grew there was probably bulldozed by people who had no idea of its noble designation."

But regardless how the years have changed the landscape, an abiding love of

trees has remained. "Many people seem to have a special place in their hearts for trees, and especially 'Champion Trees," Jordan says. "Wherever I went, whether it was small homes of modest means or gated private communities, when I explained my purpose in being there, the red carpet was rolled out."

He speculates that may be because a "powerful connection" seems to exist between trees and people. There is a theory, Jordan explains, that this is caused by a "genetic memory" connection related to prehistoric man's dependence on trees for survival and comfort. It's nice to



Chisolm Beckham, taking a break from hunting big trees.

WILLOW			HEI	THE REAL PROPERTY.	SPREA	to Tora	L POINTS LOGA	TION	
Arroyo, Salix lasiolepis, 2003							The state of the s		MOMINATOR
Autumn, <i>Salix serissima</i> , 1985		8	19	41	49	140			
Bebb, Salix bebbiana, 1991		3	5	48	44	142	outil capistrano. Ca	dif.	Art O
Black, Salix nigra, 1995		10	1	23	27	94	Oakland Co., Mich.		Art Cowley
Bonpland, Salix bonplandiana, 2003		400	)	76	92	131	Sawtooth NF, Idaho		Paul W. Thompson
Coastal plain, <i>Salix caroliniana</i> , 1995		228	3	63	76	499	Grand Traverse Co., Mich		Bill Little & Howard Hudak
Crack, Salix fragilis, 1994*△		106	;	52	56	310	Audubon Wildlife Preserv	e, Calif.	Elwood B. Ehrle & John Spence
Grack, Salix fragilis, 1986*∆		310			131	172	retugrew SP, Creswell, N	C.	Art cowley
Feltleaf, Salix alaxensis, 2001		305			124	459	beverly Hills, Mich.		Sid Shearin
Florida, Salix floridana, 1993		41	;		24	458	Clinton Rd., north of Utica	Mich.	Paul W. Thompson
Goodding, Salix gooddingii, 1993		11			23	83	rort Wainwright, Alaska		H.J. Nett & Paul W. Thompson
Hinds, Salix hindsiana, 1986		354	4	_	20 89	37	Ocala NF, Fla.		Mark R. Corbet
Hooker, Salix hookerana, 2001		58	5	_	32	421	Walsh Ranch, Luna Co., N.	Mex.	Jeff Overby & like Toklu
Mackenzie, Salix mackenzieana, 1999		65	50		9	116	Jackson Co., Ore.		Ralph Fisher Jr.
Meadow, Salix petiolaris, 1976		17	30	•		125	Tillamook Co., Ore.		Frank T. Callahan
Pacific, Salix lasiandra, 1999*		13	34	_		54	Lake Sammamish SP, Wash.		Joe Travers
Pacific, Salix lasiandra, 1999*		157	70			52	Iraverse Lake, Mich.		R. Van Pelt, A. Jacobson, R. Brightm
Peachleaf, Salix amygdaloides, 2000		171	54	-		243	Dry Creek Regional Park, Ala Kern Co., Calif	ameda Co. r	raul W. Inompson
Purple-osier, <i>Salix purpurea</i> , 1972∆		396	80	64 77			and odill.		
Pussy, Salix discolor, 1983*		15	37	49		495	Greenfield Park, West Allis, W	Vis.	Art Cowley
Pussy, Salix discolor, 1991*		54	47	33		04 3	eelanua Co., Mich.		Eugene Zanow
Sandbar, Salix exigua, 1984		74	25	33 48		109 (	Clinton, Mich.		Paul W. Thompson
Scouler, Salix scoulerana, 1993		69	36	46 46		111	amestown, R.I.		Paul W. Thompson
Shining, <i>Salix lucida</i> , 1985		144	64			117 C	riglersville, Va.		Patrick M. Dorcus
Silky, <i>Salix sericea</i> , 1991		130	74	47		220 M	aury Island, Wash.		Richard Salzer
Sitka, Salix sitchensis, 1999		40	48	81		24 Tr	averse City, Mich.		Robert Van Pelt & Ron Brightman
Tracy, Salix tracyi, 1975		32	35	36		97 La	ke Drummon Causeway, Va		raul W. Thompson
Weening Soliv between		36	20	37		70 68	ne Coulon Park, Renton Was	h	Byron Carmean & Gary Williamson
Weeping, Salix babylonica, 1990*∆ Weeping, Salix bat, it is 1990*∆	;	200	117	15		oo 08	ntral Point, Ore.	м.	n. van Pelt, A. Jacobson, R. Brightman
Weeping, Salix babylonica, 1991* $\Delta$ White, Salix alba, 1985* $\Delta$		344	86	116	45	55 De	troit, Mich.		rrank I. Gallahan
White Salivath 1985*∆		4.0		93	45	3 Hai	tland, Livingston Co., Mich.		Mr. & Mrs. J. Kropp
White, Salix alba, 1991*∆			118	131	46	7 wes	st of New Hudson, Oakland C	o 40	J. Pergament & Paul W. Thompson
Yellow, Salix lutea, 1985			33	142	47	0 Nev	Hudson, Oakland Co., Mich.	o., Mich.	raui w. Inompson
Yewleaf, Salix taxifolia, 1996*			24	16	53	3 Lem	hi Co., Idaho	·):	R. Turner, S. Lyons, P. Thompson
Yewleaf, Salix taxifolia, 2000*			33	31	112	San	Rafael Valley, near Lochiel, A	166	S. J. Brunsfeld & F. D. Johnson
WINTERBERRY		•	27	33	109	Pres	idio Co., Tex.	Ariz.	Hobert Zahner
Common, llex verticillata, 1994*		_					F 9000		Oscar Mestas
common, llex verticiliata. 1994*	2		3	16	41	Virgi	nia Beach, Va.		
Mountain, <i>llex montana</i> , 2002	2	. '		16	38	Virgi	lia Beach, Va.		Richard & Richard Alan Salzer
WITCH-HAZEL	19	4	0	24	65	Highla	ands, Macon Co., N.C.		Richard & Richard Alan Salzer
Hamamelis virginiana, 1984						•	Macon Co., N.C.		Robert & Glenda Zahner
YAUPON	52	35	;	30	95	Bedfo	ad tr.		Lumei
llex vomitoria, 2003*						Dealty	u, va.		Richard Salzer
llex vomitoria, 2003*	31	32	2	q	70				Salzer
YELLOW-ELDER	30	30	5		70 70	Guido	Gardens, Metter, Ga.		heat- w
Tecoma stans, 2003			·	•	73	Autaug	aville, Autauga Co., Ala.		Justin Taylor
VEL 1	20	23	4.						John Pirtle
YELLOW-POPLAR		20	19	,	48	Tonto N	F, Ariz.		
Tuliptree, Liriodendron tulipifera, 1997	274								Ken Morrow
IFLLOWWOOD	374	111	125	51	16	Bedford	, Va.		
Cladrastis kentukea, 2003									Kenneth E. Crouch & Glenn Garrett
YEW	213	49	63	27	8	Cincinna	# 0L:		a aroun darrett
lorida, <i>Taxus floridana</i> , 1986					_	Omomina	u, Unio	P	aul Ries
acific, Taxus brevifolia, 1989*	25	20	26	En		_			
acific, Taxus brevifolia, 1994*	180	54	30	52 242		Torreya S	P, Fla.	- 10	DOV T Prod a
UCĈA	160	70	40	242	_	ewis Co.	, Wash.	B. Malcom	oey T. Brady & Jerome Bracewell
oe, Yucca aloifolia, 2000				240	V	vashingt	on Co., Ore.	()	b, L. Barnhouse, A. Storkman, R. Levitt
aked. Vicca rootest	18	14	,				19	U	iver Matthews
aked, <i>Yucca rostrala</i> , 1994	48	16	4	33	Н	ortense,	Brantley Co., Ga.		
rneros (Spanish-dagger), <i>Yucca carnerosana</i> , 1977	51		9	66	Sa	an Anton	io Zoo, Texas		nmy Mock
, 12002 raxonnana, 1991	91	25 10	10	79	Si	erra Blar	ica, Texas		eve Lowe
ave, Yucca schidigera, 1987	66	18	9	111	Pu	ett Ranc	h, Hudspeth Co. Tayao	Fra	nk T. Callahan
undlilly, Yucca gloriosa, 2003	118	24	7	92	Ne	edles Re		Nel	son Puett
	60	32	38	160	Lib	rary Gro	unds, Huntington Beach, Cali	exander, G. N	fleckfessel,K. Nosstrom, L. Persson
ey, Yucca torreyi, 1987	86	26	12	89		········y, 14./	flex,	··· AIL	cowiey
, .uoca trecuteana, 1991	oo 24	23	6	111	Sac	ramento	Mountains, Lincoln NF, N. M	Fran	ık T. Callahan
10		30	9						McNelly

TIMES ARE

TOUGH FOR THE

SANTA CRUZ

CYPRESS, A TREE

WITH LIMITED

RANGE AND, FOR

20 YEARS, NO

CHAMPION.

STORY AND
PHOTOS BY
WHIT BRONAUGH

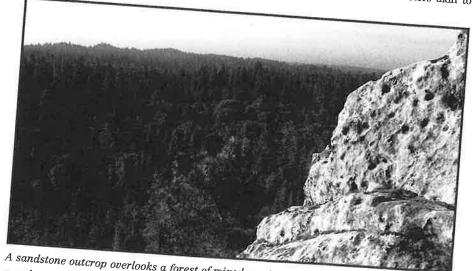
# RETURN of the KINGS

ith a single glance I can see about 3,000 Santa Cruz cypress trees. That red-shouldered hawk soaring high above me can see as many as 5,200, but no more. No matter where that hawk flies, when it comes to counting *Cupressus abramsiana*, the sky is not the limit. 5,200 is. I know this because that's all the wild Santa Cruz cypress there are in the whole world, and every one of them grows within 14 miles of where I sit.

My vantage point is a lofty sandstone outcrop in the Santa Cruz Mountains of California, overlooking a potpourri forest of ponderosa pine, Douglas-fir, manzanita, knobcone pine, live oak, madrone, redwood, and Santa Cruz cypress. I watch patches of coastal fog tear away from the solid blanket lower down and drift up-slope to battle the sun for the mood of the land. Bright sunlight inspires a carefree optimism, a sense that all is right with the world and a desire that it will always be so. But the misty fog, with its cool bluish light, is a gentle reminder that Mother Nature makes no promises, grants no wishes, and never pities the loser. Until recently the Santa Cruz cypress had been dealt a fair, if rather poor, hand in the game of survival. But lately, humans have been stacking the deck.

I came here to the Bonny Doon Ecological Reserve because I thought that of all the trees on the National Register of Big Trees' list of species with vacant thrones, the endangered Santa Cruz cypress was most in need of a king. American Forests' Big Tree program began back in 1940 as a way to sound the alarm over the loss of our large trees by recognizing the biggest individual of each species. But that warning signal takes on a doomsday urgency when the black hole of extinction threatens the loss of every individual of a species.

I hike over to the west side of the reserve where I encounter my first Santa Cruz cypress up close. I find a healthy specimen with typical bright green, overlapping, scale-like leaves; silvery gray, furrowed bark; and female cones that hug the branches in clusters akin to



A sandstone outcrop overlooks a forest of mixed species, including the nation's entire population of wild Santa Cruz cypress. At left, one of the new national champs.

WHILE SANTA

CRUZ CYPRESS

DOES WELL

WHERE MOST

bunches of grapes. The nearly spherical cones have eight to 10 scales, each looking like a shield with a central projection (called an umbo, if you want to impress your botanist or Scrabble-playing friends). The cones' large size—an inch or more in diameter—help distinguish the tree from the Gowen cypress.

Before botanist Carl Wolf first labeled Santa Cruz cypress as separate species (Cupressus abramsiana) in 1948, it was included in Gowen cypress (Cupressus goveniana) or Sargent cypress (Cupressus sargentii). It has gone full circle from Cupressus abramsiana (full species) to Cupressus goveniana var. abramsiana (a variety of Gowen cypress), to Cupressus x goveniana (hybrid of Gowen and Sargent cypress) and back to

Cupressus abramsiana.
But Santa Cruz cypress
by any Latin name is a
tree uncomfortably close
to oblivion.

Any time you can count every individual of a species there is a danger to its survival. Rarity is the prelude to extinction. Tree populations fluctuate over time. Most species can handle this, even if a few small populations are eliminated by fire, disease, or competition. But what if all you have are a few small populations?

Santa Cruz cypress was probably more abundant and widespread during the past glacial period, but today

only five populations are known. Other than the 3,000 or so trees at Bonny Doon, there are 700 at Eagle Rock, 200 at Bracken Brae, 1,000 near Majors Creek, and 200 on Butano Ridge. Put all four together and they barely cover half a square mile. Even so, I lacked the time to cover all this ground in my search for a new king, because the groves are spread out over a 14-mile stretch of the Santa Cruz Mountains. So I did what any big tree hunter would do. I sought reinforcements.

Kathy Lyons, now a plant ecologist with Biotic Resources Group in Santa Cruz, conducted her master's research on the population structure of Santa Cruz cypress and later helped develop a Draft Recovery Plan for the U.S. Fish & Wildlife Service. She told me the biggest specimens were in the Bonny Doon population behind the Bonny Doon fire station and even showed me the most likely contenders. But before I measured them I wanted to eyeball a few more in the reserve.

The first step in any search for a new champion

tree is to become familiar with the species and its best growing sites. Evolution has undoubtedly produced genetically superior individuals, but these differences are normally minor compared to the local growing environment. Big trees are made, not born. We may speak of royal sap in the phloem of champions, but the real world of trees is relatively egalitarian until chance chooses where a seed will land. For a seedling, it's not who you are, it's where you are.

This fact was soon evident as I walked through the Bonny Doon grove. I found large trees—to 50 feet or more—in the deeper sandy soils shared by ponderosa pine. Where chaparral was more evident the cypresses were smaller and scragglier. On sandstone outcrops the cypress trees growing in the cracks were fully mature, with dozens of cones, but they barely reached my waist. This, I thought, is one tough tree. So, why is this species so endangered?

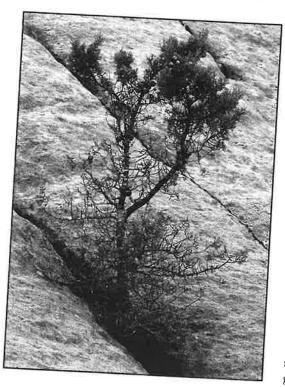
The ecological answer is that while Santa Cruz cypress does well where most trees can't, they can't get established where most trees can. By adapting to impoverished sites, it has reduced its ability to compete on more forgiving soil.

That leaves the tough little cypress in a narrowly restricted habitat, and that's always a liability in the face of unchecked human "progress." Other than as firewood, Santa Cruz cypress has practically no consumptive commercial value. A logging operation on Butano Ridge in the 1980s left the trees unharmed. But when progress seems to wage war against Mother Earth, the collateral damage extends far. The Santa Cruz cypress may never have been a target, but it is has gotten in the way.

The pygmy cypress before me strikes a defiant pose: I have adapted and will survive, it seems to say. But looming above, on top the same sandstone outcrop, a house symbolizes the progress that threatens the trees. In 1975 the construction of a 40-home development destroyed nearly 100 cypress trees in the Bracken Brae population, almost 2 percent of the entire species. Oil and gas drilling was initiated on Butano Ridge, a logging road was planned to cut through the remainder of the Bracken Brae grove, and Bonny Doon was to become a vineyard. The threat of these operations led to the 1987 listing of Santa Cruz cypress as a federally endangered species.

Since then, such direct threats have been thwarted by action and a bit of luck. The oil and gas drilling was unsuccessful, logging permits were revoked, and housing construction has stopped. The Eagle Rock area was purchased by the Sempervirens Fund, a local land conservancy, and sold to the state for inclusion in Big Basin Redwoods State Park. Bonny Doon produces fine cypress, rather than fine wine, because The Nature Conservancy bought the property in 1989 and deeded it to the state as an ecological reserve.

This is all good news, but the remaining threats are much more insidious. Housing developments, which often feature non-native landscape plantings,



TREES CAN'T,
THEY CAN'T GET
ESTABLISHED
WHERE MOST
TREES THRIVE.

can bring pests such as the sawfly that infested the Bracken Brae population in 1992. Or diseases like cypress canker, to which Santa Cruz cypress is known to be susceptible. Or pollen from ornamental cypresses. If any of this pollen lands on Santa Cruz cypress cones, fertile hybrids could cause genetic introgression—the swapping of genes—which would swamp the characteristics and adaptations that make Cupressus abramsiana what it is. With development has come exotic French broom and pampas grass that may compete with cypress seedlings.

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Wandering around Bonny Doon I "met" a significant portion of the world's Santa Cruz cypress trees. Each was unique, but none bigger than the ones near the fire station. On the way back I found a recently fallen cypress branch laden with cones. Cypress cones take two years to mature and can remain stubbornly closed for decades, even though seed viability declines with age. Some cones will open in hot weather or if a branch is broken and germination is possible where the substrate has been disturbed. But most cones wait patiently for a fire before they open, drop their seeds, and rise like a phoenix from the ashes.

The degree to which Santa Cruz cypress depends on natural fire cycles for regeneration is unknown, but more than 80 percent grow on or near private property. That proximity could impede future generations because we discourage fire near houses.

Back among the big cypress trees, I measured four that had the potential to be national champs. None could match the 270-point score of the previous

king, but that tree's circumference was measured (incorrectly by today's rules) at the 2-foot level, presumably because of a low fork.

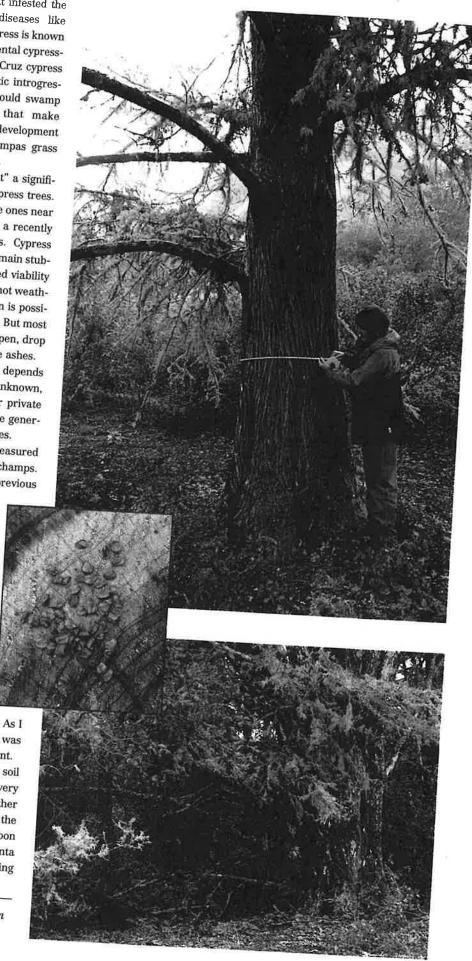
Now, after a 20-year vacancy, the throne is crowded with three kings whose point totals fall within 5 points of one another. They range from 56 to 68 feet tall, 31 to 36 inches in diameter, and 40 to 45 feet in crown spread, averaging 177 points. The king is long since dead! Long live the kings!

Before leaving Bonny Doon, I took one last stroll and happened to pass that fallen branch again. Looking closer, I saw that

some seeds had spilled out of the opening cones. As I held some in my hand, I noticed that the branch was too far from a tree to have fallen there by accident.

Maybe someone else realized what I did: The soil was sandy, thin, poorly developed, and probably very low in nutrients and water-holding capacity. In other words, perfect for a Santa Cruz cypress. I put the seeds back where they had fallen and left Bonny Doon filled with hope. Someday, perhaps, the limit for Santa Cruz cypress counters will not be 5,200 but something a little bit closer to the sky. **AF** 

Whit Bronaugh nominated four of the champions in the current National Register of Big Trees.



## SPECIES IN SEARCH OF A CHAMP

ALDER

Red, Alnus rubra (Wash., Ore.) LICARIA APRICOT Florida, Licaria triandra (Fla.) Desert, Prunus fremontii (Calif.) LOCUST **ARAUCARIA** Kelsey, Robinia kelseyi (N.C., Tenn., Ky.) Cunningham, Araucaria cunninghamii (Hawaii) MAIDENBUSH BAYBERRY Savia bahamensis (Fla.) Evergreen, Myrica heterophylla (N.J., Pa., Del.) Marlberry, Ardisia escallonioides (Fla.) BITTERBUSH **NECTANDRA** Picramnia pentandra (Fla.) Florida, Nectandra coriacea (Fla.) BLACK-CALABASH 0AK Grab your tree ID book Amphitecna latifolia (Fla.) McDonald, Quercus macdonaldii (Calif.) BUCKTHORN Myrtle, Quercus myrtifolia (S.C., Fla., Miss.) Birchleaf, Rhamnus betulifolia (Texas, N.M., Ariz.) and this list and start Northern pin, Quercus ellipsoidalis (Mich., Wis., Minn.) BURNINGBUSH Scarlet, Quercus coccinea (N.Y., Ohio, Mich., Ind.) Western, Euonymus occidentalis (Wash., Ore.) PAWPAW hunting. You could CAPER Bigflower, Asimina obovata (N.C., S.C., Ga., Fla.) Limber, Capparis flexuosa (Fla.) PINE CASTORBEAN Fallax pinyon, *pinus edulis* var. *fallax* (Colo., Utah) add your name and Ricinus communis (Fla.) Jeffrey, Pinus jeffreyi (Ore., Calif.) CEANOTHUS Virginia, *Pinus virginiana* (N.J., Pa., Ohio, Ky., Tenn., Va., Ga.) Feltleaf, Ceanothus arboreus (Calif.) one of these trees to PLUM Greenbark, Ceanothus spinosus (Calif.) Hortulan, prunus hortulana (Ohio, III., Iowa, Mo., Okla.) CHINKAPIN PRICKLY-ASH Allegheny, Castanea pumila (N.J., Pa.) Biscayne, Zanthoxylum coriaceum (Fla.) Florida, Castanea alnifolia (Fla.) PRICKLYPEAR COCOPLUM Brazil, Opuntia brasiliensis  $\Delta$  (Fla.) Chrysobalanus icaco (Fla.) SEVEN-YEAR-APPLE COLUBRINA Genipa clusiifolia (Fla.) Coffee, Colubrina arborescens (Fla.) SNOWBELL Cuba, Colubrina cubensis (Fla.) American, Styrax americanus (Va., N.C., S.C., Ga.) CROSSOPETALUM Bigleaf, Styrax grandifolius (Va., Fla., Texas, Ky.) Florida, Crossopetalum rhacoma (Fla.) Sycamore-leaf, Styrax platanifolius (Texas) CYRILLA STOPPER Littleleaf, cyrilla racemiflora var. parvifolia (Ga., Fla.) Long-stalk, Psidium longipes (Fla.) DOWNY-MYRTLE Twinberry, Myrcianthes fragrans var. fragrans (Fla.) Rhodomyrtus tomentosa 🛆 (Fla.) SUGAR-APPLE **ELDER** Annona squamosa ∆ (Fla.) Mexican, Sambucus mexicana (Ariz., N.M.) SUGARBERRY Velvet, Sambucus velutina (Calif., Nev., Ariz.) Celtis laevigata (Fla., Texas, Va., Kan.) **FIDDLEWOOD** SUMAC Berlandier, Citharexylum berlandieri (Texas) Kearney, Rhus kearneyi (Calif.) FIR Laurel, Rhus laurina (Calif.) Bristlecone, Abies bracteata (Colo., Idaho, Ore., Calif.) Lemonade, Rhus integrifolia (Calif.) FORESTIERA Littleleaf, Rhus microphylla (Texas, Okla., N.M., Ariz.) Texas, Forestiera angustifolia (Texas) FREMONTIA French, Tamarix gallica (Texas, La.) Mexican, Fremontodendron mexicanum (Calif.) TETRAZYGIA GRAYTWIG Florida, *Tetrazygia bicolor* (Fla.) Schoepfia chrysophylloides (Fla.) TORCHWOOD GUAVA Balsam, Amyris balsamifera (Fla.) Psidium guajava △ (Fla., Calif.) TREMA HAWTHORN West Indies, Trema lamarckiana (Fla.) Barberry, Crataegus berberifolia (III., Kan., Tx, Miss., VAUQUELINIA Fewflower, Vauquelinia pauciflora (Ariz.) Ky., Mo., La., Ark.) Brainerd, Crataegus brainerdii (Mich., Ohio, Pa.) WHITE-MANGROVE Broadleaf, Crataegus dilatata (N.Y., Vt., N.H.) Laguncularia racemosa (Fla.) Gregg, Crataegus greggiana (Texas) Harbison, Crataegus harbisonii (Tenn., Ala., Miss.) Balsam, Salix pyrifolia (Minn., Wis., Mich., N.Y., Maine) Pensicola, Crataegus lacrimata (Fla.) Basket, Salix viminalis (Mass., Maine, Conn., R.I., Vt.) Reverchon, Crataegus reverchonii (Mo., Kan.) Dusky, Salix melanopsis (Wash., Ore., Utah, Calif., Wyo.) Threeflower, Crataegus triflora (Ga., Ala., Miss.) Geyer, Salix geyerana (Mont., Ariz., Colo., Wyo.) Parentheses Indicate Willow, Crataegus saligna (Colo.) Littletree, Salix arbxsusculoides (Alaska) states in which species can be found. HOLLY Northwest, Salix sessilifolia (Wash., Ore.) Dune, Ilex opaca var. arenicola (Fla.) River, Salix fluviatilis (Maine, Minn., S.D., Kan., Va.) Georgia, Ilex longpipes (S.C., Ga., La.) A Indicates naturalized Satiny, Salix pellita (Minn. Wis., Mich., N.Y., Maine, Vt., N.H.) Sarvis, Ilex amelanchier (N.C., S.C., Ga., Fla., La.) WINTERBERRY Tawnyberry, Ilex krugiana (Fla.)

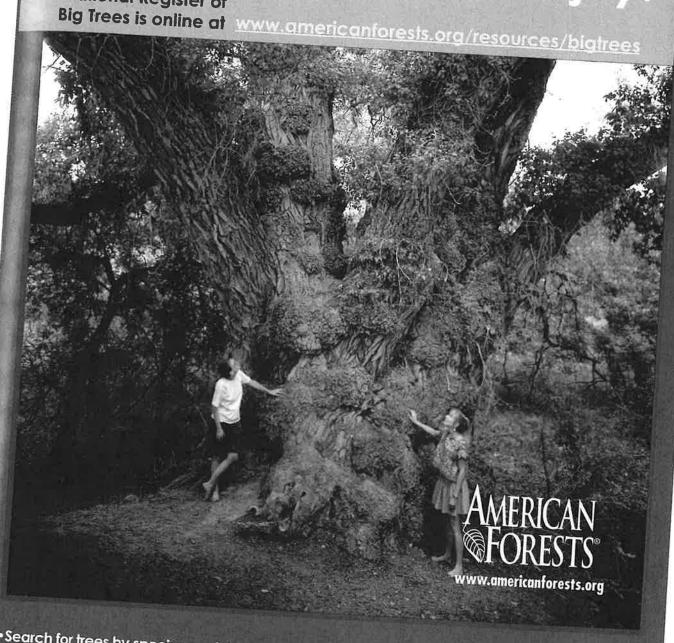
Smooth, Ilex laevigata (N.Y., Maine, S.C.)

Schott, Yucca schottii (N.M., Ariz.)

YUCCA

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# STATURE BEYOND SIZE

Don't let its small size fool you; Maryland is the nation's matriarch of monumental trees. by Whit Bronaugh

N 1955, when the National Register of Big Trees was 15 years old, guess which state had the most national champions? Nope, not Florida (now #1). Not California (now #2). Not Arizona (3), Texas (4), Virginia (5), or Michigan (6). It's not in the South where tree diversity is highest and most exclusive, and it's not in the Pacific Northwest where it rains almost daily.

Unless you really know Big Tree history, you'd have to guess because the answer is surprising. In 1955 it was tiny Maryland that topped the charts with 45 of the biggest trees in America.

True, Maryland did have a head start, having invented the Big Tree contest way back in 1925. When American Forests started the National Register in 1940, it emulated Maryland's program and soon promoted 34 of Maryland's big trees to national primacy. Over the years, the number of national champs there dwindled as more and more people in the rest of the country joined in the search for big trees.

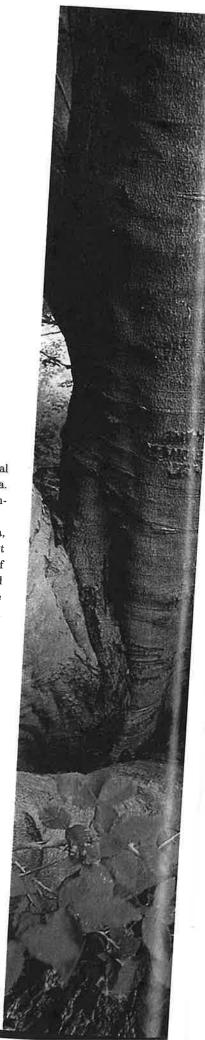
Even today, 64 years after the national search began, Maryland—which ranks 42nd among states in land area—is in 14th place in Big Treedom with 10 national champs. Even more surprising, if you level the playing field by looking at the density of champions in each state, Maryland comes in at number 3! Only Virginia,

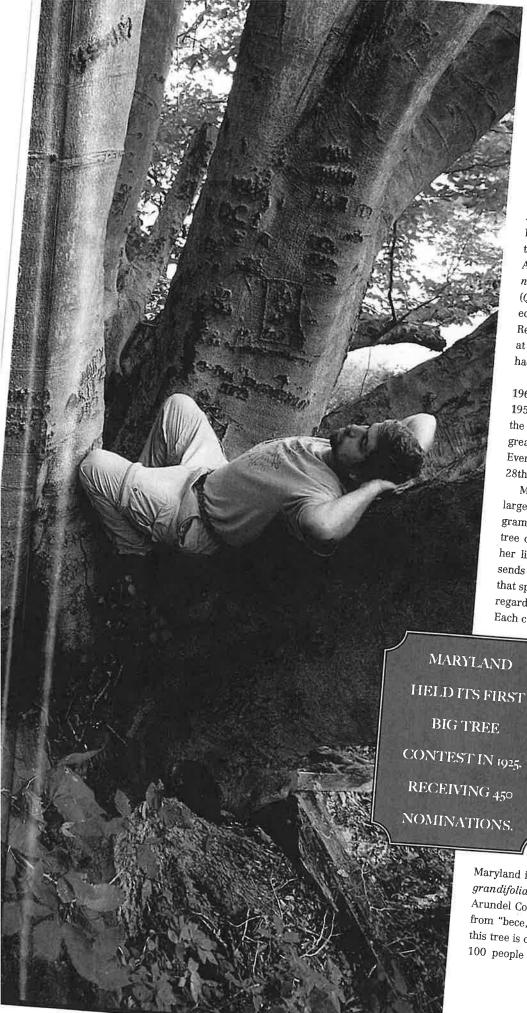
just barely, and Florida, with all its subtropical species, have more relative to their land area. The state that started it all has a national champion tree for every 978 square miles.

Before Europeans came to North America, Maryland, like most of the East, was almost entirely covered in forests, with vast regions of old-growth. Newcomer mentality and greed laid waste to these seemingly endless forests to make way for agriculture and settlements and to feed the logging boom of the 1800s. Few people looked past the profit of the next few years, or beyond their own horizons, unless it was to seek other forests to exploit. Fortunately, these attitudes began to change in the early 20th century, although it was too late for all but a tiny fraction of the old-growth. By then, only 20 percent of the state had any forest cover at all.

The turning point came in 1906 when Fred Besley, a former student of Gifford Pinchot, the "father of American forestry," became Maryland's first state forester. As a forest service of one, Besley spent the first seven years of his 36-year tenure roaming "every cowpath in Maryland" on a horse-drawn buggy to survey the state's forests.

He took a special interest in photographing, measuring, and maintaining a Notable Tree List of the biggest specimens he found. To compare the size of differently shaped trees, Besley developed a formula to combine the tree's girth,





height, and crown spread, weighted for importance in that order, into one number. He noticed people across the state were also intrigued by big trees, so he held the first Big Tree Contest in 1925 and received 450 nominations.

Jump ahead to 1940 when forester Joseph Stearns famously challenged "all who come in contact with trees. . . to fight for the preservation of our biggest tree specimens." In response, American Forests began the National Register of Big Trees using Besley's formula, and nominations came pouring in from across the country. After Connecticut's chestnut oak (Quercus prinus), the second tree crowned was the white oak (Quercus alba) of Wye Mills, Maryland, nominated, of course, by Fred Besley. When the first full Register was published in 1945, 42 states claimed at least one of the list's 228 champions. Maryland had the most with 37-34 nominated by Besley.

Maryland held onto the number one spot until 1966, reaching a high of 45 national champs in 1955. Since then, the odds have caught up with the little state, but it has always boasted a much greater number than size alone would indicate. Even at a low of five champs in 1944, it ranked 28th, 14 places higher than its rank by land area.

Maryland has maintained its prominence largely through an exceptional state big tree program. Maureen Brooks, American Forests' big tree coordinator for the Old Line State, updates her list on a web site twice each year. Brooks sends a certificate and a list of all nominations for that species to the owner of each nominated tree, regardless of whether it becomes the champ. Each contender for a big tree title is checked and

measured by a state forester.

In the near future, Brooks hopes to have all of Maryland's big trees in a digital geographic data set that, when layered over land-use plans, will improve a champ's chances of surviving the next shopping mall or road improvement.

Recently I had the privilege of following in Fred Besley's buggy tracks to visit a few of the 275 Maryland state champs that have achieved national recognition.

The biggest national champion tree in Maryland is a 429-point American beech (Fagus grandifolia) that grows on a farm in Anne Arundel County. If the word "book" was derived from "bece," an Old English form of beech, then this tree is certainly a book writ large. More than 100 people have staked their claim, expressed

their love, or otherwise symbolized their story on its smooth silvery-gray bark. There are several hand outlines, a couple of stick figures, and a solitary, enigmatic asterisk. No telling how many other initials, names, and hearts lie hidden underneath. Following the handholds of so many kids that grew up nearby, I hoisted myself up among its forest of 17 major limbs, each 1-3 feet in diameter, which join into a massive trunk 7 1/2 feet thick.

I scooted out along a horizontal limb for 32 feet and looked back to get a better read on the champ's size. The long stout limbs shoot out 50 to 100 feet in all directions like an exploding firework. The canopy was so dense that it took 10 minutes of steady rain before I felt the first drop.

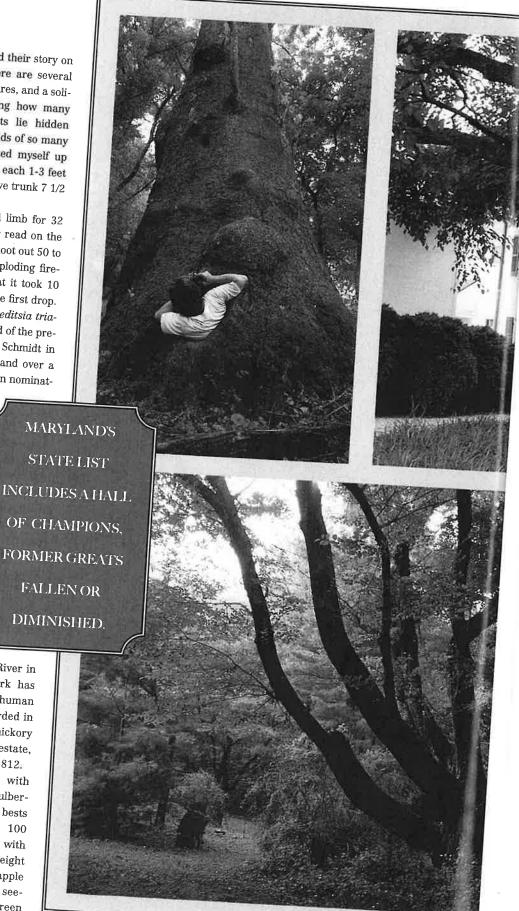
Today's champion honeylocust (*Gleditsia tria-canthos*) towers 100 feet over the yard of the pre-revolutionary home of Gary and Lin Schmidt in Frederick County. It is 26 feet taller and over a foot thicker than the national champion nominated by Fred Besley in the first Register.

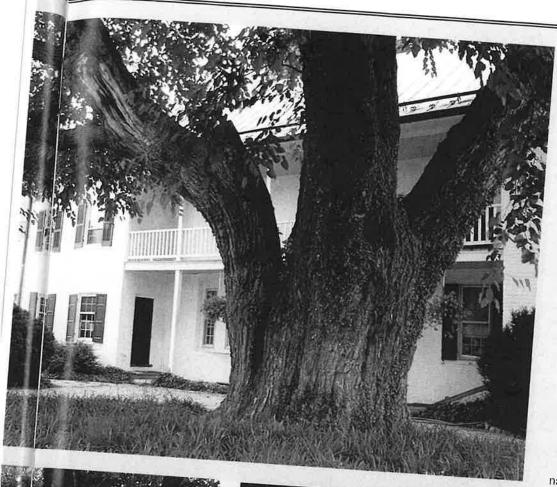
An ice storm bested the strength of one of its four major limbs but left its height and nearly 20-foot girth intact, allowing it to fend off a recent challenge from a former co-champion in Virginia.

Field guide authors describe the common chokecherry (Prunus virginiana var. virginiana) as a shrub or small tree that grows to a maximum height of about 30 feet and a diameter of 8 inches. Tell that to Frank and Wendy Rurka, of Owings Mills, who proudly own a specimen 74 feet tall and over 4 feet in diameter!

On the banks of the lower Patuxent River in Calvert County, Jefferson Patterson Park has yielded artifacts spanning 9,000 years of human history. The last 200 years are also recorded in the rings of the stately champion sand hickory (Carya pallida) growing on the Patterson estate, near the site of a battle from the War of 1812.

The other Maryland heavyweights with national standing are a 349-point black mulberry (Morus nigra) in Westminster that bests Besley's old nomination by more than 100 points, and a newly crowned chestnut oak with a girth of nearly 23 feet. In the middleweight division is a 158-point southern crab apple (Malus angustifolia) in Chestertown. Upon seeing it for the first time, new owner Maureen







Clockwise from upper left:

The author shoots the state

champ eastern sycamore in

Carroll County from the inside

out, the stately national champ

black mulberry in Westminster,

Jefferson Park's

national champion sand hickory

in Calvert County, and the

national champion common

chokecherry in Owings Mills.

Chokecherries are often

considered a shrub, growing no

more than 30 feet tall: this one

towers to more than twice that.





#### AROUND THE STATE

Clockwise from upper left:

The national champion southern crabapple resides in historic

Chestertown, much to the delight of its owner; the national champion honeylocust, in Frederick

County, is more than 26 feet taller and over a foot thicker than the Maryland champ from the first

National Register of Big Trees; the view now and then where the

Wye Oak stood in tiny Wye Mills

on the Eastern Shore.







#### MARYLAND

MacLaughlin hugged it and exclaimed, "This will be my [special] tree!"

The flyweights include a 62-point hazelnut (Corylus americana) in Prince Frederick, a 52-point poison-sumac (Toxicodendron vernix) in Arnold, and a 30-point, 2 1/2 inch-diameter co-champ shrub althea hibiscus (Hibiscua syriacus).

A champion is the largest currently known individual of its kind, and not necessarily the biggest one ever recorded. In its state list, Maryland also includes a "Hall of Champions," the former greats, since fallen or diminished, which once were larger than the current state champ. Seven of these peerless giants (gray birch, black tupelo; tamarack; bigleaf magnolia; and turkey, willow, and white oak) would have soundly beaten the current national champions as well, by margins of 27 to more than 100 points.

The most famous former Maryland champion is, of course, the Wye Oak, which finally surrendered to wind and gravity in 2002. This mightiest of all white oaks was the last of Fred Besley's national champions to be dethroned. Not only was it the biggest white oak, it was the biggest tree of any kind ever measured in Maryland. It was also the first tree to ever be purchased by a government to ensure its preservation.

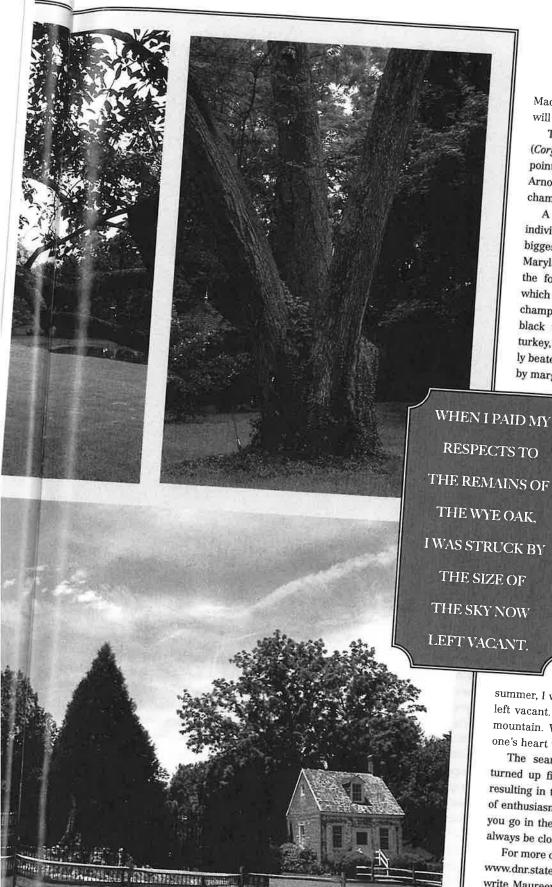
Ten years ago, when I first visited the Wye Oak, I was humbled by its greatness. Even when I paid my respects to the

remaining stump in Wye Mills last summer, I was struck by the size of the sky now left vacant. It was as if someone had moved a mountain. With it went a little piece of everyone's heart who knew it in life.

The search for a new national champion turned up five nominations in Maryland alone, resulting in three state co-champions. That kind of enthusiasm will ensure that, no matter where you go in the little state that started it all, you'll always be close to a champion tree.

For more on Maryland's big tree champs, write www.dnr.state.md.us/forests/trees/bigtree.html, or write Maureen Brooks, Maryland Forest Service, 9405 Old Harford Rd., Baltimore, MD 21234.

Photojournalist Whit Bronaugh lives in Eugene, Oregon.



## rom little acorns Champion Oaks Grow

A journey through the life of one of America's most prolific trees. by Whit Bronaugh



Several hundred years ago, deep in the ancient virgin forests of the Great Smoky Mountains of Tennessee, an eastern gray squirrel forgot where he buried an acorn. The acorn germinated, survived the browsing of deer, the gnawing of rabbits, and the chomping of caterpillars and shot up to the light. Decades passed. In the mid-1700s, acorns and leaves of other trees like it were shipped off to Sweden where a man named Carolus Linnaeus decided they were different than the four North American oaks he had already named and described. He

called the new species Quercus prinus, after the Latin and Greek for 'fine tree' and 'oak.'

Back in America, Quercus prinus was better known as mountain or rock oak, after its preferred habitat; tanbark oak after its preferred use; and nowadays, chestnut oak after the shape of its leaves. Oblivious to all this name calling, our tree in the Smokies kept on growing and dropping tens of thousands of acorns in the hopes that a few would enjoy its luck and success. Chestnut oak bark is chock full of tannin, the evolutionary chemical weapon of mast indigestion. Whenever leaf munchers attacked our chestnut oak, it flushed its foliage with tannins and released more into the air as a chemical call to arms to nearby oaks. But evolution has a way of backfiring when humans get involved. From Maine to Alabama, the armor of chestnut oaks looked like gold to the tanners who often felled the great trees, stripped the bark, and left the naked wood to rot.



Oaks evolved during the

Cretaceous Period some 90 million

years ago, a good 30 million



years before a certain asteroid is
thought to have made
history of the dinosaurs.... Today

there are more than 600 species

of oaks worldwide.

Clockwise from above, the sawtooth oak acorn, the national champion

Texas live oak, an acorn from a bur oak, and the national champ bur oak.

Our tree survived at first through inaccessibility, and, since 1930, by the foresight of conservationists who established Great Smoky Mountains National Park. Secure from the tanners, loggers, and settlers, our chestnut oak quietly and consistently laid on wood as it entered the prime of its old growth.

Meanwhile, in 1940, AMERICAN FORESTS began the search for big trees. The first of all national champion trees to be officially nominated was another chestnut oak growing near Suffield, Connecticut. Connecticut's oak reigned only a short time until a much larger tree in Maryland was nominated by the 'father of big trees' himself, Fred Besley.

The crown passed on to other mighty chestnut oaks until one day in 1997. Arthur Stupka, Will Blozan, and Michael Davie discovered and measured our bythen kingly tree in the Smokies. It towered 144 feet high, spread 70 feet wide, and sported a girth of more than 18 feet.

Such is the fate of oaks that a tree crowned as the "king" of its species may owe its royalty to the whims of an absentminded squirrel.

Similar stories for other oaks and their champions have played out all across America, but the history of oaks goes much further back in time. Oaks evolved during the Cretaceous Period some 95 million years ago, a good 30 million years before a certain asteroid is thought to have made history of the dinosaurs.

Ever since, oaks have formed an important, sometimes dominant component of forests on all wooded continents except Australia. Today there are more than 600 species of oaks worldwide. Closer to home, *Quercus* is, by far, the most diverse genus of tree in North America with 58 native species and nine varieties currently recognized in American Forests' National Register of Big Trees.

This great diversity of "fine trees" is concentrated in the Southeast where several states have more than 30 species. Texas has the most—35 species—because it overlaps the ranges of oaks that are restricted to the southeastern forests, southwestern woodlands and mountains, or the south-central plains.

California has only 10 oaks that reach tree size but three are endemic while three others are shared only with Mexico. Every continental state has native oak





trees except Alaska and Idaho.

National champion oaks are likewise widely distributed. In the last Register, the 75 champion and co-champion oaks, representing 64 species and varieties, were scattered among 20 states from Washington and California to New York and Florida. Most are concentrated in the southern tier states, which have longer growing seasons and are home to many oak species not found further north.

Texas again comes out in front with 11 oak champs, followed by Georgia (9); Virginia, California, and Florida (each with 7); and Arizona (6). The lack of competition for the crowns of regional endemic oaks accounts for much of the success of Texas, California, and Arizona, but the standing of Georgia, Virginia, and Florida

probably has more to do with the effort and skill of big tree hunters.

The adjacent states of Alabama and North Carolina have just one oak champion each, and South Carolina has none, even though these states support a comparable diversity.

The biggest oaks come in all sizes, each according to its species' potential. In fact, no other genus of broadleaf tree covers

the size range of oaks, from the 60-point Mohr oak (Quercus mohriana) in the Guadalupe Mountains of Texas to the 536-point valley oak (Quercus lobata), near Covelo, California. In the heavyweight division, four other champion oaks—live (Quercus virginiana), northern red (Quercus rubra), white (Quercus alba), and southern red (Quercus falcata) exceed 500 points, an achievement matched by only eight other broadleaf trees.

Oaks also hold a large proportion of titles in the light heavyweight division with 10 of the 32 broadleaf champions that score between 400 and 500 points. These mighty monarchs include the California black (Quercus kelloggii), coast live (Quercus agrifolia), canyon live (Quercus chrysolepis), and blue (Quercus douglasii) oaks of the West Coast; the black oak (Quercus velutina) of the East; the bur oak

 $\mathcal{S}_{ ext{imply}}$  by growing into

big, beautiful forms, interacting with

the natural world and resolutely

withstanding the ravages

of time, these "fine trees" teach us

to be finer humans.



Above, the fruit of a red oak tree.

At right, a chinkapin oak and a closer look at its acorns.

(Quercus macrocarpa) of central North America; and the water (Quercus nigra), willow (Quercus phellos), cherrybark (Quercus falcata var. pagodifolia), and overcup (Quercus lyrata) oaks of the Southeast.

Four hundred points may not sound like much next to the stratospheric 1,200-point range of redwoods and sequoias, but keep in mind that the average diameter of these 400-point oaks is over 8 feet! (Keep in mind, also, that the diameter of a tree is the same as thickness, as opposed to circumference, which is the distance around the tree.)

Still quite impressive are the 20 middleweight champion oaks with 300-399 points, averaging over 6 feet thick. The 12 lightweight titleholders (200-299 points) would still stand out with respectable diameters from 3-5 feet. Featherweight oaks (100-199 points), averaging a bit over 2 feet thick, may seem unremarkable but they are the giants of their kind.

And last but least only among champions, the four flyweights—bear (Quercus ilicifolia), Havard (Quercus havardii), dwarf chinkapin (Quercus prinoides), and Mohr oaks—with 1-foot thick trunks and less than 100 points may look like they are just getting started until you realize that they are best known as thicket-forming shrubs.

The four biggest oaks also have the biggest girths. They are led by a live oak near Lewisburg, Louisiana, that is the epitome of stoutness with a diameter of more than 11 feet!

Exceeding diameters of 10 feet are the co-champion live oak in Waycross, Georgia; the biggest northern red oak in Monroe County, New York; the champion valley oak near Covelo, California; and the former white oak champion of Wye Mills, Maryland. Shoulder to shoulder, at least 20 people could stand with their backs against each of these leviathans.

In terms of crown spread—another measurement factored into a tree's point total—of the 49 champion trees with crown spreads exceeding 100 feet, 19 are oaks. The biggest crowns of all are the forests-by-themselves canopies of a southern red oak (156 feet) in Thomaston, Georgia; a swamp chestnut oak (Quercus michauxii) (148 feet) in Fayette County, Alabama; and the co-champion live oak (140 feet) in Waycross, Georgia. Together,





these three trees could shade an entire football field.

Oaks achieve great reach by the virtue for which they are best known: their strength. The word 'robust' actually comes from the Latin *robur*, which is synonymous with "strength" and "oak."

Other trees put their faith in flexibility and bend with the wind. They may also have foliage that is shaped and structured so that high winds force leaves to curl up or lay along the branch and thereby reduce tree-toppling drag. But oaks stand rigid in defiance of the gales and stoically endure heavy armors of ice and mantles of snow with nary a drop of live twig.

As if size and strength were not enough inspiration, oaks also attain great ages, at least for a broadleaf tree. Direct ring counts have been made of oaks over 400 years old. No wonder one-third of our champion broadleaf trees that score more than 400 points are oaks.

Hundreds of wildlife species depend on oaks, hundreds of uses have been made of their wood, hundreds of historical events have been associated with their lives, hundreds of cures have been derived from their extracts, and hundreds of cultures have considered them sacred. Today, with our modern retreat indoors, and greater dependence on manufactured materials, oaks are not as prevalent in our lives as they once were.

But that has only increased their most important value. Simply by growing into big, beautiful forms, interacting with the natural world, and resolutely withstand-

ing the ravages of time, these "fine trees" teach us to be finer humans.

Watch a little acorn grow into a mighty oak and learn from its process: Take what you need from Mother Earth, make the most of it, and then give it all back. Endure your winters without complaint, and celebrate the joy of every each and spring.

Slow down, pay attention, and never stop growing. AF

Whit Bronaugh chronicled a year in the life of the national champion bur oak in our Winter 2003 issue.