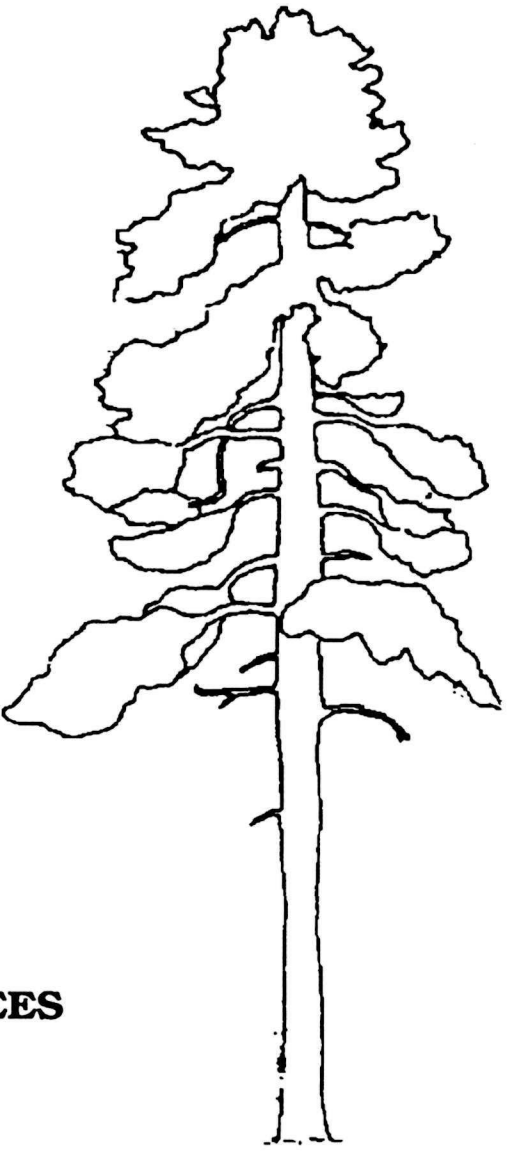

FORESTS AND INTERESTING TREES

IN THE NATIONAL PARK SYSTEM

U.S. Department of the Interior
National Park Service
Wildlife and Vegetation Division

FORESTS AND INTERESTING TREES IN THE NATIONAL PARK SYSTEM

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A 1993 revision of "The 40 Most Interesting Trees in the National Park System", by John R. Vosburgh (1970s)

THE FORESTS OF NORTH AMERICA range from the giant conifers of the West Coast and towering hardwoods of the Southern Appalachians to salt-trimmed maritime forests and ground-hugging timberline trees. Samples of most of these many forest types can be found in the National Park System, often in near-primeval condition.

In the East, northern parks like Voyageurs and Acadia are set in forests of spruce, fir, and pine. Shenandoah National Park, in the central Appalachians, is now blanketed with oak forests that have reclaimed the land after pre-park farming. Farther south, Great Smoky Mountains National Park is tree heaven, with a world-famous profusion of species in forests ranging from low-altitude cove hardwoods to mountaintop spruce-fir. A temperate climate, high rainfall, and protection have here produced trees, by eastern standards, of giant proportions. Congaree Swamp National Monument in South Carolina harbors the most extensive mature bottomland hardwood forest remaining in southeastern United States, with many magnificent tupelos, bald cypresses, oaks, sweetgums, and loblolly pines.

Very different, by comparison miniature, forests of pine and evergreen oaks grow in some coastal parks like Cumberland Island National Seashore in Georgia. Completely different still are the mangroves and subtropical hammocks of Everglades National Park.

In the mountainous West, altitude plays a much greater role than in the East. Moisture increases and temperature decreases with elevation, producing a zonation of different forest types, composed mostly of conifers. In Rocky Mountain National Park, for instance, junipers, mixed with ponderosa pines, grow on the dry lower slopes, and Douglas-firs on cooler, more moist north-facing slopes. Above 9,000 feet cool forests of Engelmann spruce and subalpine fir extend to timberline and the beginning of alpine tundra. A similar progression occurs on the moisture-laden, mossy slopes of Washington's Olympic National Park, but here the dominant trees are Sitka spruce in the lowlands, with western hemlock, silver fir, and subalpine fir typifying succeedingly higher zones. Olympic's conifers are huge--many grow more than 200 feet tall--and they live for hundreds of years.

Of course the champion forests for size and age are the redwood and giant sequoia stands of the West Coast. Coast redwoods, which can be seen in Redwood National Park and Muir Woods National Monument in northern California, reach heights over 300 feet and ages around 2,000 years. The tallest known tree in the world is a 367.8-foot coast redwood in Redwood

National Park. The giant sequoias of Yosemite, Sequoia, and Kings Canyon national parks, in the Sierra Nevada, though not as tall as redwoods, grow larger in diameter and live at least 4,000 years.

In terms of age alone, the North American, if not world record, was held by a bristlecone pine cut in 1964 in Nevada, in what is now Great Basin National Park. When cut it was found to be at least 4,900 years old, though short and twisted like others of its kind. Some of the living bristlecones there, growing at elevations between 9,000 and 12,000 feet, are more than 4,500 years in age.

Since most of America's forest lands are subject to timber harvesting, national parks are one of the few kinds of places where you can still see forests as they were before European settlement. Human influence is held to a minimum in parks, and nature rules. This does not, however, guarantee a tree freedom from any disturbance. Nature may fell it with fire, wind, landslides, insect attack, lava, or glacial ice. In Alaska's Glacier Bay National Park, you can see the succession of forests that returned after glaciers retreated, from 200-year-old spruce-hemlock forests near the coast to younger forests and finally bare earth at the head of fjords. In Mount Rainier National Park, fires widely spaced over the centuries have produced a mosaic of forest stands from less than a hundred to over a thousand years old.

Long-lived trees such as bristlecone pines and giant sequoias can tell us much about past climates through the number and width of tree rings. National Park Service research on global climate change is currently conducting tree-ring analysis in Glacier, Olympic, and Sequoia national parks, the Ozark Highlands, Big Thicket National Preserve in Texas, and Saguaro and Organ Pipe Cactus national monuments in Arizona. Such data can give us clues to what may happen to our forests if global warming occurs.

Study of fire scars on trees can reveal the dates, intensity, and extent of past fires, thus indicating the natural frequency of fires in given types of forests. This information is important for restoring natural fire regimes in parks where fire was universally suppressed for many years. Such research showed that the major fires in Yellowstone in 1988 were not out of character with the area's long-term fire history and should be viewed as a natural, expectable occurrence, not a catastrophe.

Trees of human historical interest usually don't grow in forests. Many have been planted, such as those on the White House grounds. Others have been witness to major events of past centuries now commemorated in cultural national parks. Such old friends gain in our affection with each passing year. Those that occur outside the natural zones of parks may receive a helping hand because of their special significance. Trees in natural zones must take their chances with the vagaries of nature.

Many trees of special genetic value are protected in the national park system. Among these are old or rare varieties of fruit trees that survive in historical parks or at old homesites.

All trees are interesting. The list below singles out some of the most interesting--for their size, oddity, historical associations, or other attributes. Trees described as largest in the U.S., or national champions, are from the American Forestry Association's National Register of Big Trees, 1992 Edition. AFA's scoring system adds circumference in inches at a height of 4 1/2 feet, total height in feet, and one-quarter of the average crown spread, in feet, to obtain the total points for a tree. This system thus gives most weight to circumference, which usually is a good indicator of total wood volume. The AFA lists any trees within 5 points of the highest score as co-champions.

Of about 750 champions listed in the Register, 41 are in the National Park System. Interestingly, the park with the most national champions is Big Bend, in Texas, with 13. It has some of the smaller, less known species, like the Chisos oak and Texas madrone. Many impressive state champions also grow in national park system areas, but they are not listed here for reasons of space.

NORTH ATLANTIC REGION

THE ELISHA JONES SYCAMORE, Platanus occidentalis, Minute Man National Historical Park, Massachusetts. Tree saw the Battle of Concord, April 19, 1775.

MID-ATLANTIC REGION

NATIONAL CHAMPION BLACKHAW, Viburnum prunifolium, George Washington Birthplace National Monument. Height 24 feet, circumference 5 feet, 4 inches.

HACKBERRY, Celtis tenuifolia, George Washington Birthplace National Monument, Virginia. This tree, over 200 years old, probably took root during Washington Family occupation.

NATIONAL CO-CHAMPION FANLEAF HAWTHORNS, Crataegus flabellata, Shenandoah National Park, Virginia. Both these trees are 30 feet tall. Circumferences are 24 and 26 inches.

NATIONAL CO-CHAMPION COMMON WINTERBERRY, Ilex verticillata, Shenandoah National Park, Virginia. Height 19 feet, circumference 10 inches.

BOOKER T. WASHINGTON RED CEDAR, Juniperus virginiana, Booker T. Washington National Monument, Virginia. Saw the reading of the Emancipation Proclamation to the slave boy Booker in spring 1865.

BOOKER T. WASHINGTON CATALPA, Catalpa speciosa, Booker T. Washington National Monument, Virginia. Also saw the reading of the Emancipation Proclamation to young Booker in spring 1865.

THE WASHINGTON ELM, Ulmus procera, Fort McHenry National Monument, Maryland. Planted by the Daughters of the American Revolution in 1932 to commemorate the 200th anniversary of George Washington's birth. Propagated asexually from the "Cambridge Elm," under which George Washington supposedly stood as he took command of the Continental Army in Boston in 1775. The tree now stands 89 feet tall.

THE BICENTENNIAL OAK. a White Oak, Quercus alba, Fort McHenry National Monument, Maryland. Planted in 1976, this tree is a seedling of the national champion "Wye Oak."

SAUCER MAGNOLIA HYBRID, Magnolia heptapeta x M. quinquepeta, Hampton National Historic Site, Maryland. Planted about 1830, this is possibly one of the first seedlings of this hybrid developed in France in 1822. This tree, now a state champion 48 feet tall and over 7 feet in circumference, was much written about as early as 1889.

INDIAN BEAN TREE, Catalpa bignoniodes, Hampton National Historic Site, Maryland. A set of three growing on the Great Terrace, these trees, core-dated to 1774-1789, were most likely part of the original landscape design for the Mansion.

THE VALLEY FORGE SYCAMORES, Platanus occidentalis, Valley Forge National Historical Park, Pennsylvania. Three very large sycamore trees witnessed the Encampment of the Continental Army at Valley Forge during the winter of 1777-78. Another tree, the "Lafayette Sycamore," which stands near the quarters of General Lafayette, is about 300 years old.

THE KNOX BLACK WALNUT, Juglans nigra, Valley Forge National Historical Park, Pennsylvania. Named after General Knox, who was quartered nearby, this Black Walnut is the state champion and estimated to be 250-300 years old.

GETTYSBURG ADDRESS HONEYLOCUST, Gleditsia triacanthos, Gettysburg National Military Park, Pennsylvania. The only tree in the Gettysburg National Cemetery that dates to the Battle of Gettysburg and Lincoln's Gettysburg Address dedicating the cemetery in 1863.
CULP'S HILL OAK, Gettysburg National Military Park, Pennsylvania. A hollowed-out White Oak, Quercus alba, near the summit of this Union stronghold, it is the only identified survivor of the Battle of Gettysburg on this prominence. It received tree surgery in 1911 by the War Department as a means to prolong the life of this battle-injured specimen tree.

THE GIBBON WALNUT, Gettysburg National Military Park, Pennsylvania. This Black Walnut, Juglans nigra, stands near the center of the Union position on Cemetery Ridge, at the approximate location where General John Gibbon was wounded during the repulse of Pickett's Charge on July 3, 1863.

SICKLES HEADQUARTERS TREE, Gettysburg National Military Park, Pennsylvania. This Swamp White Oak, Quercus bicolor, located near the Trostle barn, was used by Union Third Corps commander, General Daniel S. Sickles, to designate his field headquarters during the intense fighting along this battle line on July 2, 1863.

THE HETH OAK, Gettyburg National Military Park, Pennsylvania. This White Oak, Quercus alba, located at the northern fringe of Reynolds Woods, was identified after the war by Confederate General Henry Heth as the site where he was wounded during the attack by his division on Union lines at McPherson's Farm, July 1, 1863.

OLD GRANDDAD, Gettysburg National Military Park, Pennsylvania. Located on the western slope of Big Round Top, this Tulip Poplar, Liriodendron tulipifera, was standing at the time of the earliest European settlement of the Gettysburg area and witnessed the Battle of Gettysburg in 1863.

STATES AND TERRITORIES TREES, Eisenhower National Historic Site, Pennsylvania. These alternating pairs of Norway Spruce and Flowering Quince trees were planted along the entrance lane of President Dwight D. Eisenhower's Gettysburg Farm in 1955 to form an alee (alley or pathway). Fifty spruce trees were donated by the then existing 48 states and two territories, each of which was identified by donor state, and the 53 Flowering Quinces were the gift of the President's cabinet and U.N. ambassador. Most of the original trees still survive.

NATIONAL CAPITAL REGION

TREES PLANTED BY PRESIDENTS AT THE WHITE HOUSE:

JOHN QUINCY ADAMS: AMERICAN ELM. An American elm planted by Adams survived until the fall of 1991. A grafted tree propagated from the original John Quincy Adams elm was planted in the same location by Mrs. Bush.

ANDREW JACKSON: SOUTHERN MAGNOLIA (2). "Something green in memory of Rachel." Planted in honor of his wife, who died just before he entered the White House.

GROVER CLEVELAND: JAPANESE MAPLE.

BENJAMIN HARRISON: SCARLET OAK.

WARREN G. HARDING: SOUTHERN MAGNOLIA.

HERBERT C. HOOVER: WHITE OAK (2)

FRANKLIN D. ROOSEVELT: SOUTHERN MAGNOLIA, LITTLE LEAF LINDEN, WHITE OAK.

DWIGHT D. EISENHOWER: NORTHERN RED OAK, PIN OAK.

JOHN F. KENNEDY: SAUCER MAGNOLIA (2)

LYNDON B. JOHNSON: WILLOW OAK, FERN-LEAF BEECH

RICHARD M. NIXON: FERN-LEAF BEECH

GERALD R. FORD: WHITE PINE, AMERICAN ELM

JIMMY CARTER: JAPANESE MAPLE, CEDAR OF LEBANON, RED MAPLE

RONALD REAGAN: WILLOW OAK, SUGAR MAPLE, WHITE SAUCER MAGNOLIA (2)

GEORGE BUSH: LITTLE LEAF LINDEN, EASTERN REDBUD, PATMORE ASH, PURPLE BEECH

SOUTHEAST REGION

NATIONAL CHAMPION BLACK-MANGROVE, Avicennia germinans, Everglades National Park. Height 61 feet, circumference 7 feet, 2 inches.

NATIONAL CHAMPION RED MANGROVE, Rhizophora mangle, Everglades National Park. Height 75 feet, circumference 6 feet, 5 inches.

NATIONAL CHAMPION BUCCANEER-PALM, Pseudophoenix sargentii, Biscayne National Park. Height 23 feet, circumference 2 feet, 6 inches.

NATIONAL CHAMPION BUTTERBOUGH, Exothea paniculata, Biscayne National Park. Height 45 feet, circumference 4 feet, 4 inches.

NATIONAL CHAMPION CANELLA, Canella winterana, Biscayne National Park. Height 29 feet, circumference 1 foot, 7 inches.

NATIONAL CHAMPION ROUGHBARK LIGNUMVITAE, Guaiacum sanctum, Biscayne National Park. Height 37 feet, circumference 4 feet, 8 inches.

NATIONAL CHAMPION TALLOWWOOD, Ximenia americana, Biscayne National Park. Height 25 feet, circumference 1 foot, 4 inches.

NATIONAL CHAMPION TORCHWOOD, Amyris elemifera, Biscayne National Park. Height 24 feet, circumference 1 foot.

Note: The resource manager at Biscayne National Park thinks it likely that the champion trees there were knocked down by Hurricane Andrew, but even if prostrate, some may still be alive. No word has been received about the condition of the champion mangroves in Everglades National Park.

NATIONAL CHAMPION YELLOW BUCKEYE, Aesculus octandra, Great Smoky Mountains National Park. Height 145 feet, circumference 17 feet, 10 inches.

NATIONAL CO-CHAMPION PIN CHERRY, Prunus pensylvanica, Great Smoky Mountains National Park. Height 85 feet, circumference 5 feet, 11 inches.

NATIONAL CHAMPION RED HICKORY, Carya glabra var. odorata, Great Smoky Mountains National Park. Height 140 feet, circumference 11 feet, 10 inches.

NATIONAL CHAMPION FRASER MAGNOLIA, Magnolia fraseri, Great Smoky Mountains National Park. Height 107 feet, circumference 9 feet, 8 inches.

NATIONAL CHAMPION CAROLINA SILVERBELL, Halesia carolina, Great Smoky Mountains National Park. Height 86 feet, circumference 13 feet, 6 inches.

NATIONAL CHAMPION RED SPRUCE, Picea rubens, Great Smoky Mountains National Park. Height 123 feet, circumference 14 feet, 1 inch.

NATIONAL CHAMPION MOUNTAIN STEWARTIA, Stewartia ovata, Great Smoky Mountains National Park. Height 25 feet, circumference 1 foot, 3 inches.

NATIONAL CHAMPION POSSUMHAW, Ilex decidua, Congaree Swamp National Monument. Height 42 feet, circumference 3 feet.

SOUTHWEST REGION

THE MADONNA TREE, a Bald Cypress, Taxodium distichum, in Big Thicket National Preserve, Texas. Looks like a Madonna with child. Sculptured by fluctuating water at Cook's Lake, in the Beaumont Unit.

NATIONAL CHAMPION CHISOS HOPHORNBEAM, Ostrya chisosensis, Big Bend National Park. Height 32 feet, circumference 2 feet, 4 inches.

NATIONAL CHAMPION DROOPING JUNIPER, Juniperus flaccida, Big Bend National Park. Height 55 feet, circumference 8 feet, 6 inches.

NATIONAL CHAMPION TEXAS MADRONE, Arbutus texana, Big Bend National Park. Height 32 feet, circumference 9 feet, 4 inches.

NATIONAL CO-CHAMPION SCREWBEAN MESQUITES, Prosopis pubescens, Big Bend National Park. Heights 30 and 28 feet, circumferences 3 feet, 3 inches and 2 feet, 11 inches.

NATIONAL CHAMPION CHISOS OAK, Quercus graciliformis, Big Bend National Park. Height 66 feet, circumference 5 feet, 5 inches.

NATIONAL CO-CHAMPION GRAVES OAK, Quercus gravesii, Big Bend National Park. Height 42 feet, circumference 12 feet, 10 inches.

NATIONAL CO-CHAMPION GRAY OAK, Quercus grisea, Big Bend National Park. Height 50 feet, circumference 6 feet, 3 inches.

NATIONAL CHAMPION NETLEAF OAK, Quercus rugosa, Big Bend National Park. Height 38 feet, circumference 7 feet.

NATIONAL CO-CHAMPION VASEY OAK, Quercus pungens var. vaseyana, Big Bend National Park. Height 48 feet, circumference 3 feet, 9 inches.

NATIONAL CHAMPION MEXICAN PINYON PINE, Pinus cembroides, Big Bemd National Park. Height 66 feet, circumference 9 feet, 3 inches.

NATIONAL CHAMPION FRENCH TAMARISK, Tamarix gallica, Big Bend National Park. Height 55 feet, circumference 8 feet, 8 inches.
This is a non-native species from Eurasia that has become widely established in the West.

WESTERN REGION

GENERAL SHERMAN TREE, a Giant Sequoia, Sequoiadendron giganteum, in Grant Forest, Sequoia National Park, California. Largest known tree in the world. Height 275 feet, circumference 83 feet, 2 inches. Estimated to be 3,500 years old. Estimated weight: 2,147 tons.

GENERAL GRANT TREE, Giant Sequoia, in Grant Grove, Kings Canyon National Park, California. The second largest tree in the world, it is actually larger than the General Sherman up to the 60-foot level. Designated the Nation's Christmas Tree in 1925.

THE HART TREE, in Redwood Canyon, Kings Canyon National Park. Fourth largest tree and tallest of the five largest trees, all giant sequoias.

GRIZZLY GIANT, in Mariposa Grove, Yosemite National Park, California. Fifth largest tree. Has a 4-foot lean at 59 feet. At the top it is leaning 17.5 feet south and 5.5 feet west.

THE WAWONA TUNNEL TREE, in Mariposa Grove, Yosemite National Park. Though felled in 1969 by winter storms, this Giant Sequoia is still perhaps the world's most famous tree. For 87 years the Wawona Road passed through this tree on a passageway 26 feet wide cut in 1881 for stagecoach traffic. Automobiles used it through 1968.

CALIFORNIA TREE, Giant Sequoia in the Mariposa Grove, Yosemite National Park. (Not to be confused with the California Tree in Kings Canyon National Park.) Like the Wawona Tree, this is a tunnel tree. The passageway--20 feet long, 7 feet wide, and 9 feet high--was cut in 1895. When snow blocked use of the Wawona Tree, the road passed through the California Tree. In 1932 the route was relocated.

DEAD GIANT, Giant Sequoia in the Tuolumne Grove, Yosemite National Park. This is the third tunnel tree in the National Park System (not counting the Fallen Giant and the fallen Elephant's Foot in the Mariposa Grove). The Dead Giant is remarkable also because of its size (29.5-foot base diameter) and because Sequoiadendron giganteum rarely dies standing up.

HAVERFORD TREE, Giant Sequoia in the Mariposa Grove, Yosemite National Park, is more photographed for its fire scars than any other in the Mariposa Grove. Known as the Shelter Tree in stage-coach days, the tree sheltered as many as 15 horses in its 28-by-35-foot interior, accessible through three openings. Loud cracks were heard from the tree in 1940 and a 1 1/2-inch fissure developed. Severely damaged by fire in 1710. The tree is about 1,670 years old.

BLACK CHAMBER TREE, Giant Sequoia in the Giant Forest, Sequoia National Park. This tree is probably the most notable example of the sequoia's vitality. The entire interior and 97 percent of its bark were consumed by fire but the tree continues to live.

THE ROOM TREE, Giant Sequoia in the Giant Forest, Sequoia National Park. The base of this tree is a cavernous room entered through a window high on the trunk with use of a ladder.

THE SAWED TREE, near Big Stump Entrance of Kings Canyon National Park. Though sawed almost completely through by loggers, this sequoia didn't fall. Apparently in perfect balance, it has covered the sawcut with new growth.

TALLEST TREE IN THE WORLD, Redwood National Park, California. This Coast Redwood, Sequoia sempervirens, the Howard Libbey Tree, is 367.6 feet tall--the tallest known living thing. Discovered by Dr. Paul Zahl, National Geographic Society.

SECOND TALLEST TREE IN THE WORLD, Redwood National Park. This Coast Redwood, the Harry W. Cole Tree, is 365.4 feet tall.

THIRD TALLEST TREE IN THE WORLD, Redwood National Park. This Coast Redwood, the National Geographic Tree, is 364.5 feet tall.

THE DEDICATION TREE, Redwood National Park, achieved distinction as the site where President Nixon on August 27, 1969 dedicated Lady Bird Johnson Grove, an exceptional stand of virgin redwood, in honor of the former First Lady. The tree has two plaques at its base: one relating to the Grove dedication and one designating the spot where Mrs. Johnson dedicated the new Redwood National Park, November 25, 1968.

THE GLACIER POINT PINE, Yosemite National Park. This Jeffrey Pine, Pinus jeffreyi, clinging to the granite face of Glacier Point, altitude 7,214 feet, is widely photographed.

NATIONAL CHAMPION CURLLEAF CERCOCARPUS, Cercocarpus ledifolius, Great Basin National Park, Nevada. Height 26 feet, circumference 13 feet. Recent research indicates that large specimens of this species may be made up of more than one plant.

NATIONAL CHAMPION SUGAR PINE, Pinus lambertiana, Yosemite National Park. Height 270 feet, circumference 29 feet.

PACIFIC NORTHWEST REGION

NATIONAL CHAMPION ALASKA-CEDAR, Chamaecyparis nootkatensis, Olympic National Park, Washington. Height 120 feet, circumference 37 feet, 8 inches.

NATIONAL CHAMPION GRAND FIR, Abies grandis, Olympic National Park. Height 251 feet, circumference 19 feet, 1 inch.

NATIONAL CHAMPION SUBALPINE FIR, Abies lasiocarpa var. lasiocarpa, Olympic National Park. Height 129 feet, circumference 21 feet, 1 inch.

NATIONAL CO-CHAMPION WESTERN HEMLOCKS, Tsuga heterophylla, Olympic National Park. Three trees: heights 241, 202, and 227 feet; circumferences, respectively, 22 feet, 6 inches; 26 feet, 4 inches; and 24 feet, 3 inches.

NATIONAL CHAMPION VINE MAPLE, Acer circinatum, Olympic National Park. Height 62 feet, circumference 2 feet, 11 inches.

BIGLEAF MAPLE, Acer macrophyllum, British Camp, San Juan Island National Historical Park, Washington. Once the largest bigleaf maple in the United States, until it lost a major limb. The tree marks the site of British occupation on San Juan Island during the peaceful boundary dispute between the U.S. and Canada. The tree is 320 years old, 98 feet tall, with a circumference of 24 1/2 feet.