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BY JACK HORAN

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In an NC swamp, researcher finds tree older than Christianity. Could there be more?

Bald cypress trees along the Black River appear to be thousands of years old. "I wonder what these trees have seen." The Nature Conservancy has conserved thousands of acres of ancient bald cypresses along the Black River.

Scientists documenting the ages of bald cypress along the Black River in southeastern North Carolina have discovered an ancient tree whose annual growth rings show it to be at least 2,624 years old.

That means the cypress was alive centuries before the advent of Christianity, the Roman Empire and the English language. The new research finding released Thursday also means bald cypress ranks fifth among all tree species on Earth for tree longevity.

The study says a nearby cypress in the same river swamp is at least 2,088 years old. Scientists believe other, unsampled 2,000-plus-year-old trees exist along the 66-mile-long stream.

The study, published in the peer-reviewed journal "Environmental Research Communications," shows the Black River trees are far older than previously revealed in samplings that began in 1985. These cypresses already had been determined to be the oldest stand of trees in eastern United States, with ages of up to 1,650 years.

Professor David Stahle of the University of Arkansas, lead investigator on the studies, established the ages of the 2,000-plus-year-old trees beginning in 2017 by measuring annual tree-growth rings taken from coring the trunks and radiocarbon analysis.

"There are surely multiple trees over 2,000-year-old trees at Black River," Stahle said in a recent interview. "It's my belief there are some approaching, if not exceeding, 3,000 years old."

The venerable trees live in Three Sisters Swamp, owned by the N.C. Nature Conservancy and part of the Black River. The conservancy led a media tour by canoe and kayak into the half-mile-wide swamp forest on Thursday.

A few feet from the 2,624-year-old tree, Stahle stopped his canoe and swept his hand across the onyx-colored water as prthonotary warblers tweeted in the emerald-green canopy.

"You're in millennium-age trees," he said as the flotilla of 25 paddlers gathered. "There are thousands of 1,000-year-old trees."

Dark green moss formed a mottled pattern on the old tree's buttresses; its trunk was straight but the top limbs were gone. Interestingly, it was not the biggest cypress in view; others were much stouter.

"(For trees) over 2,000 (years in the swamp), there would probably be 10...20 to 30," he said. "This is one of the great old-growth forests left in the world."



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A conservancy staffer, Angie Carr, had guided Stahle to the two 2,000-year-old trees. He said he aged the oldsters so as to raise awareness of the unique stand.

“If we could really prove there are individual living trees that are 2,000 years old...that information could help advance conservation of the trees along the Black River.”

Dr. David Stahle: Stahle and a team from Arkansas accidentally discovered the extreme longevity of the Black River trees as part of a study to reconstruct the historical climate of the Southeast by measuring the width of tree rings. Tree rings are wide in wet years; narrow in dry years.

The study says “the annual tree ring-width chronology developed from the ancient Black River bald cypress trees is positively correlated with growing-season precipitation totals over the Southeastern U.S. and with atmospheric circulation over the Northern Hemisphere, providing the longest exactly-dated climate proxy yet developed in eastern North America.”

The annual ring-growth history taken from the Black River trees and others in Virginia have recorded extended wet and dry years, including the long-term droughts that likely impacted English settlements on North Carolina’s Roanoke Island in 1587 and Jamestown, Va., in 1607, according to the study.

Recently discovered 2,624-year-old bald cypress tree looms beside Julie Moore, front, and Dr. David Stahle in Three Sisters Swamp on the Black River in southeastern North Carolina. Moore, former botanist for the N.C. Natural Heritage Program, and Stahle, who determined the age of the ancient tree, oldest for its species in the world, led a media tour Thursday into the N.C. Nature Conservancy-owned swamp.

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In a 1988 study, among the trees verified to be more than 1,000 years old include a cypress locally known as “Methuselah” that dates to 364 A.D. It’s named for the Biblical figure who supposedly lived 969 years.

Stahle concluded the tree has been living for more than 1,700 years as it was already growing in the early Fourth Century. Scientists core into the trunk above the buttress at 9 feet high, meaning the tree has to have been growing for decades before it can reach 9 feet and higher. Bald cypress grow very slowly, especially in the acidic, low-nutrient waters of the Black, according to the study.

The Methuselah tree, eclipsed in age by the newly discovered 2,624-year-old cypress by nearly a millennium, also lives in Three Sisters Swamp. The swamp holds the Black’s largest concentration of ancient trees. They’re distinguished by huge buttresses and flat tops that have been sheared off by eons of storms. The trunks measure 3-4 feet in diameter above the buttress; the tallest trees stand 90 feet high.

Here, the river spreads into numerous braided channels through the primordial-looking swamp. Visiting canoeists and kayakers must zig-zag along, bumping into cypress knees up to 4 feet high. Stahle called Three Sisters Swamp “one of the greatest natural areas in Eastern North America.”

Tree ranks fifth on worldwide list

The study said the 2,624-year-old tree indicates that bald cypress comes in fifth on the worldwide list of tree species with the oldest individual, sexually reproducing, non-clonal trees. The oldest is a Great Basin bristlecone pine in Nevada dated at 4,900 years, based on a list compiled by Rocky Mountain Tree-Ring Research in Fort Collins, Colo.



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Stahle said that means only four other tree species on Earth are known to include individual trees capable of living longer than the cypress at Black River.

In South Carolina, Stahle said, the oldest-documented tree is a bald cypress in The Audubon Society's Francis Beidler Four Holes Swamp that he cored in 1992, now nearing 1,300 years. The research by Stahle and his colleagues has been supported by National Science Foundation grants.

The senescent Black River trees have survived deluges and droughts, hail and hurricanes. They also have escaped logging over the years, likely because many are partly hollow and wouldn't have made good lumber, Stahle said.

The two 2,000-year-old trees, the Methuselah tree and others aren't in danger of being logged as they're in Three Sisters Swamp. The Nature Conservancy in December acquired the swamp and adjoining uplands covering 319 acres. The conservation group has secured more than 16,000 acres through ownership and conservation easements along the stream. The Black, tributary of the Cape Fear River, lies about 40 miles northwest of Wilmington.

To protect and showcase the trees, the N.C. Parks and Recreation Division in 2017 proposed a state park along the Black. Opposition arose from some residents. The proposal was "dropped by the legislature due to lack of community support," parks spokesperson Katie Hall said in an email. "If the community changes their opinions and comes to be supportive about it, we could revisit the possibility."

The study concluded the Black potentially holds more 2,000-plus-year-old trees. "Because we have cored and dated only 110 bald cypresses at this site, a small fraction of the tens of thousands of trees still present in these wetlands, there could be several additional individual bald cypress over 2,000 years old along the approximately (66-mile) reach of the Black River."

Altogether, the study says, the old-growth cypresses along the Black "...remain threatened by logging, water pollution and sea-level rise," and that, "...thousands of additional hectares with high-quality ancient forests remain to be protected." One hectare equals 2.48 acres.

Without permanent protection, Stahle said, the primeval but privately owned trees "could become garden mulch."

Staffer Zach West of the N.C. Nature Conservancy examines an ancient, hollow bald cypress in Three Sisters Swamp on the Black River in southeastern North Carolina in this 2015 photo. Andrew Kornylak Want to see the ancient bald cypress?

Three Sisters Swamp lies between State Road 1550 bridge and the N.C. 53 bridge on the Black River in Bladen County. Only canoes and kayaks can maneuver through the swamp.

For a 9-mile float, begin at Henry's Landing, a private landing 1.5 miles downriver from the State Road 1550 bridge. Launch fee is \$5 per canoe or kayak.

It's five miles to the swamp and another four miles to a private landing at the N.C. 53 bridge; fee is \$3 per boat. Another 1.7 miles downriver is a no-fee Wildlife Resources Commission boat ramp. Paddlers not familiar with the swamp should go with an experienced group or an outfitter.

More details: <https://cypress.uark.edu>.



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