

## Searching for Methuselah

It is the third century. The Roman Empire is in a long period of civil war and chaos. China's Han dynasty ends and is followed by the Three Kingdoms era and the Jin dynasty. In Central America, Mayans hold ceremonies on temple pyramids as their civilization is about to enter its classic period. Native hunters wander across the land that would later bear the name North Carolina. Where the Black River winds through a coastal plain swamp, the seed of a bald cypress tree falls into muck and germinates. After surviving floods, droughts, storms, diseases, and logging for over 1,700 years, the tree now stands as the oldest known living tree in eastern North America. It is called Methuselah by locals and BLK69 by scientists.

Canoeing the streams of North Carolina has been my passion for 35 years and has offered an intimacy with nature as well as an opportunity to learn. I had traveled the Black River many times. Hearing about Methuselah posed questions—Is it still living? What does it look like? Does it have signs of its great age? Will I understand better why it has lived so long? What is its importance to science? Curiosity pushes me to search for answers, but something more vague pulls me.

The Black River is one of North Carolina's natural treasures because in its domain and in trees like Methuselah we can read messages about survival, history, science, and our changing climate. Great Coharie, Little Coharie, and Six Runs Creeks begin in northern Sampson County. They join to create the 68-mile-long Black River. It becomes the border between Bladen and Pender Counties, and its clear blackwater joins the brown, silty water of the Cape Fear River, which flows another 14 miles to Wilmington. The Black River has been spared both polluting industries and dams. Natural flooding patterns take their ageless course. The state strengthened its protection in 1994 by designating it as Outstanding Resource Waters, a classification reserved for streams with excellent water quality and outstanding resource value.

The middle of the Black River's course takes it past the small town of Ivanhoe, population 311. There are no larger towns on the banks. Finding the nearest motel requires a 45-minute drive. It is a land of few people, sandy soil, blackwater streams, forests, and wildlife. Black bear, beaver, bobcat, and fox inhabit the area.

Downstream of Ivanhoe, the Black River flows under Beatty's Bridge and continues 11 miles to the next bridge at NC 11/53. Between these two bridges, most of the left bank is part of Cone's Folly, a private

8,000-acre wildlife and timber preserve, owned by Ben Cone Jr. of the Cone Mills family, one of the pillars of North Carolina's textile history. Halfway down this stretch, the channel narrows and the river seems to start losing itself. At several places, water flows away from the main channel and to the right between trees of a swamp forest. Finally the main channel swings left and goes dry except when water is very high. The swamp forest is taking all of the water and bypassing a stretch of the main channel, which is slowly evolving into an oxbow lake. The swamp forest is known as Three Sisters because of three braided water channels flowing through it. The channels are visible on maps but can become a labyrinth for a paddler in canoe or kayak. The three-quarter-mile course requires dodging large cypress knees, weaving around big trees in narrow quarters, and guessing which narrow routes lead back to open water. The bald cypresses rise like towers guarding their swamp domain. Many of the trees have surrendered their tops to wounds inflicted by storms, lightning, and disease. Many of the huge buttressed trunks are hollow, and a rap with a canoe paddle causes the drum to reverberate across the quiet swamp. Some of the hollow bases are open and large enough for a person to enter.

The tea-colored water flows over a white sand bottom. In certain light, the water takes on a reddish tint. Three Sisters' channels merge and flow past Haw Bluff, a 30-foot bank, where they reunite with the old main channel. In channels old and new, in their marks on the land, and especially in the ancient cypresses the swamp is an archive increasingly valued by science.

Preservation of this area has been ensured by The Nature Conservancy, which owns several tracts along the Black River, including a 93-acre tract covering most of Three Sisters.

Trees in our temperate zone add a growth ring every year between the older wood and bark. A ring count tells the age of the tree, but even more valuable information is within the rings. Rainfall during the growing season affects ring width. Narrow rings indicate dry years, and wide rings indicate wet years, allowing climate data to be reconstructed for the life of the tree. Scientists practicing dendrochronology study growth rings in living and dead trees by boring into the tree with a hand tool to remove a core sample, which is a bit smaller than the diameter of a drinking straw.

In 1985–86, when North Carolina was suffering a two-year drought. Dr. Malcolm Cleaveland and Dr. David Stahle, professors of geosciences at the University of Arkansas, heard about the old-growth

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treasures of the Black River and came to study the tree rings. By canoe, they explored from Larkins Cove near the NC 11/53 bridge upriver to the Three Sisters area. They declared it the best stand of old-growth climate-sensitive bald cypress known. They cored more than 75 trees and attached small, numbered metal tags. On the last day of their work, a tree in Three Sisters attracted their attention. It was large, not unusually so, but it was solid.

With climbing gear, Dr. Stahle ascended the tree to about 20 feet above the swamp floor where the broad bell-shaped base of the trunk becomes more even. There he turned the steel straw of his corer into the wood. When he and Cleaveland examined the sample, they knew they had one of the oldest trees in the swamp. In their laboratory, BLK69's rings were dated to 364 A.D. They estimate the tree is older than 1,700 years because the core sample missed the exact center of the tree and was taken far above ground, missing the earliest growth rings. They also believe there are 2,000-year-old trees in the area, but most of the oldest are hollow from heart-rot, preventing accurate tree-ring dating.

The researchers' 1988 article in *Science*, "North Carolina Climate Changes Reconstructed from Tree Rings: A.D. 372 to 1985," examines the changing and recurring patterns of wetness and drought. The record reveals cycling between wet and dry periods about every 30 years. It also shows the chances of having a severe drought during a 10-year span is 26% during a wet period, but rises to 78% during a dry period. The last 30-year period recorded by the tree rings was wet and ended in 1984. In keeping with the cycle, 1985–2014 would be predicted to be dry. The researchers conclude with, "the potential impact of a regime drought on agriculture, energy demand, and water supply justify continued efforts to confirm and explain long-term changes in growing season climate over North Carolina." These words resonate strongly in North Carolina's exceptional drought of 2007.

Climate data from tree-ring research in North Carolina and Virginia also suggest a reason for the disappearance of the Lost Colony and high death rate at the Jamestown Colony. Both colonies endured multi-year droughts that were the worst in some 800 years.

While the trees themselves thrive in the swamp environment, their seeds rely on the hydrologic cycle recorded in their rings. A bald cypress is a conifer, belonging to the same family as the giant sequoia and California redwood, but it is not an evergreen. Its short needled turn coppery red in fall before dropping, but like the redwood and sequoia it has adapted to its special environment. A cypress seed has a difficult time growing in a swamp because it will not ger-

minate in water, dry soil, or even well drained soil. It must lay in saturated soil for several months to create a seedling, and then grow fast enough to keep its crown above any rising water. Being submerged for a few weeks kills the seedling. Many years can pass before a weather cycle of wet and dry periods synchronize with the growing season to allow a seed to flourish.

A bald cypress sends down a taproot, and lateral roots spread up to 50 feet before turning downward. Lateral roots also send up cone-shaped knees, which can exceed 10 feet high. The knee height usually reaches up to the average water depth. Many theories try to explain the purpose of knees—breathing or aerating the root system, supporting the structure, or storing nutrients. None of the theories is generally accepted, so the mystery remains. A cypress growing in water develops roots along the lower part of its trunk, producing a flared buttressed base. The extensive root systems and buttressed bases make cypress trees very stable even in wet, soft soil. When hurricanes sweep inland toppling pines, oaks and hickories, cypresses rarely fall. Axes and chainsaws are a different matter.

From the colonial period until the early twentieth century, the Black River was a commercial thoroughfare. F. Roy Johnson's book, *Riverboating in Lower Carolina*, chronicles its story. In the eighteenth century when settlers poured into the area, large canoes were made from hollowed cypress trunks and used to transport pitch and tar. Cypress logs were lashed into rafts and floated downstream. Flat boats were maneuvered with long poles. In the late nineteenth century, steamboats plied the waters from Wilmington to near the beginning of the Black River. Paddling these waters today around sandbars and downed trees, it is difficult to imagine how steamboats could have navigated here. Dredging and clearing by the US Army Corps of Engineers kept channels open for large boats. In the early twentieth century, steamboats faded away as commerce shifted to railroad and trucks, and the Black River drifted back into obscurity.

How did the ancient cypress trees avoid becoming lumber? Loggers must have seen that so many of the trees were hollow from heart rot or broken at the top by storms or lightning, and large trees with solid trunks were scattered among the many less suitable ones. The economics of removal caused them to pass up this virgin stand.

During my trips on the Black River, had I seen Methuselah? Maybe, but I had no way to recognize it. Before returning to the swamp, I search the literature. In *Rooted In Time* (American Forests, 1992), Wallace Kaufman tells the story of the Black River, ancient

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trees, and his search for Methuselah. He had some clues—four feet thick above its buttresses, a slight lean, two distinctive burls, and labeled with a small aluminum tag inscribed BLK69. He searched but did not find it. I take his clues but do no better. I find no metal tags, but big leaning trees with burls are everywhere.

I call Dr. Stahle and ask if he will help me locate Methuselah. I assure him I will not publicize its location because of the possibility someone might want to harm the tree. I also agree to provide the exact location for their database, since they did not have a GPS when doing their work. He sends field notes and a topographical map showing approximate locations of the sampled trees. With this additional information, I am sure I will locate Methuselah. In the swamp, my optimism vaporizes like mist in the sun. Trees abound, and I find no tags.

After many fruitless searches, I casually mention my quest to Don Gray, an outfitter and guide. He startles me with, “I know where that tree is. I looked for years, found many metal tags but not number 69. One day, miles downriver from Three Sisters, I looked up and saw the tag in plain sight right in front of me.” I follow his directions and find the tree just off the main channel. I take photographs, mark a waypoint, and send the information to Dr. Stahle.

This time it is Dr. Stahle who startles me saying the tree I located is definitely not the old one—it is only about 150 years old. They were running low on tags and had to use number 69 twice. The two trees sharing the same number are miles apart, and there is no doubt that the old tree is located in Three Sisters.

Now I suspect Methuselah is no longer tagged. Don told me he had looked for years and never seen any tags near Three Sisters. Some tags I had seen in other areas were hanging by only one of two nails. Tree growth has probably pushed the tags loose. It seems likely tags in Three Sisters have not endured, and only an old photo of Methuselah will give me a chance to recognize it in the swamp.

I call the researchers and plead my case. They are sympathetic and send a photo showing Dr. Stahle roped to the tree, taking a core sample. The base and lower trunk are visible, and most importantly, so are two distinctive burls.

On my next trip down the Black River, armed with the photo, my confidence in finding my prey is high again. The distance between boat access points is 10 miles and takes about five hours to paddle without stopping to search. Daylight is running out as I maneuver my canoe in tight leads, push my way through brush-blocked passages, and slog across muddy ground. It's too dry for good paddling and too wet to walk.

The exceptional drought during late summer 2007 improves the hunting grounds. Water levels drop to record lows and more of the swamp floor dries. I set out to search again. I beach my canoe and start walking, scanning the trees for possible matches. After I walk about a mile, a tracker would surely view my crisscrossing route as a person lost in the swamp. I stop at a tree I had passed before. It leans. Near the base is a familiar burl, and 10 feet above my head is another. I am staring at the elusive Methuselah. It is a big tree, but not the biggest around. It is exceptional only because it is such an old, solid tree. No other has been able to give proof of such longevity. I notice something at odds with Cleaveland and Stahle's notes. Instead of the very heavy limbs, this tree's limbs are scrawny. My guess is they were broken when Hurricane Fran's hundred miles per hour wind passed here in 1996. Methuselah is growing new limbs, but only time will tell how it will deal with the blow.

My search is finished. I load my canoe and paddle for the take-out. I am by nature a traveler of rivers and streams, and like any traveler, I am pleased to have found an uncharted destination. But I have also found a mystery, and mystery requires many journeys. Slipping through quiet blackwater, passing the most ancient bald cypress trees, observing with purpose, and becoming a better reader of the past—the best travel is always a search.

### To Visit

To visit the ancient trees of the Black River, travel by canoe or kayak. Paddle your own, rent one, or take a guided trip with an outfitter.

The trip distance varies from 8–13 miles depending on access points used.

Access to the river is possible at Beatty's Bridge Road, Henry's Landing off NC 210, Newby's at NC 11/53, and Hunt's Bluff Wildlife boating access off Longview Road. There is a fee to launch at Henry's Landing and Newby's.

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