

SAVAGE GULF, TENNESSEE: JUNE 2005

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Eastern Native Tree Society

Jess Riddle and I recently spent three days visiting the Savage Gulf State Natural Area in central Tennessee. It is a part of the South Cumberland State Park system. Savage Gulf is one of the many steep gorges cut by creeks through the sandstone shelf of the Cumberland plateau into siltstone, shale, limestone, and additional sandstone below. The top of the plateau gently undulates between 1800 and 1900-ft elevation, in stark contrast to the steep and rugged terrain of the gulfs. The creeks bottom out in the park very close to 1000 ft in elevation. In some places the walls of the gorge can drop from 1800 to 1000 ft in about 1/2 mile. This topography supports some extremely sheltered cove forests, which apparently can grow pretty tall.

The following is excerpted from Tennessee Natural Research Areas website:

<http://www.state.tn.us/environment/nh/natareas/savage/>

“Savage Gulf [is] a 15,590-acre natural area located in Grundy County. Carved like a giant crowfoot into the western edge of the Cumberland Plateau, it is one of Tennessee’s most scenic wilderness areas. Its sheer sandstone cliffs and rugged canyons provide extraordinary views.

“Big Creek, Collins River and Savage Creeks each tumble down over 5 miles, dropping over 800 ft through narrow gorges, forming the ‘Gulfs.’

“While much of the gorge is second growth forest, there is one large section [that] is old growth mixed mesophytic forest...The gorge forests abound with oaks, hickories, maples, yellow poplars, hemlocks, pines and many other tree species. Beneath the forest canopy is a vast array of shrubs, vines, wildflowers, mosses and ferns. Collins Gulf is noted for its spectacular display of spring wildflowers. In the uplands, an old growth shortleaf pine forest is found where red cockaded wood-pecker once nested. Savage Gulf is also on the Departments of

Interior’s Registry of National Natural Landmarks. The natural area is a part of the South Cumberland Recreation Area.”



Tom Simpson standing in a grove of impressive trees in Savage Gulf, Tennessee. Photo by Michael Davie.

On the first day, Tom Simpson, the Regional Urban Forester for East Tennessee, was kind enough to guide us into Savage Gulf. I’d been in contact with him for over a year trying to get access into the restricted area of the park, and finally it all worked out. He brought us into the “Still Hollow” area of Savage Creek, so named because of the remains of

an old still at the edge of the gulf. Savage Creek runs generally from east to west, and Still Hollow is one of many small, mostly dry and unnamed tributaries that descend to Savage Creek, this one on the south side of the gorge. Savage Creek was at this time of year also mostly dry, leaving a corridor strewn with massive boulders where the creek only reaches the surface occasionally.

The Still Hollow area is where Tom had gone in a few years earlier with some other state foresters to measure some trees from the state champion tree list. From the top, we picked our way down the mostly talus-covered slopes that form below the cliffs; these conditions made it hard to walk, but the trees seemed to like it fine. This north-facing part of the gulf supports a very diverse, healthy, and obviously uncut forest. The dominant canopy species in this area are tuliptree and hemlock, with northern red oak (var. *rubra*), cucumber magnolia, white basswood (apparently), also occurring frequently, and shagbark hickories.



Jess Riddle standing next to a 14-ft CBH cucumber magnolia at Savage Gulf, Tennessee. Photo by Michael Davie.

The hickories here are tremendous; in addition to the more common shagbarks, we found pignut, mockernut, and bitternut hickories down in the gorge. Other occasionally occurring overstory species include beech, yellow buckeye, sugar maple, and closer to the stream, ash (predominately green), sweetgum, and sycamore. Immediately below that, mixed overstory, yellow birch and yellowwood grew all over the slope. The understory was blessedly open and mostly rhododendron-free; just a few scattered here and there, mostly either by the creek or below the cliffs. A bit of mountain laurel, umbrella magnolia, striped maple, spicebush (*Lindera*), allspice (*Calycanthus*), witch hazel, loads of pawpaw and hydrangea, and even a bit of mountain maple. Sweet cicely (*Osmorhiza*), blue cohosh, wild ginger, and stinging nettle frequently sprouted up between and on top of the forest floor boulders.

The second day Jess and I hiked a trail across the section of plateau north of Savage Creek. Forests on the plateau were generally shorter and gnarlier than the gorges, of course. We did not measure much of note, but one Virginia pine was 6.9 ft CBH by 106.2 ft tall. An ancient oak forest survives on the mostly flat terrain. White oaks are most abundant, but black oak, chestnut oak, scarlet oak, mockernut hickory, and sand hickory are also common, along with pockets of shortleaf pine. While some areas support a mix of sourwood, American holly, and young white oaks underneath, other portions had a pure red maple understory. There was a lot of blueberry, sparkleberry and azalea in the shrub layer. Adjacent areas of younger forest were either dominated by a mix of shortleaf pine and scarlet oak or nearly pure Virginia pine. Virginia pine with a mountain laurel understory also occurred consistently along the north rim of the gorge.

After checking out the tantalizingly named "big tree spur trail," which did have some large and old trees, we headed for the rim and a path down, thinking possibly we could follow Jumping Water Branch down. We were stopped when the creek dropped over a cliff, surprise, surprise! Getting down is not easy anywhere there, but on the north side it seemed even harder, with pretty consistent cliffs most of the way down the gulf. One spot on the west side of the branch looked deceptively easy to go down, but when we got there and realized it was even more steep, Jess looked more closely at the map and noted how 100 ft of contour lines got sucked into one line. He suggested a ridge on the other side of the cove

that looked at least possible. Looking across and at the map I thought he might be insane but didn't say so, instead saying "I guess we can try." He was right, though it was about as steep as anywhere I've been and still involved weaving around a few small cliffs and holding tightly to some small trees.

The southwest-facing cove of Jumping Water Branch also had some tall trees, but the composition was different, seeming less moist but still rich. More ash, white oak, a mockernut hickory in the cove, and walnut joined the tuliptrees and hemlocks. We traveled down the east side of the cove and over a ridge heading upstream on the north and dryer side of Savage Creek, where we started seeing some chinkapin oaks. Jess had found one by poking across the creek the day before, and it wasn't an anomaly. We crossed back over to the south side and explored more of the territory there, until rain chased us under a cliff. Jess had spotted a huge northern red oak, and when the rain was gone we went back down and got at least one pretty good shot on it. Tree measuring in general was very difficult with high tree density and full crowns of leaves, as well as the topography limiting where one might measure from. When I got stung by a yellow jacket, I had to cut the day a little short; I was a little too worried about a reaction so far in the middle of nowhere, and thunder was still rolling nearby. Hence, we have only scratched the surface; a winter trip is a must.

The last day there we went down into Big Creek Gulf. Big Creek Gulf meanders from the west-southwest to the north-northwest. The forest we saw was mostly very different, due mostly to the gulf there being so much wider, and the more southerly aspect of the slope we traveled on. The fact that it had been logged had probably changed the composition a bit as well. White oak was one of the most dominant trees, but there were more sweetgum, chestnut oak, mockernut hickory, slippery and winged elms, patches of butternut, and tons more *Stewartia* in the understory. We took the trail to Ranger Creek Falls, where the slight flow of the creek drops into a small pool and disappears. It would be interesting and perhaps more fulfilling to explore the more sheltered areas of this gulf. Heights in the areas of Big Creek Gulf were not extremely tall, but regeneration and density was impressive.

Table 1. Savage Gulf, Tennessee.

Species	CBH (ft)	Height (ft)
Ash, Green	NA	116.3
Basswood, ?	NA	124.5
Buckeye, Yellow	14.1	127.5
Cherry, Black	NA	119.2
Hemlock, Eastern	NA	139.2
Hickory, Mockernut?	6.4	147.5
Hickory, Pignut	8.7	162.3
Hickory, Shagbark	9.1	140.1
Hickory, Shagbark	8.8	146.8
Hickory, Shagbark	9.0	150.3
Magnolia, Cucumber	14.0	~125
Magnolia, Cucumber	11.1	133.6
Oak, Chinquapin	5.6	117.2
Oak, Northern Red	NA	122.3
Oak, Northern Red	11.2	131.9
Oak, Northern Red	11.9	144.6
Oak, Northern Red	14.3	150.1
Oak, Scarlet	NA	122.5
Oak, White	NA	130+
Sweetgum	~7	~147
Sycamore	9.4	129.9
Tuliptree	7.7	150.8
Tuliptree	NA	158.7
Tuliptree	NA	160.0
Walnut, Black	10.0	127.3

Initial Rucker index: 145.0

The white oak is at least 130 ft and is probably a good bit taller. I got the 130-ft height shooting up from three different places while not getting too close to the top. There was absolutely no good place to measure that tree except possibly from atop the cliff above it. The sweetgum is, I think, 147.2-ft, but I had no paper to write on and was too far to yell numbers to Tom or Jess at the time. It's over 147, anyway. Like quite a few of these trees, might be a little taller also. I think we probably saw taller basswoods, but never got a good shot.

I think Jess and I would both agree Savage Gulf is one of a small group of the premier forest sites of the eastern US, and we still have much territory to cover. The uncut and more sheltered areas of Savage Creek most certainly harbor some other impressive (and possibly record-breaking) trees. Most all of the trees here were in a relatively small area of the gorge.