TAMASSEE KNOB, SOUTH CAROLINA: FEBRUARY 2005

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A couple of weeks ago I returned to the coves around Tamassee Knob in South Carolina's northwest corner to measure a chestnut oak I had previously spotted, thoroughly measure the largest cove in the area, and to avoid tall-tree withdrawal upon coming back from the Congaree. The chestnut oak grows at the bottom of a south-facing cove that supports the tallest white oaks so far found in the area—three over 130 ft. Unfortunately, Hurricane Francis knocked over the 126.8-ft black oak in this cove. In the large northeast-facing cove, the storm uprooted an 8.2-ft CBH by 139.2-ft tall sweetgum with a huge crown, and snapped the tallest ash I knew of in the cove, a 135.1-ft individual. The ash appeared to have still been growing radially at a rate of three to five millimeters per year.

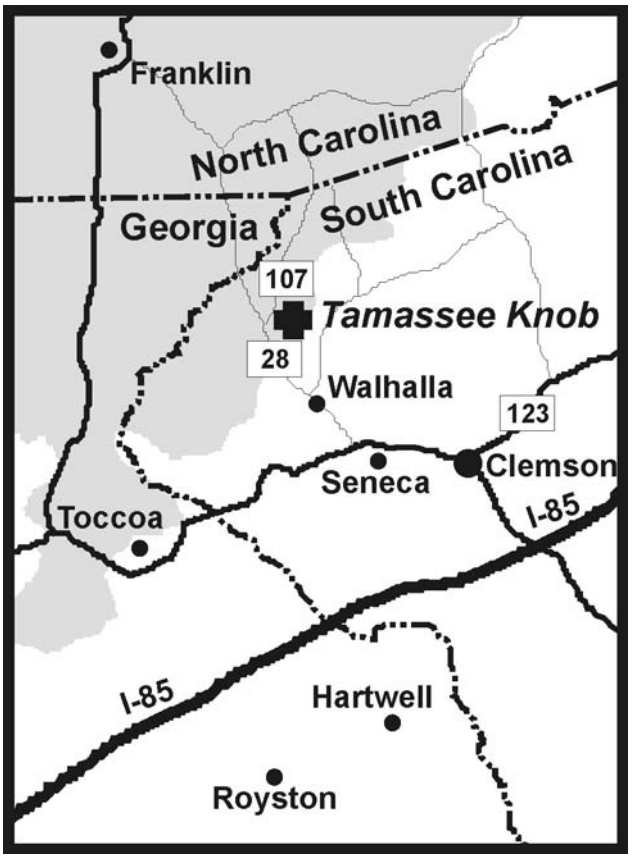
Table 1. South-facing cove at Tamassee Knob, South Carolina.

CBH (ft)	Height (ft)	Species
3.8	93.4	Hickory, Pale
6.1	133.7	Oak, Chestnut
3.8	134.4	Tuliptree

I had not noticed pale hickory before in the area, but they grow scattered along the relatively dry main ridge and spur ridges (Table 1). Surprisingly, the chestnut oak grows right on the drainage surrounded by tuliptrees, including the skinny one (110:1 height-to-diameter ratio) listed above.

Several features commonly associated with fertile habitats converge in the largest cove at Tamassee Knob. The northeast aspect of the cove and the small stream cascading from the adjacent plateau combine to minimize water stress, and the elevation below 1500 ft helps to extend the growing season and avoid ice storms. The steep upper slopes on both sides provide shelter from windstorms, while the benches on the south side and gentle lower slopes provide more stable footing. Additionally, the rich bedrock typical of the steep slopes throughout the area underlies much of the cove, and helps to produce circumneutral soils.

In another month sweet Betsy trilliums will cover the approximately 50 ac of the cove, and the redbuds in the sunnier spots will accentuate them.



General region surrounding the Tamassee Knob.

The redbuds share the understory with wild hydrangea, spicebush, and pawpaw. In parts of the cove, silverbell and yellow buckeye attempt to form a midstory, but neither species reaches the stature they achieve higher in the southern Appalachians. However, tuliptree grows well at the site and forms the largest proportion of the canopy. Ash, probably green, and pignut hickory also constitute large portions of the overstory.

On the drier southeast-facing slope and some of the other upper slopes, white, chestnut, and black oak play a larger role. Basswood and sweetgum are also locally important in the canopy. Some of the overstory trees likely approach 125 years old, and the richness, sheltered nature, and accessibility of the area seem to support the idea that this site was cleared early in the logging of the area. Widely scattered, partially decomposed stumps indicate some more recent thinning of the stand.

Table 2. Large northeast aspect cove at Tamassee Knob, South Carolina.

CBH (ft)	Height (ft)	Species
9.7	115.8	Ash, Green?
7.5	131.0	Ash, Green?
9.2	139.6	Ash, Green?
7.5	122.2	Basswood, White?
7.3	127.2	Basswood, White?
8.2	127.7	Basswood, White?
1.4	NA	Grape
6	142.4	Hickory, Pignut
9.6	149.0	Hickory, Pignut
7.3	159.1	Hickory, Pignut
8.4	~125	Locust, Black
NA	143.9	Locust, Black
8.2	121.4	Oak, Black
NA	~126	Oak, Chestnut
9.2	136.6	Oak, Northern Red
7.9	145.3	Oak, Northern Red
5.1	136.1	Sweetgum
5.6	150.0	Sweetgum
10.8	155.7	Tuliptree
8.1	157.2	Tuliptree
13.0	160.1	Tuliptree
9.2	161.4	Tuliptree
9.3	172.5	Tuliptree
4.7	100.0	Walnut, White

Green ash commonly reach 115 to 125 ft in the cove, but the 139.6 ft is a new height champ for the Brevard Belt (Table 2). The basswood include the second- and third-tallest known in the state. Large lianas, both grape and Virginia creeper, grow in several of the Tamassee coves.

The 9.6-ft CBH by 149-ft tall hickory appears relatively young, and has a massive crown with an 86-ft long spread. Under the new rating system the tree scores 162 (115.5/157, 149/168.2), behind a handful of other pignuts, but has the potential to become massive. The 159.1-ft pignut is the third-tallest known, and is considerably slimmer and younger than the taller trees. The tall black locusts were a nice find since I had been concerned that the other > 140 ft tree in the coves was an anomaly. Several northern red oaks throughout the cove top 130 ft. The 145.3-ft is a new best for Tamassee and the third-tallest known in the state.

The sweetgum is another new record for Tamassee and the tallest known outside of the Congaree. This tree differs in structure dramatically from the Congaree giants. The tall Tamassee tree is far slimmer with a much smaller, more compact crown.

The 13.0-ft CBH by 160-ft tall tuliptree is the second largest tree I've seen in the coves so far. The 161.4-ft tulip tree stands between the tallest tuliptree and the tallest pignut hickory. I had the tree at 164 ft a few years ago, and based on the tree's appearance relative to the adjacent trees, that height seems reasonable. The tallest tuliptree is now the tallest known tree in the state, and the tallest known hardwood in the East outside of the Smokies. The height listed is the average of three measurements ranging from 171.9 ft to 172.9 ft.

The white walnut (or butternut) is also encouraging since I had seen only one other one at the site, but this one is the second-tallest measured so far in the state.

Rucker Index (RI) for the northeast aspect cove = 142.7 ft

172.5 ft Tuliptree
159.1 ft Pignut Hickory
150.0 ft Sweetgum
145.3 ft Northern Red Oak
143.9 ft Black Locust
139.6 ft Green Ash
133.4 ft Shortleaf Pine
129.2 ft Black Oak
127.7 ft White Basswood
~126 ft Chestnut Oak

Tamassee Knob RI = 146.1 ft

Central Brevard Fault Zone RI = 150.6 ft

South Carolina RI = 162.0 ft