

## BALDCYPRESS (*TAXODIUM DISTICHUM*) IN OKLAHOMA

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Baldcypress (*Taxodium distichum* (L.) Rich.) is native in Oklahoma only within McCurtain County near the southeastern corner. The state's largest tree is of this species. Baldcypress grows well at Long Lake near Poteau in LeFlore County and at other locations in eastern Oklahoma where it has been planted. It should be suitable for commercial plantations and hardy as an ornamental. A natural area should be established to preserve a small area of baldcypress swamp forest.

This article is based on a study made during the summer of 1930 by the late Charles E. Olmsted and me for the State Forestry Division (1, 2), some further observations made until 1950 (3), and a follow-up study in October 1977.

### Range In Oklahoma

In Oklahoma, baldcypress is native only along Little River and tributaries, chiefly in the Coastal Plain. It is the dominant species of the baldcypress swamp forest, or *Taxodium* association, at edges of rivers and oxbow lakes in flood plains. From the Arkansas border, baldcypress occurs westward along Little River and tributaries beyond Wright City nearly to Ringold, about 20 miles northwest of Broken Bow. Trees can be seen along State Highway 3, as at Cypress Creek in sec. 5, T. 5 S., R 22 E. Scattered trees are found a short distance north into the Ouachita Mountains. Baldcypress is protected along Mountain Fork River at Beavers Bend State Park. The northernmost locality in Oklahoma is on upper Buffalo Creek, south of Plunketville. The species is absent along Red River at the southeastern corner of the State.

The entire natural range of baldcypress has been mapped (4, map 84-E). In Arkansas it occurs through the southeastern half and up the Arkansas River as far west as Pope County, roughly 65 miles from the Oklahoma line at Fort Smith (5).

### The Big Baldcypress

Mature baldcypress trees reach 80-100 feet in height and 3-5 feet in diameter. The largest tree in Oklahoma is near the border of natural distribution of the species. The Big Baldcypress is located west of Mountain Fork River about 7 miles east of Broken Bow, in sec. 7, T. 6 S., R. 26 E. on property owned by Lewis Stiles. An admission charge is made to view the tree and a small Indian museum in the home of a Choctaw Indian governor built in 1884. Fortunately, this tree is protected and accessible. A lightning rod was installed long ago.

In 1930 the size was stated as about 110 feet in height and 9 to 11 feet in trunk diameter (Fig. 1, 3). Dimensions in 1964 were given as 114 feet in height, 95 feet in crown spread, and 31 feet ½ inch in circumference at breast height (almost 10 feet in diameter). In 1977, Tommy Smith, of the Oklahoma Forestry Division, recorded these measurements: 118 feet, 98 feet 6 inches, and 32 feet 4¼ inches in trunk circumference (approximately 10 feet 4 inches in diameter) (Fig. 2). However, the trunk above the enlarged base tapers so that at a height of 7 feet, the diameter is less than 7 feet.

Growth of the tree has been slow during this 47 year period (Fig. 1 and 2). A very large opening in the upper part indicates that the trunk is hollow (Fig. 3). Two large cavities near the top of the trunk have become one.

The posted estimate of the age, 2,000 years, probably is high. Perhaps 1,000 years would be a good guess, based on counts of annual rings on stumps.

Very few other trees in Oklahoma approach these dimensions. The second largest tree is the state champion cottonwood, *Populus deltoides*. Bartr. ex Marsh., near Woodward with a trunk diameter of about 9 feet. In third place is the biggest sycamore, *Platanus occidentalis* L., near Sperry, approximately 7 feet 5 inches in diameter.

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FIGURES 1 and 2. Identical views of the author at base of the Big Baldcypress tree on Aug. 3, 1930, and Oct. 28, 1977. Growth in diameter has been slight. The same buttresses are recognizable.



FIGURE 3. Similar view of the entire trunk, looking northwest, on Aug. 3, 1930. After 47 years the two large cavities near top of trunk have become one.



FIGURE 4. Zonation of vegetation at border of Grassy Lake, an oxbow lake southeast of Broken Bow (Aug. 3, 1930). Four types: yellow pondlily, with floating leaves; southern wildrice, a large aquatic grass; buttonbush-alder-dogwood shrub; and baldcypress swamp forest.

A few slightly larger baldcypresses are known from southeastern United States. The American Forestry Association's National Register of Big Trees (6) listed two with these measurements: west of Sharon, Tenn., circumference at breast height 39.7 feet, height 122 feet, spread 47 feet, and at Bertie County, N.C., 38.3 feet, 138 feet, and 36 feet, respectively. Another tree in 1930 was 13.5 feet in diameter at 18 inches above ground and 9 feet above the enlarged base (7).

### **Baldcypress Introduced At Long Lake**

At Long Lake near Poteau in northern LeFlore County, baldcypress grows as if native. These planted trees should be mentioned to avoid possible later repetition of the erroneous range extensions reported elsewhere.

A local ranger first observed about 100 baldcypress plants, mostly small, in 1973. The exact locality is at the concrete bridge over Long Lake on U.S. Highway 59, about 4 miles south of Poteau and 8 miles north of Heavener. This narrow lake is a former channel or old slough of the nearby meandering Poteau River. Two large baldcypress trees at the water's edge west of the bridge are about 50 feet high and 24 inches in trunk diameter above buttresses. The forest bordering Long Lake has been cut, but some trees of the flood plain forest remain.

The property owner, James Kidd, of Poteau, reported that his grandfather, James Etter, planted the largest trees in 1928, when moving to the area from near DeQueen, Ark. In 1952, about 150 to 200 additional small plants were set out. No seedlings have been observed.

Baldcypress has been introduced at several other locations in eastern Oklahoma, such as along the lake at Greenleaf State Park in Muskogee County, and near Ada. Lake borders should be suitable for commercial plantations of this useful timber.

### **Baldcypress As An Ornamental**

As elsewhere north of its native range, baldcypress is a hardy ornamental or shade tree in eastern Oklahoma. This handsome tree with feathery pale green foliage grows well not only at borders of ponds and streams but also on upland sites. On the campus of Oklahoma State University at Stillwater, some trees have been planted near buildings, while others bordering a pond develop characteristic "knees" from submerged roots. Trees have been introduced by the U.S. Department of Agriculture Field Station at Woodward, in the northwestern part of the state.

This species should survive cold winters, as it is classed in plant hardiness zone 5 (average minimum temperature  $-20^{\circ}$  to  $-10^{\circ}$  F.). Because of the large size, ample space is desirable.

According to fossil evidence, baldcypress grew farther north in prehistoric times. Excavations in Washington, D. C., sometimes uncover buried stumps in peaty deposits of Pleistocene age older than 38,000 years, the maximum effective date of carbon-14 analysis (8).

### **A Baldcypress Natural Area**

A natural area should be established to preserve a small example of baldcypress swamp forest. Perhaps a suitable location could be found at an oxbow lake along Little River southeast of Broken Bow.

One example of an oxbow lake studied in 1930 was Grassy Lake, southeast of Broken Bow (Fig. 4). Zonation at the border in 1930 consisted of four vegetation types or associations: yellow pondlily, *Nuphar luteum* (L.) Sibthorp & Sm., with floating leaves; southern wildrice, *Zizaniopsis miliacea* (Michx.) Doell & Aschers., a large aquatic grass; buttonbush-alder-dogwood shrub, *Cephalanthus occidentalis* L., *Alnus serrulata* (Ait.) Willd., *Cornus amomum* Mill.; and baldcypress swamp forest.

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