



***Pinus pungens* table mountain pine**

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Pinus pungens is a pine of deep, high woods of the Appalachian mountain ridges and rocky outcrops. *Pinus pungens* is not rare, but is rarely noticed. It is usually first appreciated by its unique cones which have large, sharp, hooked prickles. It was first identified to species in 1805. The scientific name is derived from “a pine with sharp pointed cones.” *Pinus pungens* accepted common name is table mountain pine, but other common names include hickory pine, prickly pine, and mountain pine. *Pinus pungens* is named for generic Appalachian mountain forms, not a specific mountain, and so the common name should not be capitalized as a proper noun.

Pinus pungens grows in a narrow band along mountains ridges of the Eastern United States. It ranges from the Southern tip of New York to the far Northeastern corner of Georgia. See the Georgia distribution map figure. In New Jersey it is considered a state endangered species. *Pinus pungens* grows on infertile poor sites. Sites are usually exposed, rocky, acidic, excessively drained, highly sloped, and dry. The tree is found at upper elevations along ridges and on steep slopes with thin, poor soils.

Pinus pungens is a small to medium sized tree growing to maturity between 20 - 55 feet in height with a maximum height near 95 feet. *Pinus pungens* are usually found with mature diameters between 1 - 2 feet with a maximum of 2.5 feet. Across *Pinus pungens* native range, it shows variation in growth. The farther South it grows, the shorter and smaller the tree becomes, and the smaller and more closed the cones become. The higher in elevation it grows, the smaller and more open the mature female cones.

Pinus pungens grows slowly and is considered to have a long lifespan, in some cases exceeding 150 years. It is a densely branched tree with poor stem form and a battered crown appearance. The round or flat-topped crown shape develops early in its life. It is reasonably windfirm given the poor sites upon which it grows.

It grows in Hardiness Zone 5a - 6b and Heat Zone 4-6. The lowest number of Hardiness Zone tends to delineate the Northern range limit and the largest Heat Zone number tends to define the Southern edge of the range. This native Georgia pine grows in Coder Tree Grow Zone (CTGZ) A (a multiple climatic attribute based map), and in the temperature and precipitation cluster based Coder Tree Planting Zone 2. Figure 2.

Pinus pungens does not react well to competition and requires large site disturbances to successfully regenerate. If damaged as a seedling it can sprout from the base, but this attributes quickly disappears with age. It does not have new sprouts along its stem.

Pinus pungens needles are held on a tree for 2-3 years. Needles are 1.3 - 2.6 inches long with needles in bundles of 2. Needle bundles of 3 can rarely occur, but this may show some hybridization

with *Pinus echinata* shortleaf pine or *Pinus rigida* pitch pine. Needles are rigid and stiff, twisted, sharp tipped, crowded near twig ends, and dark green with a hint of blue in color.

Pinus pungens reaches sexual maturity quickly, usually by 5 years of age. Mature female cones are broadly egg-shaped with a lopsided, asymmetrical base. Mature cones are 2 - 3.5 inches long and heavy with woody material and resin. Cones are usually clustered together in groups of 3 or more, and persist on branches for many years (maximum is 22 years). Cones tend to point down or backward along twigs. Some cones open immediately while others open over the next 10 years with the heat of summer or of fire. *Pinus pungens* cones are a shiny light reddish-brown in color, aging to grey. Cone scales are thick and heavy, with a deep red colored band on the upper edge. Scales are tipped with a large, thick, curved, pointed prickle. Seeds require mineral soil and strong light to germinate and grow. Good seed numbers are distributed every year.

Pinus pungens twigs are thick but flexible, tough and break resistant. Twigs are orange to yellow-brown in color, aging to dark brown. Twigs are smooth the first two years becoming very rough and resinous. Stem periderm is thin, dark reddish brown in color, and flaky to scaly on young trees, and furrowed with scaly plates on older trees.

Pinus pungens branches do not self prune well, hanging onto a tree long after death. The tree also carries many live branches far down its stem. Branches are tough and strong, which gave rise to a common name of hickory pine. Branches tend to be wide-spreading and droop near the end. Crown form is dense with many horizontal branches, both living and dead. Long low branches help control interference in the root colonization space beneath a tree.

Pinus pungens can be confused with three pines which grow in the same area. *Pinus pungens* can be confused with Virginia pine *Pinus virginiana*. Virginia pine has much more flexible, not stiff needles, and a smaller, lighter cone with small prickles. *Pinus pungens* can be confused with shortleaf pine *Pinus echinata*. Shortleaf pine needles are not twisted and grow in bundles of 2 and 3. *Pinus pungens* can be confused with pitch pine *Pinus rigida*. Pitch pine has needles growing bundles of 3. Pitch pine needles are longer, stiff and twisted, with a cone with much smaller prickles.

Pinus pungens does form two known hybrids with neighboring pines. One hybrid is with shortleaf pine *Pinus echinata* which has long stiff twisted needles with 2-3 needles per bundle. The second hybrid is with pitch pine *Pinus rigida* which is densely branched off the main stem with intermediate cone and needle characteristics.

Pinus pungens has been locally used for small pine wood projects, carving, charcoal making, fuelwood, and wooden canoe making. It has a poorly formed stem for lumber and is filled with knots. It is harvested for pulp and mixed with other Southern pines.

Citation:

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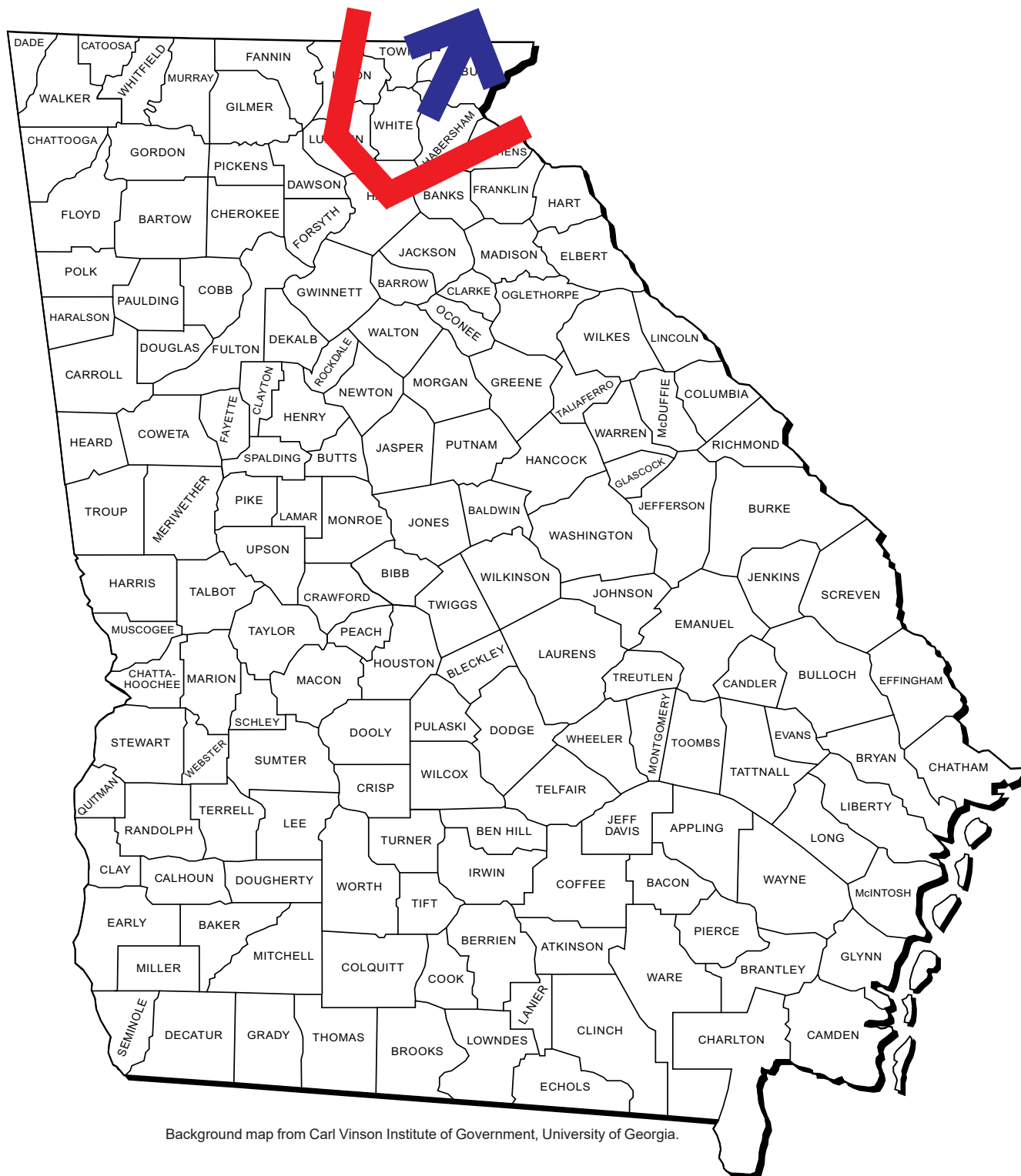
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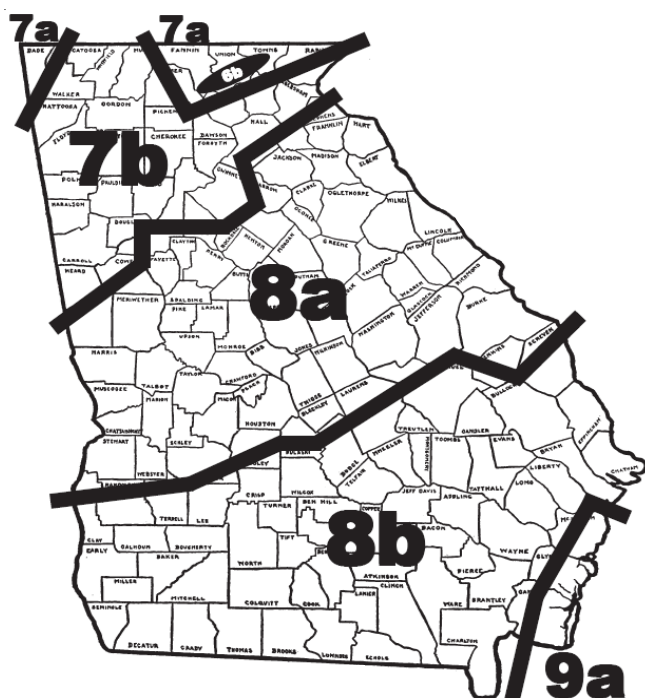
Figure 1: Native range for *Pinus pungens* --
table mountain pine in Georgia.

Native range from federal and state maps, herbarium samples and personal observations.

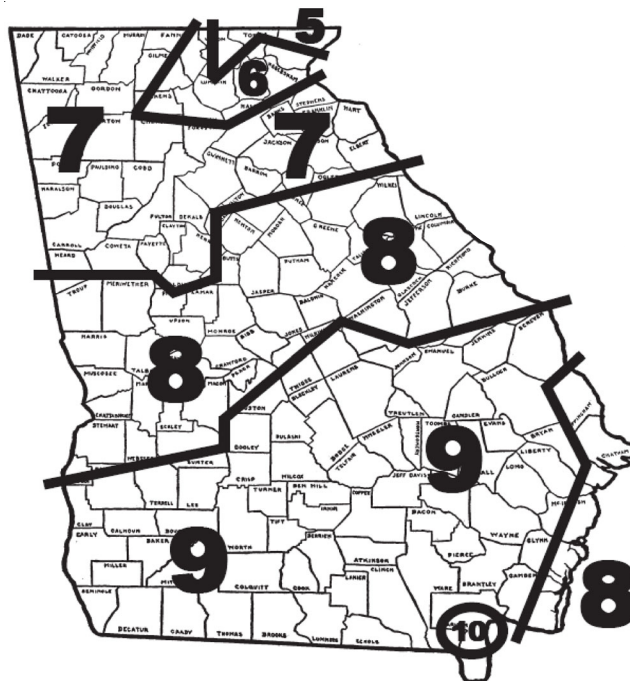
Native range includes all areas North and East of line.



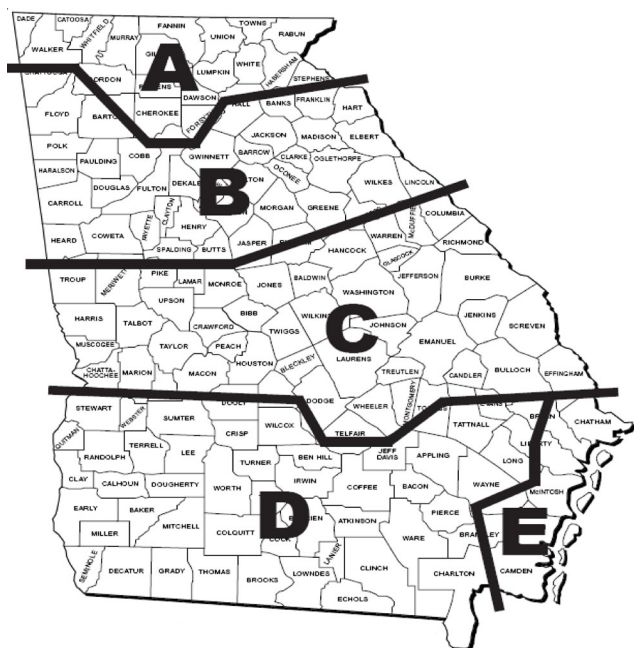
Background map from Carl Vinson Institute of Government, University of Georgia.



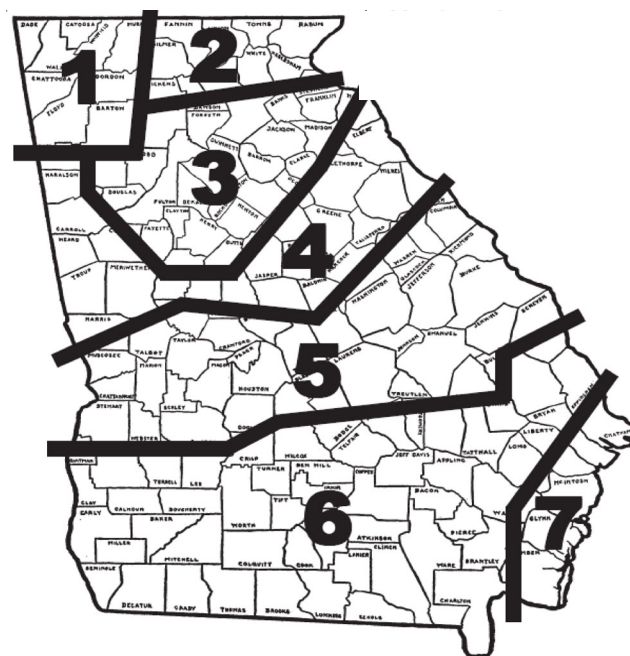
Georgia Hardiness Zones
(cold temperatures)



Georgia Heat Zones
(number of hot days)



Coder Tree Grow Zones
(multiple climatic attributes)



Coder Tree Planting Zones
(temperature & precipitation clusters)

Figure 2: Four types of tree growth zone maps for Georgia.