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Pinus serotina pond pine

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Pinus serotina (pond pine) is a tree of the Southeastern Coastal Plain of United States. It was first described as a species in 1803. Historically this tree has been taxonomically associated with pitch pine *Pinus rigida*. Other scientific names for this tree have been *Pinus rigida* var. *serotina* (1868) and *Pinus rigida* subs. *serotina* (1939). The scientific name means a "pine with late opening cones." Other common names include swamp pine, marsh pine, bay pine, flatwoods pine, and pocosin pine.

Pinus serotina grows along the Coastal Plain from Southern New Jersey into central Florida and central Alabama. In Georgia, pond pine grows below the fall line. See Georgia range map figure. *Pinus serotina* grows in bogs, moving water swamps, flatwoods, savannahs, and low scrub areas including poorly drained wetland sites with widely fluctuating water tables. Unlike many other pines, pond pine tolerates and reproduces in areas with high organic matter contents. Site drainage shifts species regeneration toward loblolly pine. Pond pine is fire tolerant and sprouts after fire damage, but is disfigured by hot fires.

Pinus serotina is a medium sized tree 40-65 feet tall (maximum of 90 feet). It grows to a diameter of 1-2.2 feet (maximum of 3 feet). Crown form is irregular, ragged, and thin, with many tufts of needles sprouting on stems. Crown shape is usually flat-topped with many stubby and gnarled branches among longer branches. Cones held for many years lead to the appearance of a cone-crowded crown. *Pinus serotina* has a moderate growth rate and is relatively short-lived (90 years).

It grows in Hardiness Zone 7a - 9a and Heat Zone 8-10. 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) C-E (a multiple climatic attribute based map), and in the temperature and precipitation cluster based Coder Tree Planting Zone 5-7. Figure 2.

Pinus serotina needles grow in bundles or 3, with rare 4 and 5 needle bundles present. Needles are held on the tree 2-4 years. Needles are 5.4-8 inches long and are gently twisted, moderately flexible, slender, concentrated near twig tips, and dark yellow green in color.

Pinus serotina becomes sexually mature around 10 years of age. Mature female cones remain attached to branches for many years. Cones reach maturity and remain closed for up to 7 years. Sometimes old mature cones become overgrown by branch tissues. Cones are symmetrical, broadly egg-shaped when open, and 1.8-2.7 inches long. Cones are a shiny pale reddish brown to creamy brown in color with many yellow tints. Cone scales have a dark red border along the end and a short weak prickle (sometimes no prickle).

Pinus serotina twigs are scaly, moderately stiff but slender, and greenish-yellow to orange-brown in color aging to light to medium brown. Buds are usually very resinous. Branches are fairly wide spreading, but tend toward being twisted and misshapen. Mature periderm on *Pinus serotina* is dark greyish-brown to reddish-brown in color with flat, rectangular, small, thin scaly plates. Stem periderm is shallowly furrowed.

Pinus serotina identification is difficult when loblolly pine *Pinus taeda* is in the area. When pond pine has a good stem form it can resemble loblolly pine, but pond pine has resinous buds, 3-4 needles per bundle, a rounded cone, and stem foliage sprouts. *Pinus serotina* is closely related to pitch pine (*Pinus rigida*) and where they grow together they hybridize, generating trees with intermediate characteristics. In Georgia these two species do not overlap. *Pinus serotina* hybridizes with shortleaf pine *Pinus echinata*, pitch pine *Pinus rigida*, loblolly pine *Pinus taeda*, and longleaf pine *Pinus palustris*. The most confusing of the tree characters come from combination hybrids with *Pinus rigida* and *Pinus taeda*.

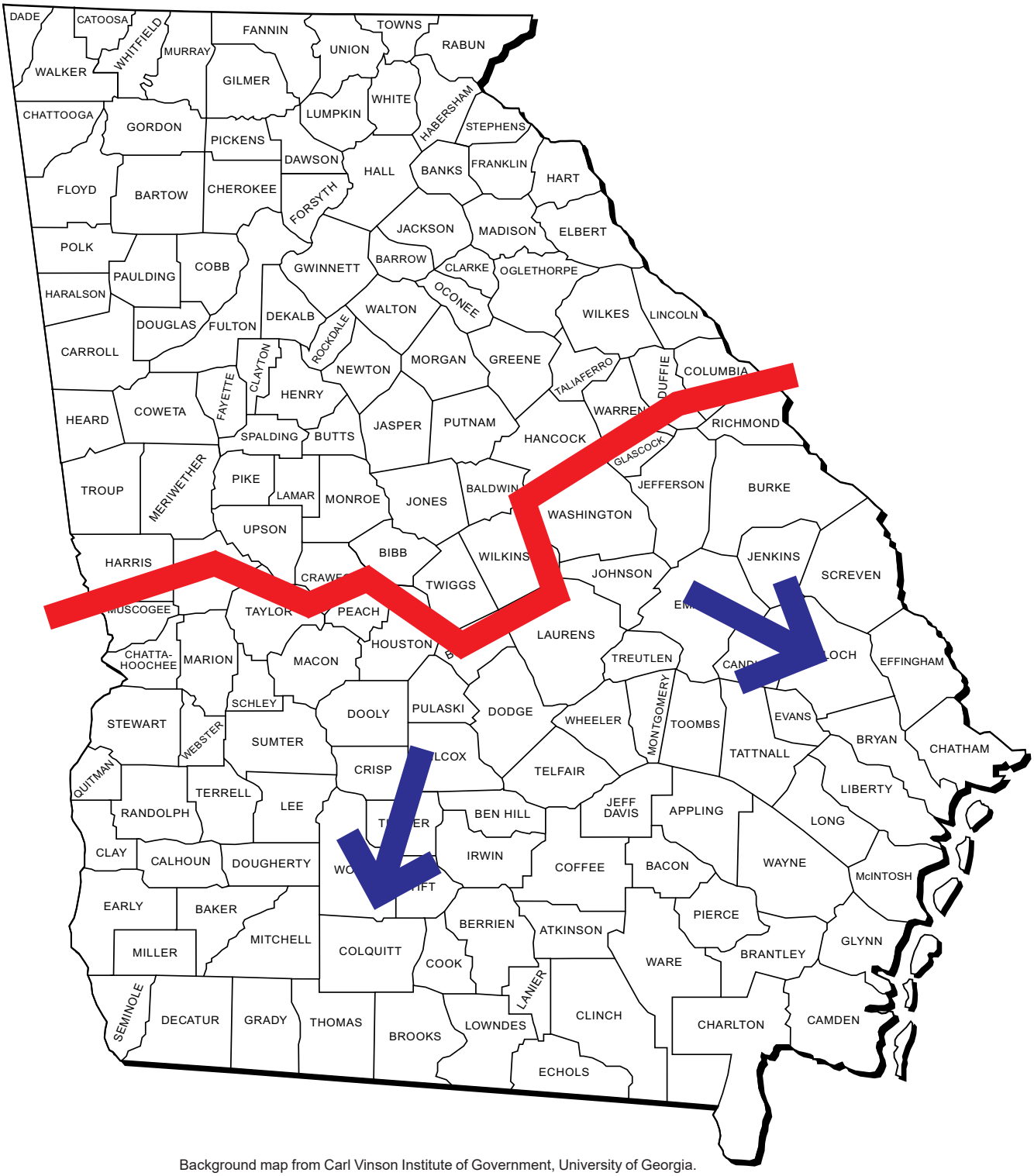
Historic and current uses of *Pinus serotina* are similar to pitch pine. *Pinus serotina* does have a different chemical mixture of materials in its resin than other pines. Wood is resinous and locally could be used for resin products (naval stores). The tree is used for poorer grade lumber and pulp. The tree is valuable as overstory trees, general forest habitat, and a food source in wetland areas.

Citation:

Coder, Kim D. 2021. *Pinus serotina* pond pine. University of Georgia, Warnell School of Forestry & Natural Resources Outreach Factsheet WSFNR21-28C. Pp.4.

Figure 1: Native range for Pinus serotina -- pond pine in Georgia.

Native range from federal and state maps, herbarium samples and personal observations.
Native range includes all areas South and East of line on the side with arrows.



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

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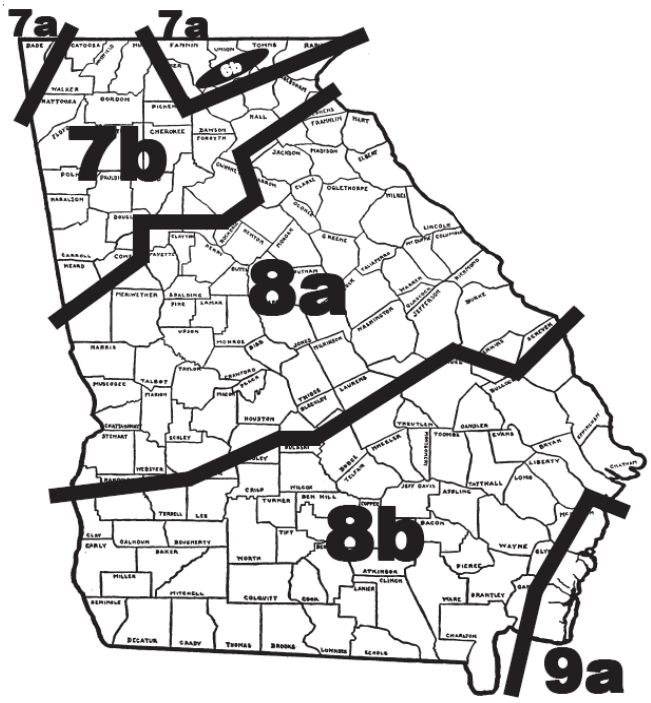
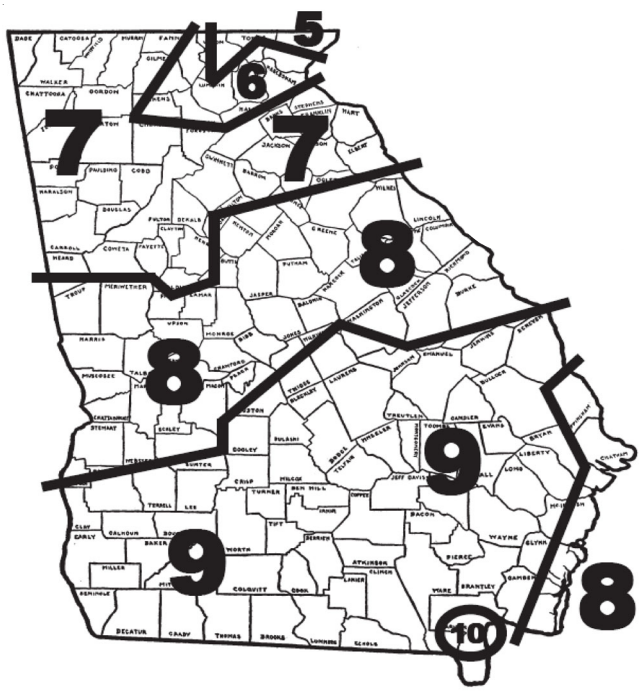
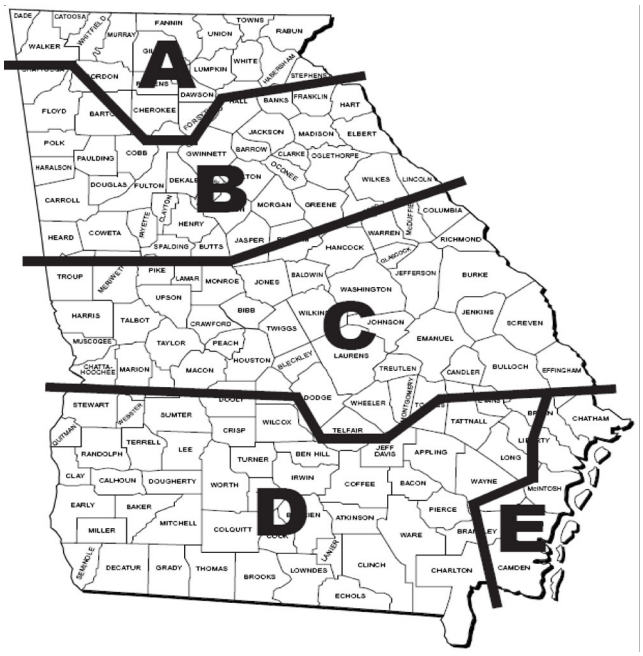


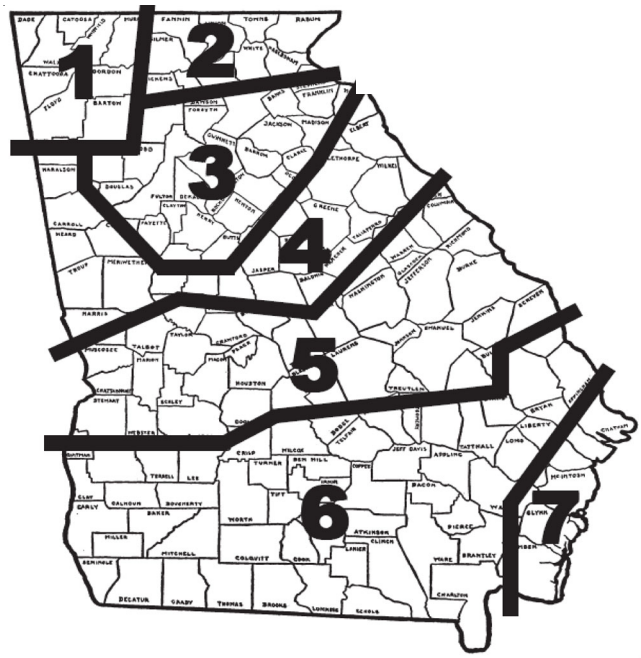
Georgia Hardiness Zones
(cold temperatures)



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.