



Outreach

Warnell School of Forestry & Natural Resources

UNIVERSITY OF GEORGIA

# **Pinus taeda** **loblolly pine**

by Dr. Kim D. Coder, Professor of Tree Biology & Health Care  
Warnell School of Forestry & Natural Resources, University of Georgia

*Pinus taeda* (loblolly pine) is the foundation of the lumber and pulp industry in the Southeast, and is found widely planted. *Pinus taeda* was first described as a species in 1753. The scientific name means “pine used for torches.” Common names include bull pine, oldfield pine, shortleaf pine, Arkansas pine, North Carolina pine, Georgia pine, resin pine, mudhole pine, rosemary pine, frankincense pine, and lob pine. The accepted common name is loblolly pine, which means a “pine of thick mires and mudholes.”

*Pinus taeda* native range is from South New Jersey along the Atlantic coast and Piedmont around through central Florida to East Texas and North to Southern Kentucky. In Georgia, it is found statewide except for the far Northeast corner of the State. See the Georgia range map figure.

It grows in Hardiness Zone 6b - 9b and Heat Zone 7-10. 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) A-E (a multiple climatic attribute based map), and in the temperature and precipitation cluster based Coder Tree Planting Zone 1-7. Figure 2.

*Pinus taeda* grows in a wide range of habitats, forest types and soils. Generally, loblolly grows on floodplains, uplands, granite outcrops, wet bottomlands, drier slopes, and on many soil types, tending to grow best on deep moist soils. The stem base tends to form buttresses on wet soils. *Pinus taeda* quickly invades abandoned agricultural land forming either pure or mixed pine-hardwood stands.

*Pinus taeda* is moderately tolerant of interference, but grows best where hardwoods are limited. Loblolly pine has rapid growth, especially when young, and a moderate lifespan (120 years with maximum of 275 years). It is usually found below elevations of 2,000 feet. *Pinus taeda* grows to a height of

85 - 105 feet, with a maximum of 160 feet. Diameter growth is usually between 2-3 feet, with a maximum of 5.5 feet. Crown form is broad and rounded with dense foliage.

*Pinus taeda* needles grow in bundles of 3 and are 5.4 - 9 inches long. Needles are dark yellow green to dark greyish green in color. Needles remain on a tree about 3 years. Needles are relatively thick, straight, slender but stiff, and can be occasionally slightly twisted.

*Pinus taeda* becomes sexually mature around age 12. Female cones are 2.6 - 6 inches long with an elongated egg-shape, being longer than broad. Cones are open at maturity and fall by the year after opening. Female cones are a dull pale reddish-brown color with relatively thin, keeled scales which have a thick sharp prickle at the end. Cone scale tips appear wrinkled. *Pinus taeda* generates a good seed crop every 5 years with some seeds produced every year.

*Pinus taeda* twigs are intermediate in thickness and stiffness compared to other Southeastern pines. Twigs are greenish-brown in color when young, aging to a yellow-brown to a reddish-brown color. Twigs are rough and flaky with young shoots covered with reddish brown colored periderm scales. Stem periderm is thin and dark grey to blackish when young, growing progressively thicker and lighter in color to bright red-brown. Periderm is scaly-plated early in life becoming deep furrowed with flat scaly plates and ridges with age. The cross-section of periderm has layers of slate grey and brown. There are no resin pockets visible on the periderm surface.

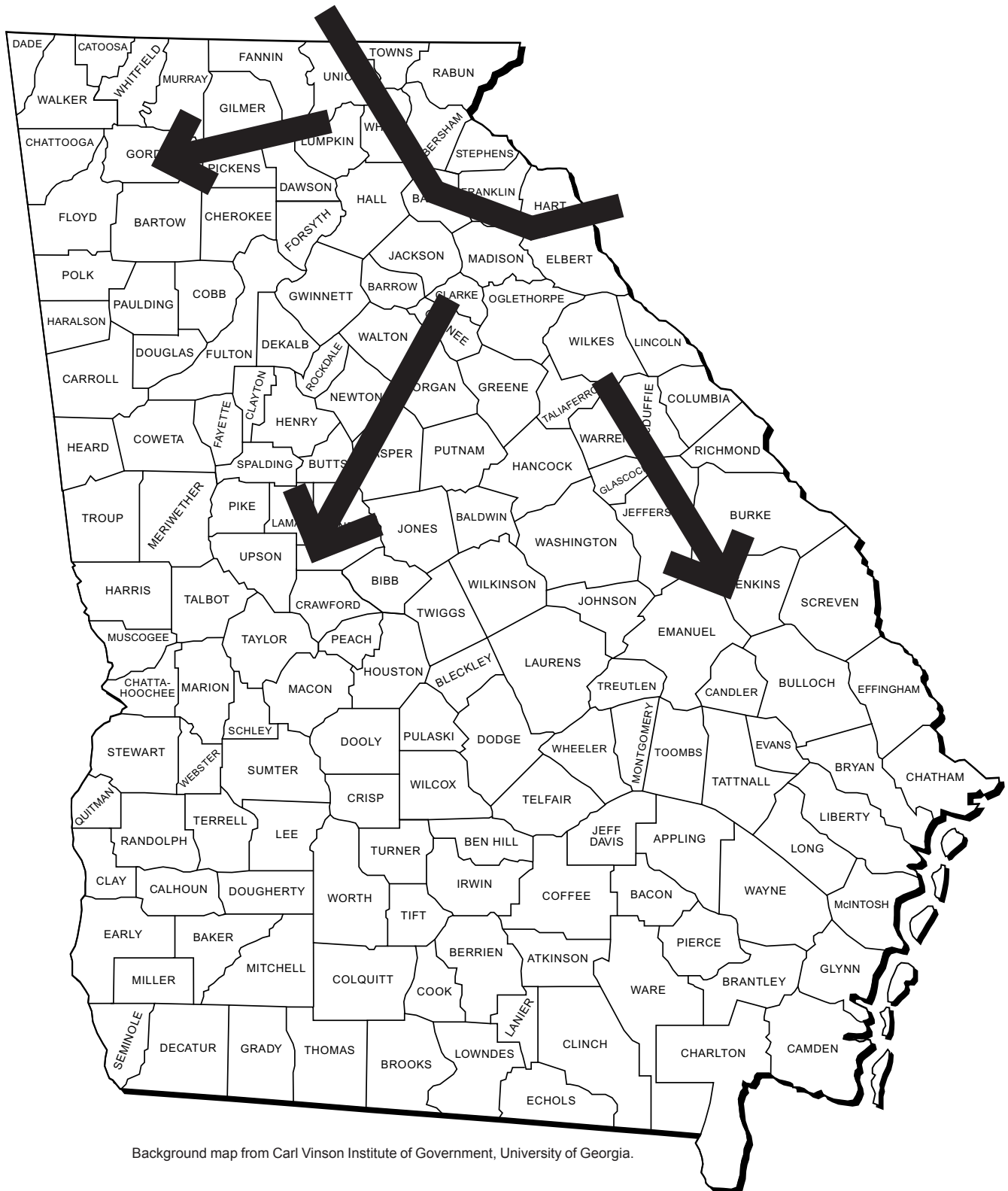
*Pinus taeda* overlaps many pines species in its range and growth characteristics. *Pinus elliottii* (slash pine) can be confused with loblolly pine due to needle length. Slash pine cones are glossy chestnut brown in color with weak prickles, and needles are dense all along twigs, shiny, and grow in bundles of 2 and 3. In comparison, *Pinus taeda* cones are dull brown in color with sharp thick prickles, and needles are crowded toward the end of twigs, are dull appearing, and grow in bundles of 3. *Pinus echinata* (shortleaf pine) has shorter needles and cones than loblolly pine. Shortleaf pine has needles growing 2-3 per bundle and has similar appearing periderm except for resin pockets which are clearly visible on shortleaf pine periderm surfaces. *Pinus rigida* (pitch pine) has shorter needles and cones, and *Pinus palustris* (longleaf pine) has much longer needles and cones plus thicker twigs than *Pinus taeda*. *Pinus serotina* (pond pine) has shorter, coarser needles and shorter cones with smaller prickles than loblolly pine.

*Pinus taeda* does form many hybrids in the field which can generate trees with intermediate characteristics and lead to identification problems. *Pinus taeda* hybridizes with *Pinus echinata* (shortleaf pine) which can have significant rust disease resistance, *Pinus elliottii* (slash pine), *Pinus palustris* (longleaf pine) with some hybrids called *Pinus x sonderreggeri*, *Pinus rigida* (*Pinus x rigitaeda*) which can be more cold hardy than loblolly pine and is used commercially in Korea, and *Pinus serotina* (pond pine).

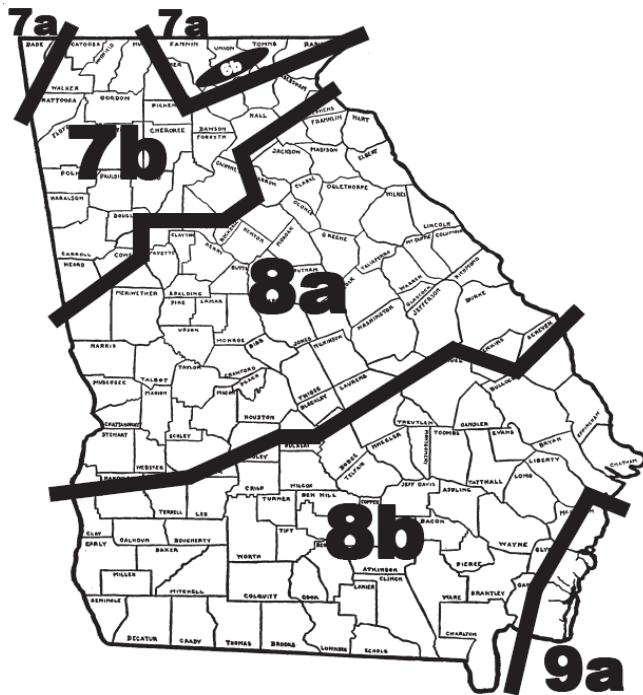
Traditional uses for *Pinus taeda* has been for commercial wood and pulp production. It has been used for lumber, beams, pulp, plywood, posts, veneer, pine carvings, and canoe making.

Figure 1: Native range for *Pinus taeda* --  
loblolly pine in Georgia.

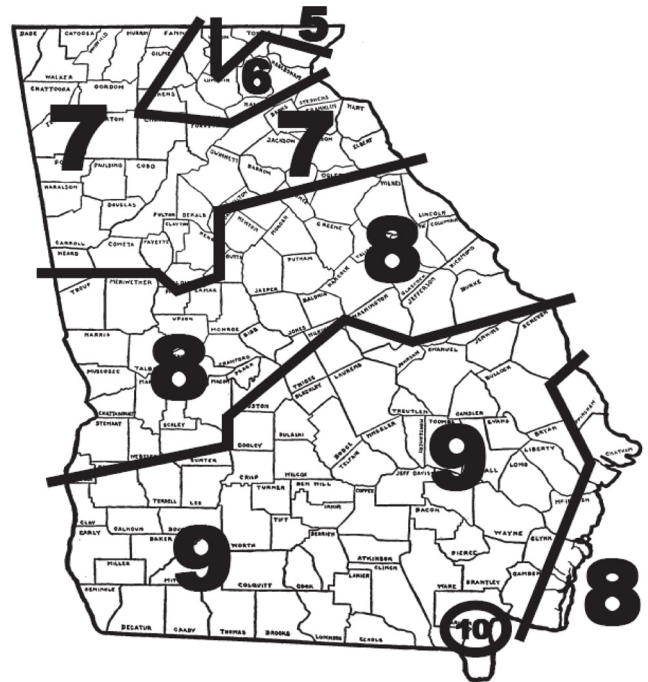
Native range from federal and state maps, herbarium samples and personal observations.  
Native range includes all areas South and West of line on the side with arrows.



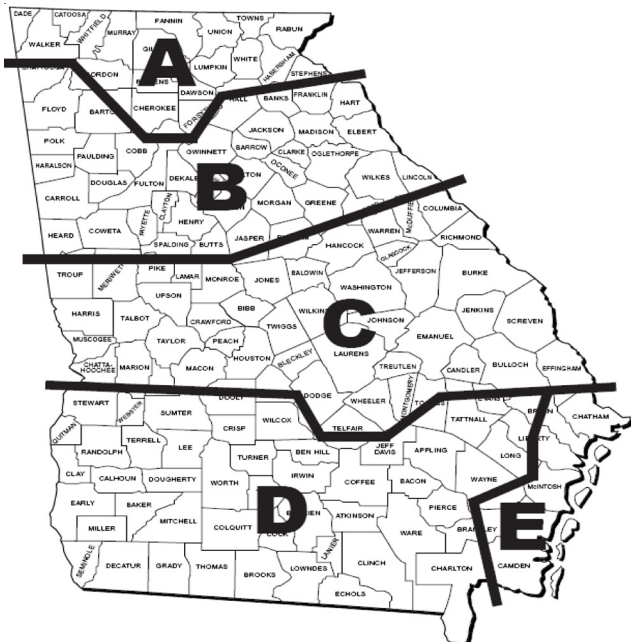
Background map from Carl Vinson Institute of Government, University of Georgia.



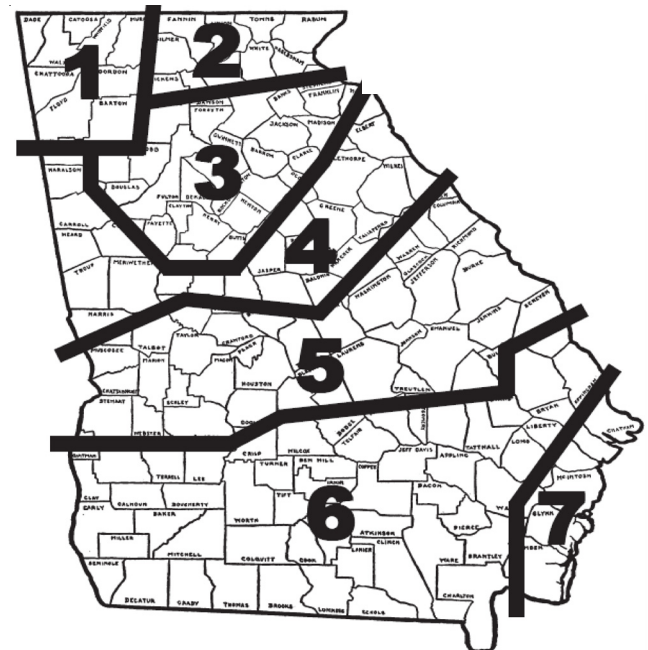
**Georgia Hardiness Zones**  
(cold temperatures)



**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.