

TECHNICAL NOTE NUMBER 214

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SOUTHERN YELLOW PINE

The collective term "southern yellow pine" or "southern pine" includes principally longleaf, shortleaf, loblolly, and slash pines growing in the Southern States from Virginia to Texas. (See maps.) When cut into lumber these species cannot be distinguished one from another, except in the case of longleaf pine which can as a rule be distinguished from shortleaf and loblolly pines if the pith is present.

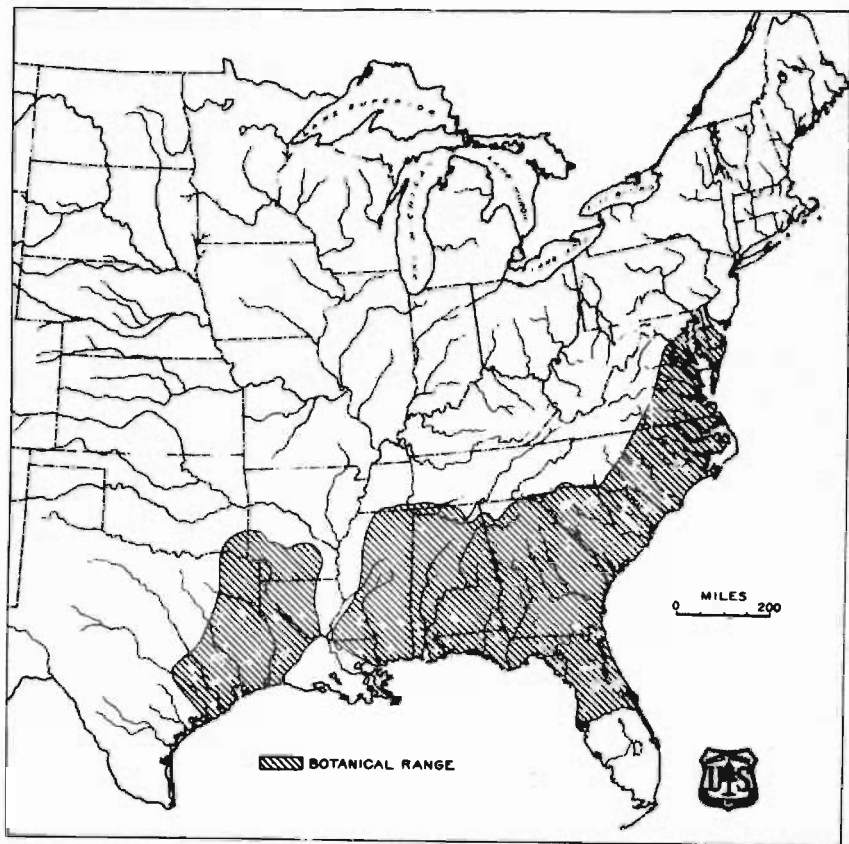
The southern pines have overlapping ranges in density, width of annual rings, width of sapwood, and other qualities and consequently overlap one another in their uses. Many consumers ordering southern pine lumber make no distinction as to species. Some use the term "longleaf" or simply "southern pine" when they desire dense material, and "shortleaf", "Arkansas soft pine", or "North Carolina" pine when they want lighter material. Others desiring longleaf specify the definite species which bears that name. Similarly, some southern pine mills follow the practice of classifying their heavier, darker material of medium rate of growth as "longleaf", and the wider-ringed light weight material as "shortleaf", regardless of the botanical species of the trees from which it was cut. While a consumer ordering "longleaf" from such a mill might not get wood which would all classify as dense, he would probably get material denser on the average than if he specified "shortleaf", or made no "species" or density specification at all. He would, however, have small grounds for the refusal of a shipment of any southern pine lumber sent him if the shipment did not consist of the class of material he desired. Certain mills having longleaf

pine stands issue certificates with shipments guaranteeing them to consist entirely of longleaf pine. Confusion and litigation sometimes result because the buyer and seller do not understand each other's terminology.

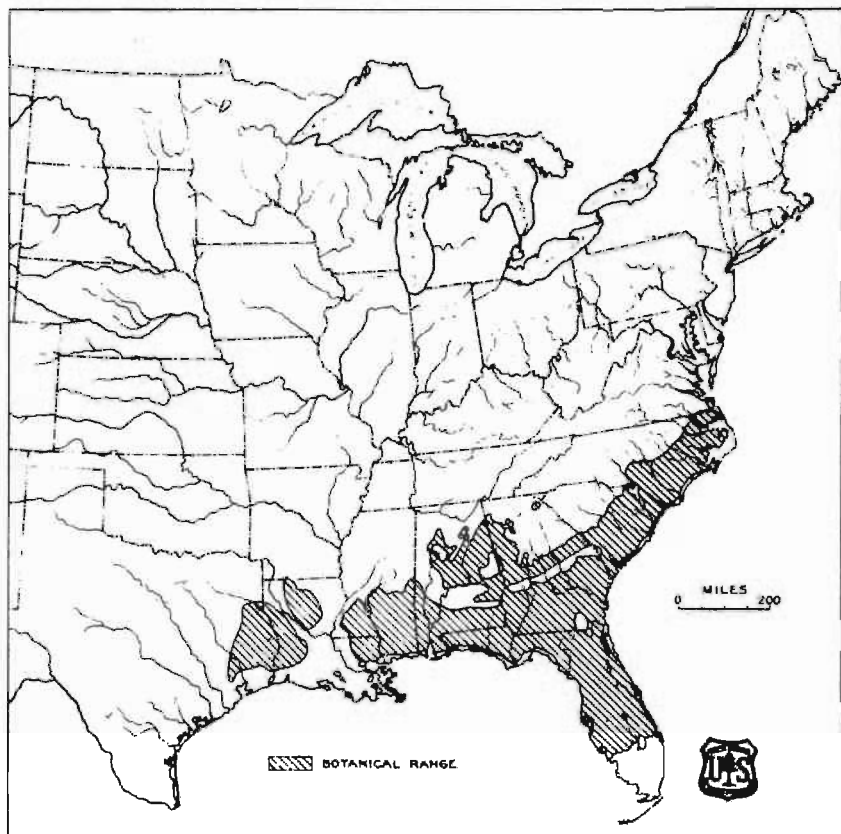
There are no fundamental differences among the southern pines which make all of the wood of one species preferable to all of the wood of another for any given purpose. Dense wood of any southern pine has practically the same strength and other characteristics as equally dense wood of any other southern pine, and lighter weight pieces are more or less alike.

In tests at the Forest Products Laboratory longleaf and slash pines have been found to have somewhat higher average strength properties than shortleaf and loblolly pines, but dense pieces of the latter species were found to be stronger than the average pieces of the former. Aside from defects, density can be taken as the factor that determines the strength of any piece of southern pine for structural purposes. It is easily determined by visual methods, and structural timbers are now classified and sold under density specifications.

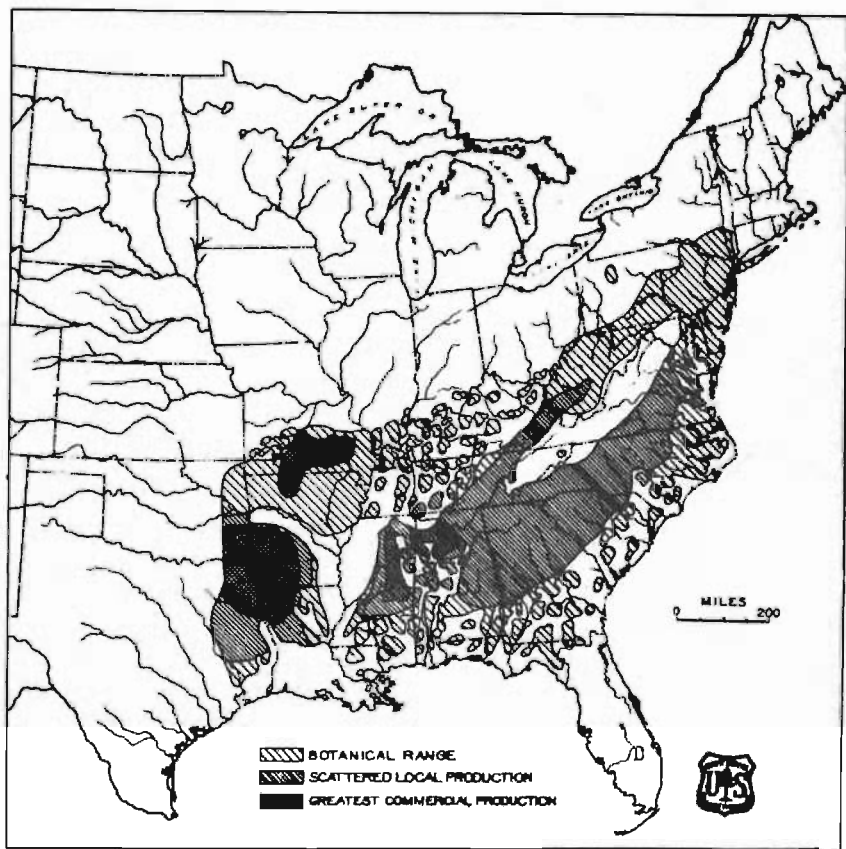
The best visual indication of density is the proportion of summerwood, which is the darker portion of the annual growth ring. The greater the percentage of summerwood, the higher is the density. Width of rings, which is sometimes used as a basis for density classification, cannot be considered as a satisfactory substitute for the summerwood requirement. The density rule given in the manual of the Southern Pine Association specifies both the proportion of summerwood and number of rings per inch, but of these specifications the summerwood clause is decidedly the more important. Where high-strength dense material is essential, the density rule affords a definite basis for purchase and inspection, thus minimizing the chance of misunderstanding and controversy. Copies of the density rule



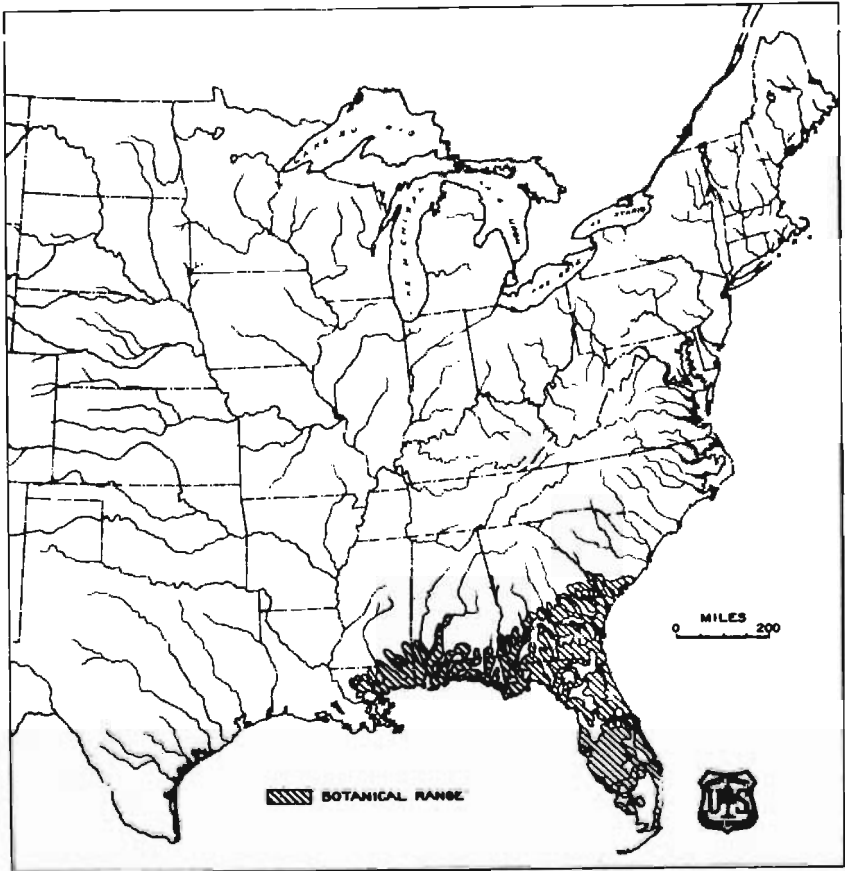
LOBLOLLY PINE (*Pinus taeda*) BOTANICAL RANGE



LONGLEAF PINE (*Pinus palustris*) BOTANICAL RANGE



SHORTLEAF PINE (*Pinus echinata*) BOTANICAL AND COMMERCIAL RANGES



SLASH PINE (*Pinus caribaea*) BOTANICAL RANGE

may be obtained from the Forest Products Laboratory, Madison, Wisconsin, or from the Southern Pine Association, New Orleans, Louisiana.

Density is a more reliable factor than species in determining the suitability of pieces of southern pine for uses even where structural strength is of secondary importance. Hardness - a quality desirable in flooring, for instance - is directly dependent upon density. Dense pieces of any southern pine swell and shrink more with changes in moisture content than do lighter pieces, so that density is the best criterion of the ability of wood to stay in place. The workability of the southern pines is more dependent on the density of the wood than on the species. Light pieces are less liable to split and are in general more easily worked than dense pieces.

For many uses the trouble and expense entailed in classifying southern pine by a density rule would not be justified. In such cases sufficiently satisfactory material may possibly be obtained by ordering from mills and localities known to produce the type of lumber desired. This method, however, does not afford a positive means of getting material of the character desired.

Virgin-growth southern pine is denser on the average and usually has narrower sapwood than second-growth pine. As high as 90 percent of the longleaf and slash pine cut from a virgin stand may classify as dense under the grading rules. The percentage of virgin-growth shortleaf and loblolly pines that could actually be classified as dense is much smaller than 90 percent, but even in these species material cut from virgin growth averages considerably denser than the wide-ringed, coarse-textured wood which characterizes much second-growth pine. Most of the mills operating in the old lumbering regions have cut their virgin-stand timber and are now operating in second-growth stands. Thus the

lumber at present produced in Virginia and the Carolinas is almost exclusively from second-growth stands and consequently differs from that coming from the few mills in the South which are still working in virgin timber.

Although virgin longleaf pine has narrower sapwood on the average than shortleaf and loblolly pines, there is so much variation in each species that more definite limitations on amount of sapwood can be obtained by specifying the maximum amount permissible, rather than by specifying longleaf pine.

The wide-ringed, lightweight, easily worked, and soft southern yellow pine lumber of comparatively low strength that is grown in the Atlantic Coastal Plain is largely loblolly and is known as North Carolina pine. The soft easily worked pine of uniform texture and low strength, produced chiefly from the shortleaf stands in or near the Ozark Mountains, is called Arkansas soft pine.

Longleaf and slash pine produce about 60 percent of the world's turpentine and rosin. Known as naval stores, these products together with other pine tree chemicals, such as pine oil and tar, are valuable sources of revenue. The young longleaf and slash pine forests promise to maintain or even increase the supply of these products, and will thus afford an important early source of revenue to timber land owners who practice practical forest management in the region.