

Indicator 2.12.

Area, Percent, and Growing Stock of Plantations of Native and Exotic Species

What is the indicator and why is it important?

This indicator is a measure of the degree to which forest plantations are being established in response to increasing demand for forest products and competing nontimber uses for forest land. The provision of forest products from intensively managed plantations, which are more productive and efficient, can enhance the potential range and quantity of goods and services available from the forest.

In this indicator, we will look at planted forests in general. Planted forests in the East tend to be traditional, intensively managed pine plantations and in the West planting is generally used to augment stocking with a preferred species, usually Douglas-fir or ponderosa pine. In both cases the target is a crop tree stand dominated by the preferred species and we will treat them as similar because they have a common management goal.

What does the indicator show?

In contrast to many other countries, virtually all tree planting in the United States is of native species with nonnative species comprising less than 1 percent of all planted forest. Two types of planting can be identified; traditional plantations of intensively managed trees where other vegetation is actively suppressed, and planting to augment stocking of naturally regenerating forests. The former, predominantly occur in the East and the latter, predominantly in the West. Although conifers overwhelmingly dominate, broadleaves such as high-value species like black walnut and oaks are planted as well. In addition, a nonnative hardwood, royal Pawlonia (*Paulownia tomentosa*) is planted to produce wood for export markets. Although forest planting is common in the United States, it should be noted that fully two-thirds of all of the annual 11 million acres of forest harvested in the United States regenerate by natural means.

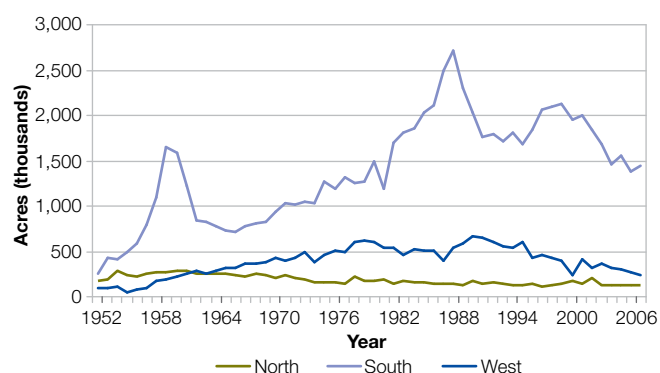
During the past 50 years more than 100 million acres of forest have been planted in the United States (fig. 12-1), including regeneration after harvest of previously planted stands and converted natural stands. During this time incentive programs established millions of acres of planted forest, including the Soil Bank Program in the 1950s and the Conservation Reserve Program during the late 1980s and early 1990s. Although most of these planted forests were established on private land, public

funding was often used to help put them into place. Historically, forest industries also leased private forest land or offered management assistance to private landowners to establish or maintain planted forests to assure future wood supplies. Recent large divestitures of most forest industry land, however, may have altered this practice and data from the new owners needs to be monitored to evaluate this situation.

Overall, planted forests account for 8 percent of all U.S. forest land and 12 percent of timber land, predominately comprised of conifer species. In the West, planted forests account for an estimated 12.2 million acres or 19 percent of all planted timber land (table 12-1). About 95 percent of these occur in the Pacific Coast Region. In the East, planted forest totals 51 million acres or 80 percent of all planted timber land. Most planted forests are in the South which has 45 million acres, or about 71 percent of all planted timber land, and are primarily comprised of longleaf, slash, loblolly or shortleaf pine. Planted forest acreage continues to rise in the South and currently accounts for 22 percent of all timber land in the region. Increases at the current rate are not likely to continue as incentive programs subside and as previously planted stands are harvested and reestablished with no increase in net area in planted timber land.

Planted forests make up a substantial component of only a few forest type groups across the country. In the South, loblolly-shortleaf pine has the greatest acreage of planted timber land (fig. 12-2) at 30 million acres or 48 percent of all planted timber

Figure 12-1. Area of tree planting in the United States by major geographic region, 1952–2006.



Source: USDA Forest Service, Cooperative Forestry

land followed by longleaf-slash pine with nearly 8 million acres. In the North Region, white-red-jack pine planted timber lands are the most common with 2.8 million acres. And, in the West, Douglas-fir has the largest area of planted timber land at 7 million acres.

Nationwide, about 75 billion cubic feet of growing-stock inventory are contained in planted stands, about 8 percent of total growing-stock inventory (fig. 12-3). This seemingly low contribution to inventory relative to percentage of all timber land planted (12 percent) is because of the young age class structure of the planted resource. Because of high productivity, planted stands make a significant contributions to timber inventory, even with a very young age-class structure.

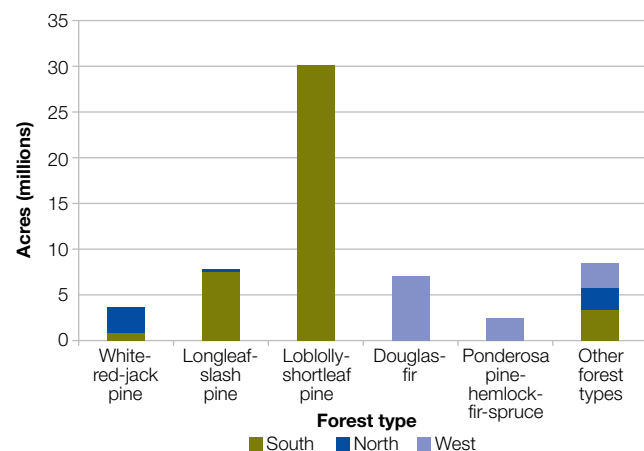
In the South, planted stands are currently providing two-fifths of the region's softwood removals—a percentage that will

Table 12-1. Area of forest land and planted and natural timber land.

Region and type	Forest land	Timber land		
		Total	Planted	Natural
East		<i>Million acres</i>		
Loblolly-shortleaf pine	55	55	30	24
Longleaf-slash pine	15	14	8	6
White-red-jack pine	11	10	3	7
Oak-pine	30	29	4	24
Other types	277	260	6	255
Total	387	368	51	317
West				
Douglas-fir	39	35	7	28
Ponderosa pine	25	23	1	22
Hemlock-fir-spruce	92	34	1	33
Other types	209	54	3	52
Total	365	146	12	134
U.S. total	751	514	63	451

Source: USDA Forest Service, Forest Inventory and Analysis

Figure 12-2. Area of planted timber land by major forest type and region, 2007.



Source: USDA Forest Service, Forest Inventory and Analysis

rise as the relatively young stands increase in age. A forecast that planted timber lands in the South would supply more than one-half of the softwood removals in the region by 2010, appears on track.

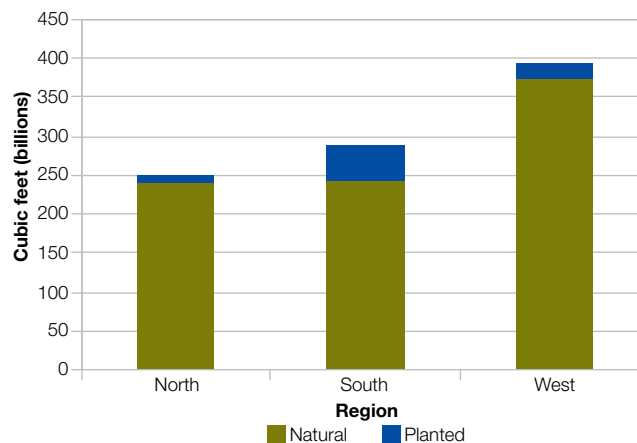
Plantations are considered one of the best alternatives for maintaining wood supplies in the face of shrinking areas of forest available for wood production because of competing uses. Because the Southern Region will likely continue its dominance as the Nation's wood basket well into the future, this region's high-yield planted forests will likely continue to play a crucial role in sustaining U.S. wood production.

During the past decade, significant changes in forest ownership have occurred in the United States. Large-scale divestiture of landholdings by forest industry has resulted in the shift of millions of acres of these acres primarily to timber investment management organizations (TIMOs) and real estate investment trusts (REITs). Future changes in wood availability created by these shifts will need to be monitored.

What has changed since 2003?

The broader definition of planted forest versus plantations allowed for the inclusion of large areas of forest where augmented stocking of natural regeneration takes place, mainly in the West. On this basis, planted forests increased from 56 million acres in 2003 to 63 million acres currently. The South continues to be the main area for planted forests and increased from a reported 38 million acres in 2003 to 45 million acres in 2007. Volume on planted forests increased from an adjusted 57 billion cubic feet in 2003 to 75 billion cubic feet in 2007, a 32-percent increase. Volume in the South increased from 30 to 42 billion cubic feet (40 percent).

Figure 12-3. Growing stock volume on planted and natural forest by region, 2007.



Source: USDA Forest Service, Forest Inventory and Analysis