Errata

In the printed version of this brochure the graphics on page 13 should be in Billion cubic feet. The following pdf version of the brochure has been corrected.

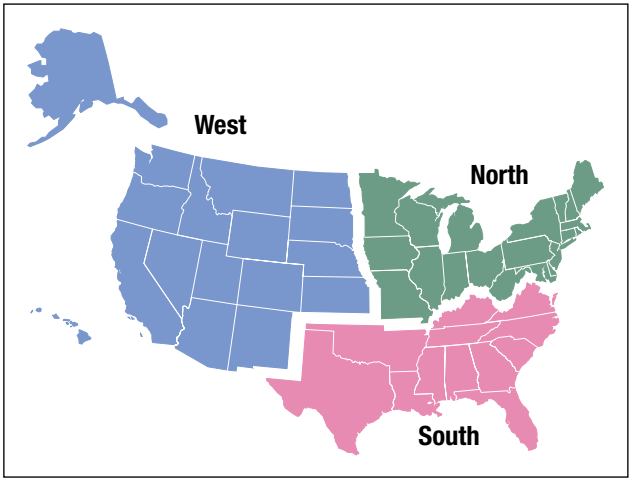
U.S. Forest Facts and Historical Trends

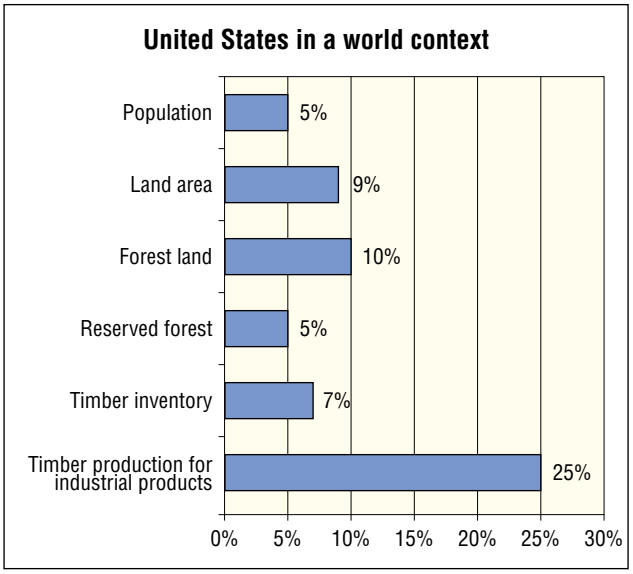
http://fia.fs.fed.us

U.S. Department of Agriculture Forest Service

Introduction

The 2000 Renewable Resources Planning Act Assessment (2000 RPA Assessment) is the fourth assessment prepared in response to the mandate in the Forest and Rangeland Renewable Resources Planning Act of 1974, P.L. 93-378, 88 Stat. 475, as amended (RPA). The 2000 RPA Assessment consists of a summary report and supporting documents (available at http://www.fs.fed.us/pl/rpa/list.htm). Renewable resources in this assessment include outdoor recreation, fish and wildlife, wilderness, timber, water, range, and minerals. In addition, and for the first time, there is an assessment of the urban forest resource. Data presented in this brochure highlight the findings of the 2000 RPA assessment regarding forest resource statistics: reserved forest land, timber land, forest landownership, forest composition, mortality, growth and removals, tree planting, products made from timber, and urban influences on forest land area. Regional data are reported geographically as North, South, and West.





Forest Inventory

Various attributes of the forest resource are inventoried by the U.S. Department of Agriculture Forest Service (USDA Forest Service) Forest Inventory and Analysis (FIA) Program and reported in the RPA Assessment and various supporting documents. To provide timely, scientifically reliable estimates of the status, condition, and trends of the Nation's forests, the FIA has conducted field inventories for more than 70 years using state-of-the-art technology. These inventories have provided critical information in the development and implementation of policies and practices that support sustainable forestry in the United States. Seven national reports based on FIA data have been produced since 1953.

Extensive field measurement from FIA inventories include over:

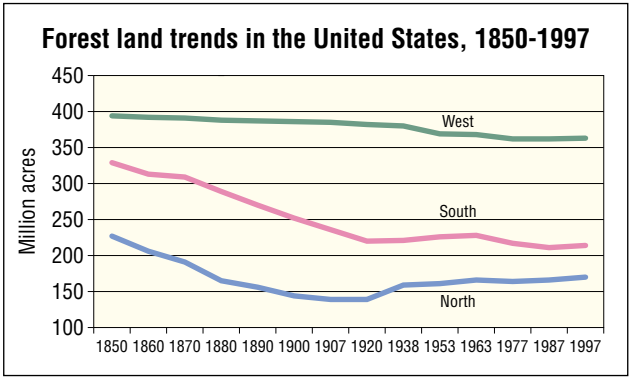
- 4.5 million remote sensing plots interpreted for land use
- 125,000 permanent field plots systematically located across all forest lands in the United States
- 100 characteristics measured at each plot location
- 1.5 million trees measured to evaluate volume, condition, and vigor

Additional information about FIA may be found at http://fia.fs.fed.us.

Land and Forest Area

It is estimated that—at the beginning of European settlement—in 1630 the area of forest land that would become the United States was 1,045 million acres or about 46 percent of the total land area. By 1907, the area of forest land had declined to an estimated 759 million acres or 34 percent of the total land area. Forest area has been relatively stable since 1907. In 1997, 747 million acres—or 33 percent of the total land area of the United States—was in forest land. Today's forest land area amounts to about 70 percent of the area that was forested in 1630. Since 1630, about 297 million acres of forest land have been converted to other uses—mainly agricultural. More than 75 percent of the net conversion to other uses occurred in the 19th century.

Stability, however, does not mean that there has been no change in forest land area. There have been shifts from agriculture to forests and vice versa. Some forest land has been converted to more intensive uses, such as urban uses. Even on areas where forest land has remained stable, there have been changes as forests respond to human manipulation, aging, and other natural processes. The effects of these changes are reflected in the information presented in this brochure.



Land and forest area trends in the United States[1]

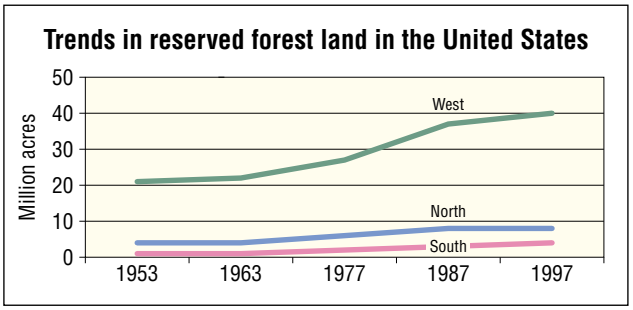
Category	Year	U.S.	Region		
			North	South	West
			Million acres		
Land	1997	2,263	413	535	1,315
Of which:					
Forest	1997	747	170	214	363
	1987	739	166	211	362
	1977	744	164	217	362
	1963	762	166	228	368
	1953	756	161	226	369
	1938	760	159	221	380
	1907	759	139	236	385
	1630	1,045	298	354	394
Of which:					
Timber land	1997	504	159	201	143
	1987	486	154	197	135
	1977	492	153	200	139
	1963	515	157	209	150
	1953	509	154	205	150
Reserved forest	1997	52	8	4	40
	1987	48	8	3	37
	1977	35	6	2	27
	1963	27	4	1	22
	1953	26	4	1	21
Other forest	1997	191	3	9	179
	1987	205	3	11	191
	1977	216	5	15	196
	1963	220	5	18	196
	1953	221	3	20	198

Reserved Forest Land

Reserved forest land has doubled since 1953 and now stands at 7 percent of all forest land in the United States. This reserved forest area includes State and Federal parks and wilderness areas but does not include conservation easements, areas protected by nongovernmental organizations, and most urban and community parks and reserves. Significant additions to Federal forest reserves occurred after the passage of the Wilderness Act in 1964.

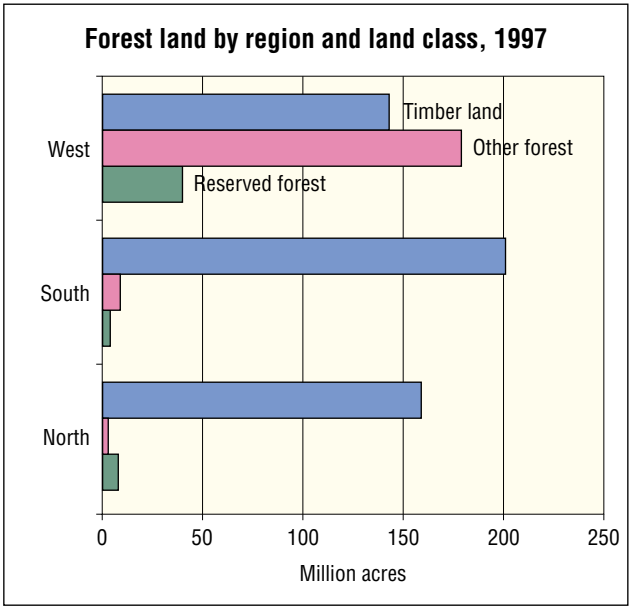
[1]In addition to the land area of the United States at that time, estimates for 1938 include forest area in the regions that would become the States of Alaska and Hawaii. Estimates for 1907 also include forest area in the regions that would become the States of Alaska, Arizona, Hawaii, and New Mexico. Estimates for 1630 represent the forest area in North America for regions that would become the 50 States within the current United States. Source for 1938: U.S. Congress (1941). Source for 1907 and 1630: R.S. Kellogg (1909).

While forest reserves are common in most western forest types, comprising 11 percent of their total forest area, only 3 percent of eastern forests are in reserves such as parks and wilderness.



Timber Land and Other Forest Land

Timber land is fairly evenly distributed among the three major regions of the United States. Other forest land, such as slow-growing forests of spruce in interior Alaska and pinyon-juniper in the interior West, dominate many western landscapes and comprise more than one-fourth of all U.S. forest land.



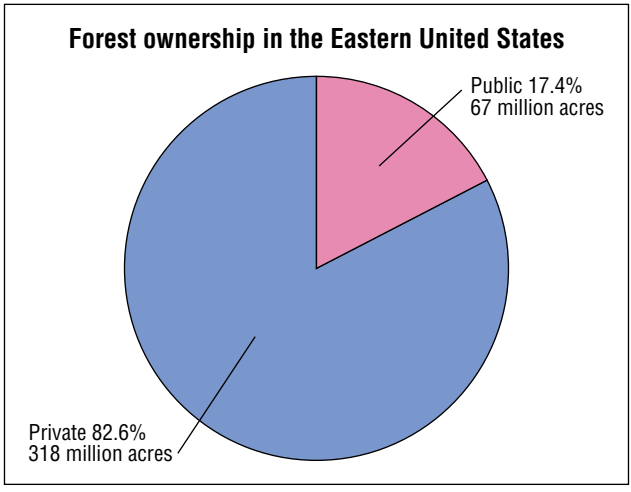
Ownership of Forest Land

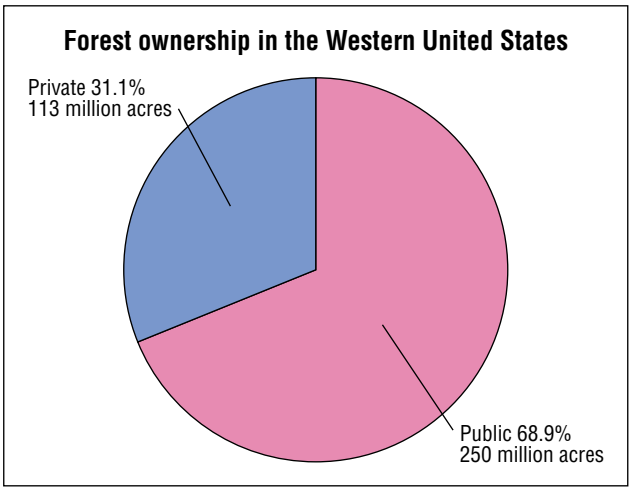
Ownership of forest land by region and land class, 1997

Onwer class/ land class	U.S.	Region		
		North	South	West
	Million acres			
National forest	**147**	**12**	**12**	**123**
Timber land	*96*	*10*	*11*	*75*
Reserved forest	*28*	*1*	*1*	*25*
Other forest	*23*	*0*	*0*	*22*
Other public	**170**	**30**	**13**	**127**
Timber land	*50*	*22*	*10*	*17*
Reserved forest	*23*	*6*	*3*	*14*
Other forest	*97*	*1*	*1*	*95*
Forest industry	**68**	**15**	**37**	**16**
Timber land	*67*	*15*	*37*	*15*
Reserved forest	*0*	*0*	*0*	*-*
Other forest	*1*	*0*	*0*	*1*
Other private	**363**	**114**	**152**	**97**
Timber land	*291*	*112*	*143*	*35*
Reserved forest	*1*	*0*	*0*	*1*
Other forest	*71*	*2*	*8*	*61*
All owners	**747**	**170**	**214**	**363**
Timber land	*504*	*159*	*201*	*143*
Reserved forest	*52*	*8*	*4*	*40*
Other forest	*191*	*3*	*9*	*179*

East vs. West

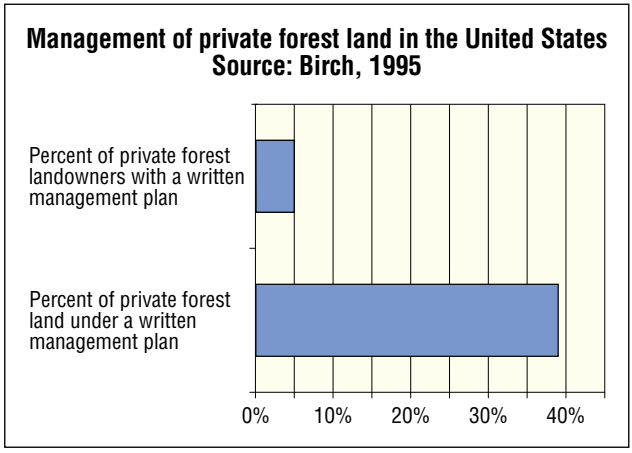
The ownership of forest land in the United States varies from East to West. While private forest land predominates in the East, public ownership is predominant in the West.





Public vs. Private Management Activity

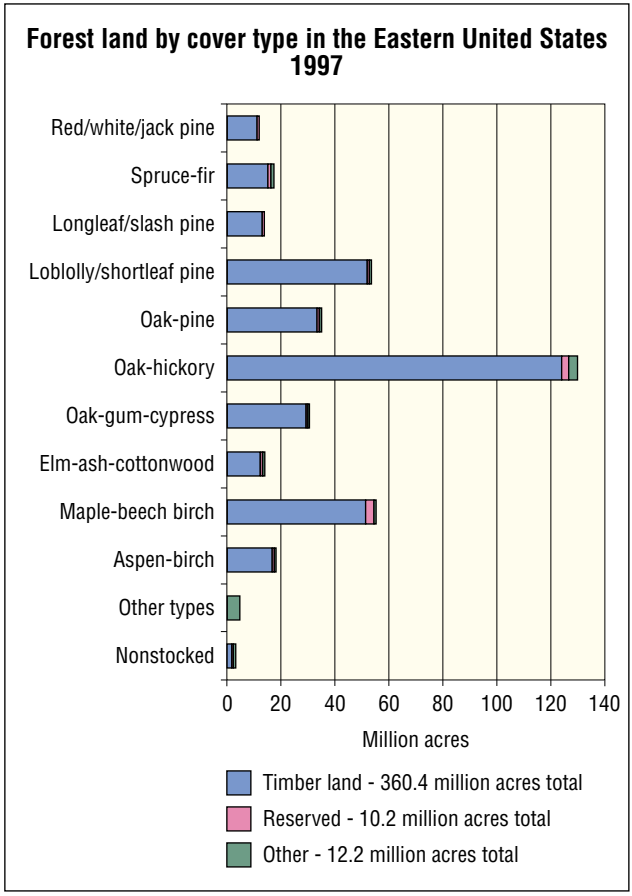
As timber production shifts from public to private land, there is an increasing need to have information on the management objectives of the private forest land owners. This information is critical to policies promoting sustainable forestry in the United States. Recent studies have shown that only 5 percent of the private forest landowners in the United States have a written management plan. However, these plans cover 39 percent of the private forest area in the United States. Private forests provided 89 percent of the Nation's timber harvest in 1996.

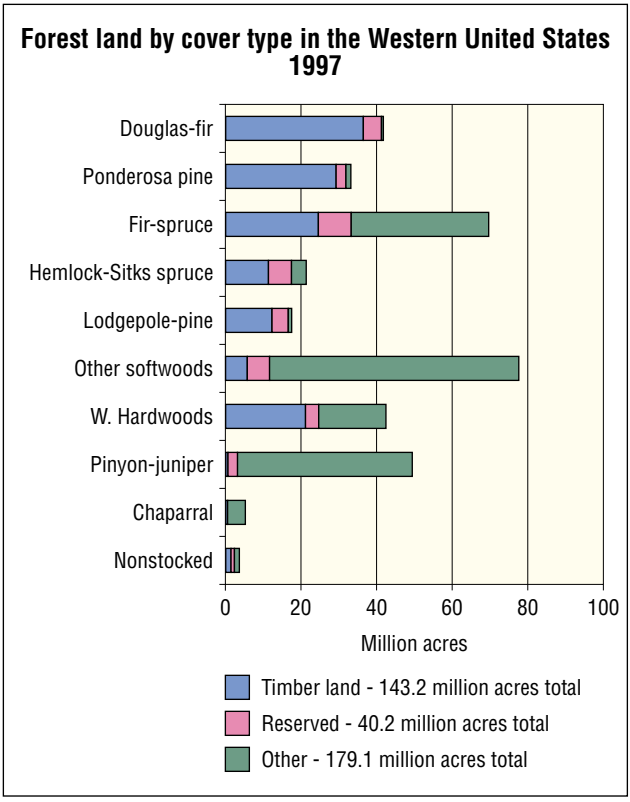


Forest Composition

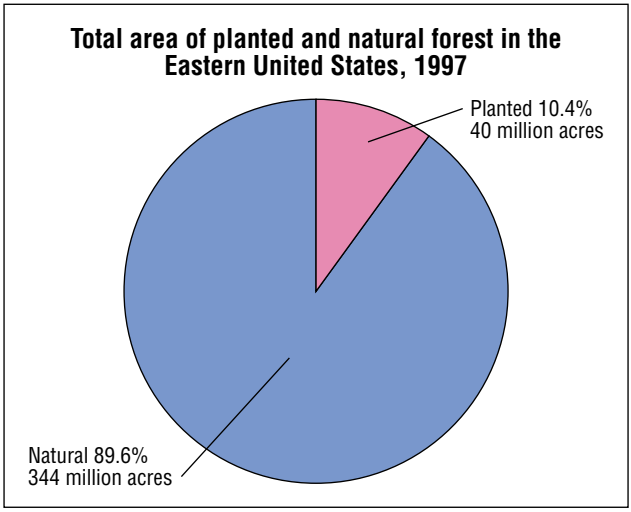
Forest Type and Stand Origin

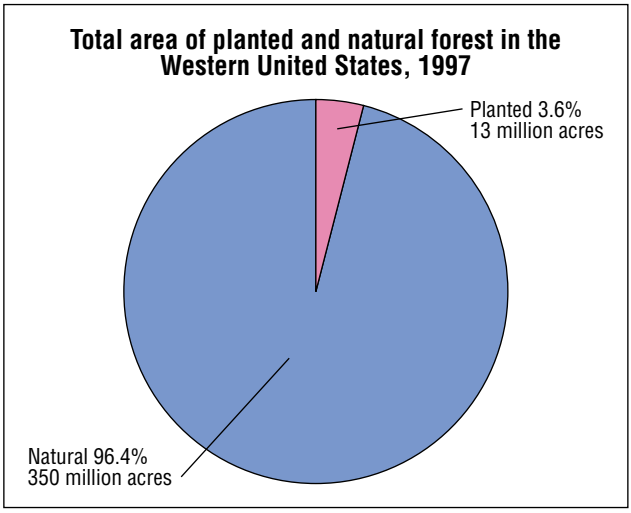
The forests of the United States are very diverse in composition and distribution—from the oak-hickory and maple-beech-birch forests that dominate the North to the expansive pine forests of the South to the majestic Douglas-fir and ponderosa pine forests of the West.



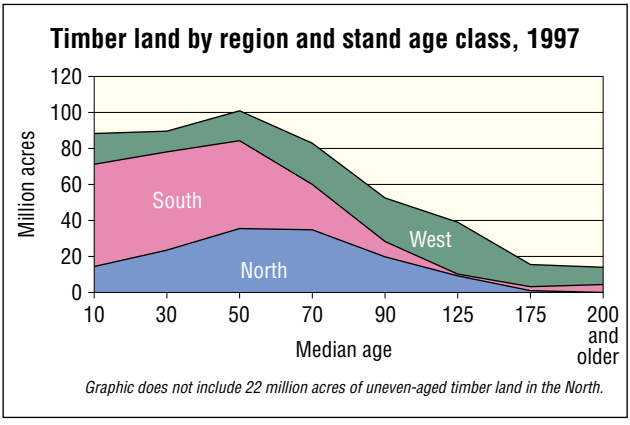


U.S. forests are predominantly natural stands of native species. Planted forest land is most common in the East and heavily comprised of planted stands of native pine in the South.





Stand Age and Average Annual Harvest Area
After intensive logging in the late 19th century and early 20th century, 55 percent of the forests on the Nation' s timber land is less than 50 years old. Six percent of the Nation's timber land is more than 175 years old. *[Large areas of old forest are in designated reserves and are not depicted in the timber land graphic shown.*]



Trends in Growing Stock Volume, Mortality, Growth, and Removals

Growing stock inventory, growth, removals, and mortality on timber land by region and species group in the United States, 1953-1997

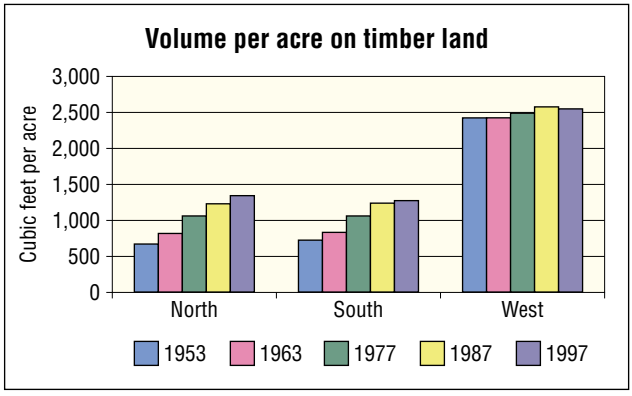
Volume category	Year	U.S.	Region		
			North	South	West
All species		*Billion cubic feet*			
Inventory	1997	835.7	214.3	256.4	365.1
	1987	781.7	190.0	244.6	347.0
	1977	733.1	163.0	223.4	346.7
	1963	665.6	128.3	174.1	363.2
	1953	615.9	103.7	148.5	363.7
Growth	1996	23.5	5.4	10.7	7.4
	1986	22.6	5.5	10.0	7.1
	1976	21.9	5.3	11.3	5.3
	1962	16.7	4.4	8.1	4.2
	1952	13.9	3.7	6.7	3.5
Removals	1996	16.0	2.8	10.2	3.1
	1986	16.0	2.7	8.2	5.0
	1976	14.2	2.5	6.7	5.0
	1962	12.0	2.1	5.5	4.4
	1952	11.9	2.1	5.7	4.1
Mortality	1996	6.3	1.6	2.2	2.5
	1986	4.6	1.2	1.7	1.7
	1976	4.1	1.1	1.3	1.7
	1962	4.3	0.9	1.2	2.2
	1952	3.9	0.7	1.0	2.2
Softwoods					
Inventory	1997	483.9	49.4	104.8	329.6
	1987	467.6	47.6	105.6	314.3
	1977	467.0	43.9	101.2	321.9
	1963	449.8	33.7	75.1	341.0
	1953	431.8	27.1	60.5	344.3
Growth	1996	13.4	1.2	5.9	6.3
	1986	13.0	1.3	5.5	6.2
	1976	12.5	1.6	6.3	4.6
	1962	9.6	1.2	4.7	3.7
	1952	7.7	1.0	3.6	3.1
Removals	1996	10.1	0.7	6.5	2.9
	1986	10.9	0.7	5.3	4.9
	1976	10.0	0.7	4.4	4.9
	1962	7.6	0.5	2.8	4.3
	1952	7.8	0.6	3.1	4.0
Mortality	1996	3.6	0.5	1.0	2.1
	1986	2.8	0.4	0.8	1.6
	1976	2.5	0.3	0.6	1.5
	1962	2.8	0.3	0.4	2.1
	1952	2.7	0.2	0.3	2.1

Growing stock inventory, growth, removals, and mortality on timber land by region and species group in the United States, 1953-1997 *(continued)*

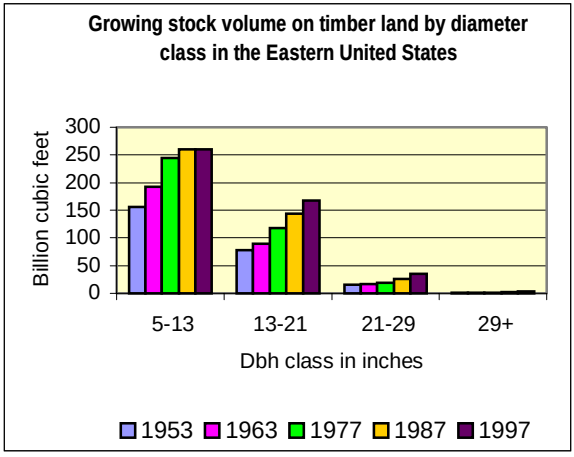
Volume category	Year	U.S.	Region		
			North	South	West
Hardwoods		*Billion cubic feet*			
Inventory	1997	351.8	164.9	151.5	35.4
	1987	314.1	142.4	139.0	32.6
	1977	266.1	119.2	122.2	24.8
	1963	215.8	94.6	99.0	22.2
	1953	184.1	76.7	88.0	19.4
Growth	1996	10.2	4.3	4.8	1.1
	1986	9.6	4.2	4.5	0.9
	1976	9.4	3.8	5.0	0.6
	1962	7.1	3.2	3.4	0.5
	1952	6.2	2.7	3.0	0.4
Removals	1996	6.0	2.1	3.7	0.1
	1986	5.0	2.0	2.9	0.1
	1976	4.2	1.8	2.2	0.1
	1962	4.3	1.5	2.7	0.1
	1952	4.1	1.5	2.6	0.0
Mortality	1996	2.7	1.2	1.2	0.3
	1986	1.9	0.9	0.8	0.2
	1976	1.6	0.8	0.6	0.2
	1962	1.6	0.6	0.8	0.1
	1952	1.2	0.5	0.6	0.1

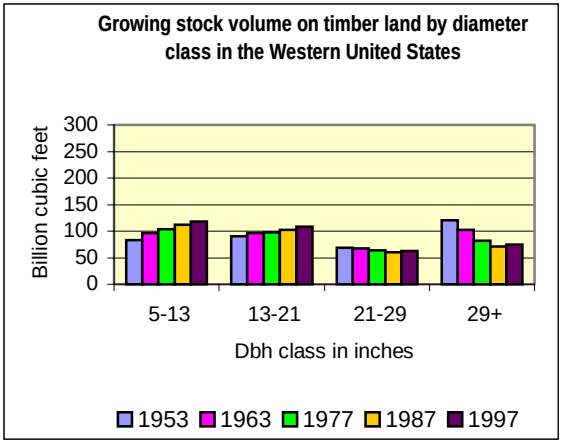
Growing Stock Volume

Average growing stock volume per acre on timber land continues to rise across the United States. The rate of increase has leveled off, partially due to recent increases in mortality.



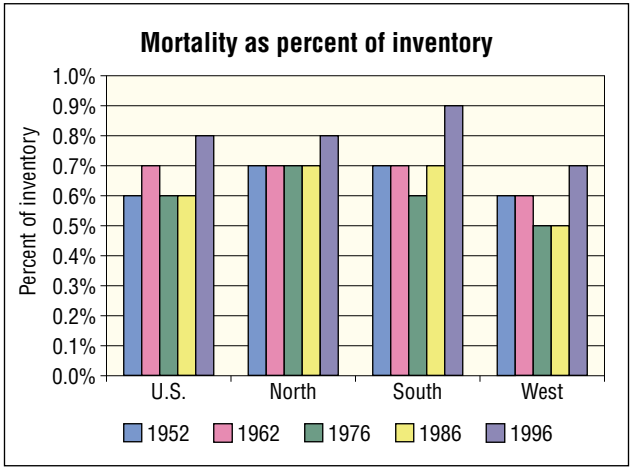
The average volume, and thus number of trees, on timber land in the United States continues to increase in most diameter classes. A slight decline in the 5- to 13-inch class in the east is expected to stabilize as trees planted on millions of Conservation Reserve Program acres in the South reach this size. The decline in the 29+ inch class on timberland in the west is, in part, due to setting aside timberland into legal reserves in the 1970's. Although they are not harvested, these set asides “remove” the trees from the timberland base. Recent increases in larger trees is due to policy shifts in the West that have curtailed harvesting of stands with larger trees.





Tree Mortality

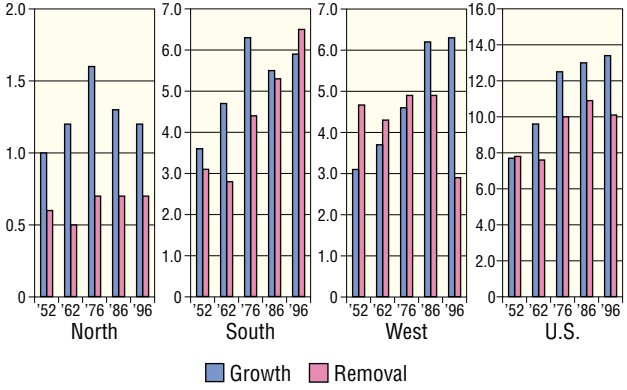
Tree mortality relative to standing inventory has fluctuated over the years and is currently at the highest level in 50 years. However, while current rates are high, much of the increase may be due to local effects. It is difficult to discern if they are beyond the range of normal variability from a national perspective.



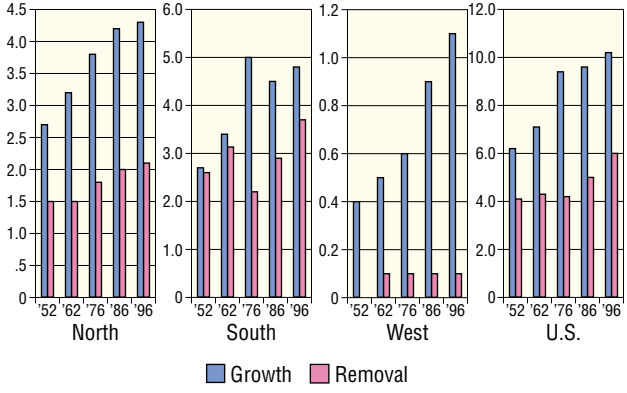
Growing Stock Growth and Removals

Over the past 50 years, growth has generally exceeded removals throughout the United States. While harvest levels have leveled off in recent years, there has been a decided shift from public land in the West to private land in the East. In 1996, softwood removals in the South exceeded growth for the first time since 1952, when national inventory data first became available.

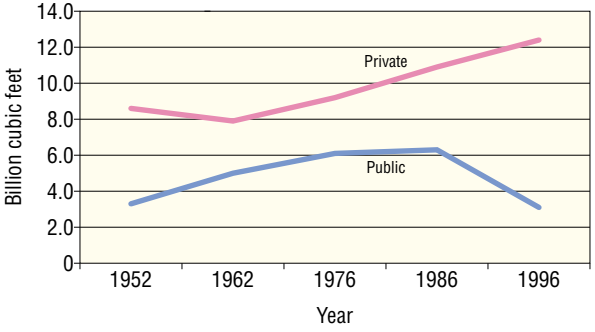
Softwood growing stock growth and removals by region (billion cubic feet)

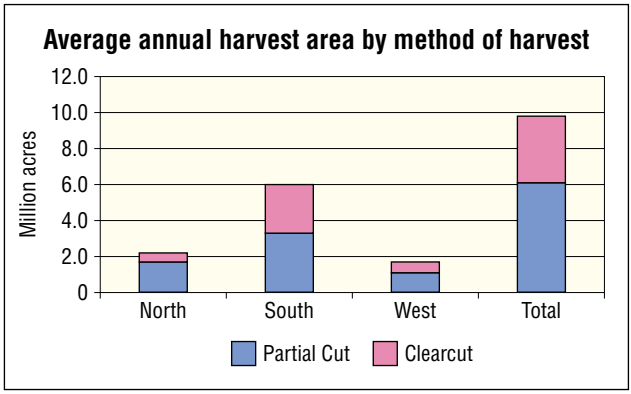


Hardwood growing stock growth and removals by region (billion cubic feet)



Timber removals in the United States by owner group

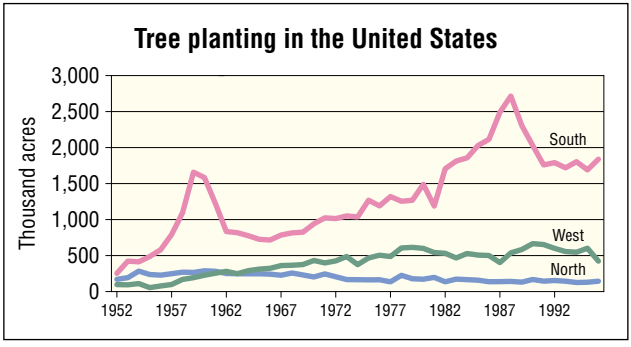




According to recent FIA State Reports, harvesting in the United States is approximately 62 percent selective felling and 38 percent clearfelling.

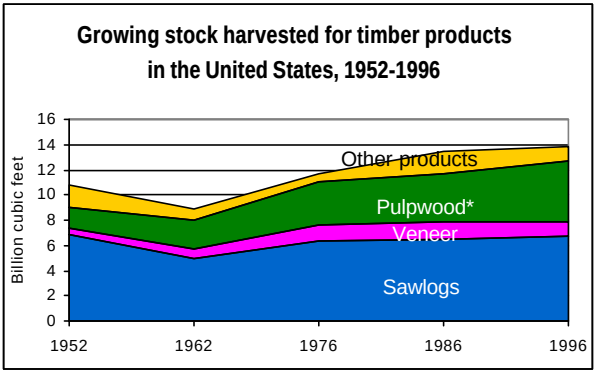
Tree Planting

Forest planting in the United States currently averages about 2.4 million acres per year. The most dominant planting is pine species in the South. Spikes in planting occurred in the South in the1950's, due to the Soil Bank Program, and in the 1980's, as a result of the Conservation Reserve Program, which saw planting of nearly 3 million acres of nonforest land. Western planting has subsided in recent years, mirroring reduced harvesting in that region.



Timber Products

While most timber products harvested from U.S. forests have been increasing since 1976, the greatest gains have been in fiber for pulp and composite products. Much of this increase has been in hardwoods as new technologies improve utilization of these species.

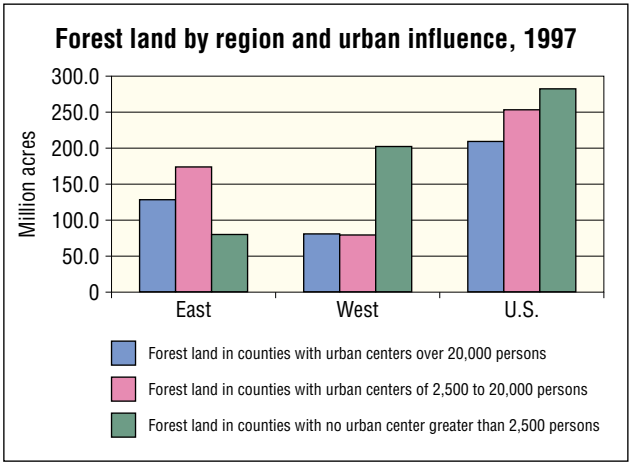


** Includes composite products*

Urban Influence on U.S. Forests

Urban influences include –

1. 28 percent of the Nation's forests are located in counties with urban centers of greater than 20,000 persons.
2. Urban areas (cities, towns, or villages with at least 2,500 people) occupy 3.5 percent of the total land area in the United States.
3. Urban areas have an average tree cover of 27.1 percent.
4. As landscapes become fragmented and more urbanized, more forests will be managed by urban residents and institutions



Conclusion

This brochure presents some trends and highlights regarding the forest resource of the United States. The supporting document for this brochure, "Forest Statistics of the United States, 1997," is available at http://fia.fs.fed.us.

Terms

Forest land—Land that is at least 10 percent stocked by forest trees of any size, including land that formerly had tree cover and that will be naturally or artificially regenerated. The minimum area for classification of forest land is 1 acre.

Growing stock volume—Live trees of commercial species meeting specified standards of quality and vigor. Cull trees are excluded. Includes only trees 5 inches in diameter or larger at 4.5 feet above ground.

Growth (Net Annual)—The net increase in the volume of growing stock trees during a specified year. Components include the increment in net volume of trees at the beginning of the specific year that survive to the end of the year, plus the net volume of trees reaching the minimum size class during the year, minus the volume of trees that died during the year, and minus the net volume of trees that became cull trees during the year.

Hardwood—A dicotyledonous tree, usually broad-leaved and deciduous.

Logging residues—The unused portions of growing-stock trees cut or killed by logging and left in the woods.

Mortality—The volume of sound wood in growing stock trees that died from natural causes during a specified year.

National forest—An ownership class of Federal lands, designated by Executive Order or statute as a national forest or purchase unit, under the administration of the Forest Service.

Other Federal—An ownership class of Federal lands other than those administered by the Forest Service. Primarily lands owned by the Bureau of Land Management, National Park Service, U.S. Fish and Wildlife Service, and the Departments of Energy and Defense.

Other forest land—Forest land other than timber land and productive reserved forest land. It includes available and reserved forest land, which is incapable of annually producing 20 cubic feet per acre of industrial wood under natural conditions because of adverse site conditions, such as sterile soils, dry climate, poor drainage, high elevation, steepness, or rockiness.

Other removals—Unutilized wood volume from cut or otherwise killed growing stock, from cultural operations such as precommercial thinnings, or from timber land clearing.

Removals—The net volume of growing stock trees removed from the inventory during a specified year by harvesting; cultural operations, such as timber stand improvement; or land clearing.

Reserved forest land—Forest land withdrawn from timber utilization through statute, administrative regulation, or designation.

Roundwood products—Logs, bolts, and other round timber generated from harvesting trees for industrial or consumer use.

Softwood—A coniferous tree, usually evergreen, having needles or scale-like leaves.

Timber land—Forest land that is capable of producing crops of industrial wood and not withdrawn from timber utilization by statute or administrative regulation. (Note: Areas qualifying as timber land are capable of producing in excess of 20 cubic feet per acre per year of industrial wood in natural stands.)

References

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