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Idaho's Forest Resources

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PREFACE

Forest Survey is a continuing nationwide undertaking conducted by the Forest Service, U.S. Department of Agriculture, with the primary objective of providing an assessment of the renewable resources on the Nation's forest and range lands. This requires periodic State-by-State resource inventories. Originally, Forest Survey was authorized by the McSweeney-McNary Act of 1928. The current authorization is through the Renewable Resources Research Act of 1978.

The Intermountain Research Station with headquarters in Ogden, UT, administers the forest resource inventories for the Rocky Mountain States of Arizona, Colorado, Idaho, Montana, New Mexico, Nevada, Utah, Wyoming, western South Dakota, western Texas, and Oklahoma's Panhandle. These inventories provide information on the extent and condition of State and privately owned forest lands, volume of timber, and rates of timber growth and mortality. These data, when combined with similar information for Federal lands, provide a basis for forest policies and programs and for the orderly development and use of the resources.

ACKNOWLEDGMENTS

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RESEARCH SUMMARY

Presents highlights of the forest resources of Idaho as of 1981. Describes the forest resources, their extent, condition, and location, and discusses levels of some nontimber use of forest lands. Includes statistical tables: area by land classes, ownership, growing-stock and sawtimber volumes, growth, mortality, roundwood products output, utilization, and residues.

HIGHLIGHTS

Area

- Total land area in Idaho is 52,891 thousand acres.
- Forests cover slightly more than 21.9 million acres, of which about 819 thousand acres is woodland.
- Timberlands make up roughly 96 percent of the forest land.
- 3.2 million acres of the timberland (about 15 percent) is privately owned.
- 12.8 million acres (87 percent) of the publicly owned timberland is on National Forests.
- About 37 percent of private timberlands is owned by forest industries.
- Douglas-fir is the single most extensive forest type (over 7 million acres).
- Lodgepole pine covers nearly 4 million acres.
- About 2.5 million acres (15 percent) of the forest land is reserved from timber harvest.
- Sawtimber stands make up over two-thirds of Idaho's timberlands.
- Woodland in southwestern Idaho is concentrated in Owyhee County and is western juniper. Woodland in southeastern Idaho is a mix of Utah and Rocky Mountain juniper.

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Volume

- Idaho's timberlands contain an estimated 30 billion cubic feet of wood in growing-stock trees.
- 70 percent of the volume is on National Forests.
- 25 percent of the volume is Douglas-fir.
- 72 percent of the volume is at middle and lower elevations.
- About half the softwood sawtimber volume is in trees less than 19 inches diameter at breast height (d.b.h.).

Components of Change

- Annual mortality of 115 million cubic feet in 1981 was about 15 percent of gross growth.
- Net annual growth of growing stock was about 648 million cubic feet.
- Sawtimber removals from private lands exceeded net growth by 448 million board feet.

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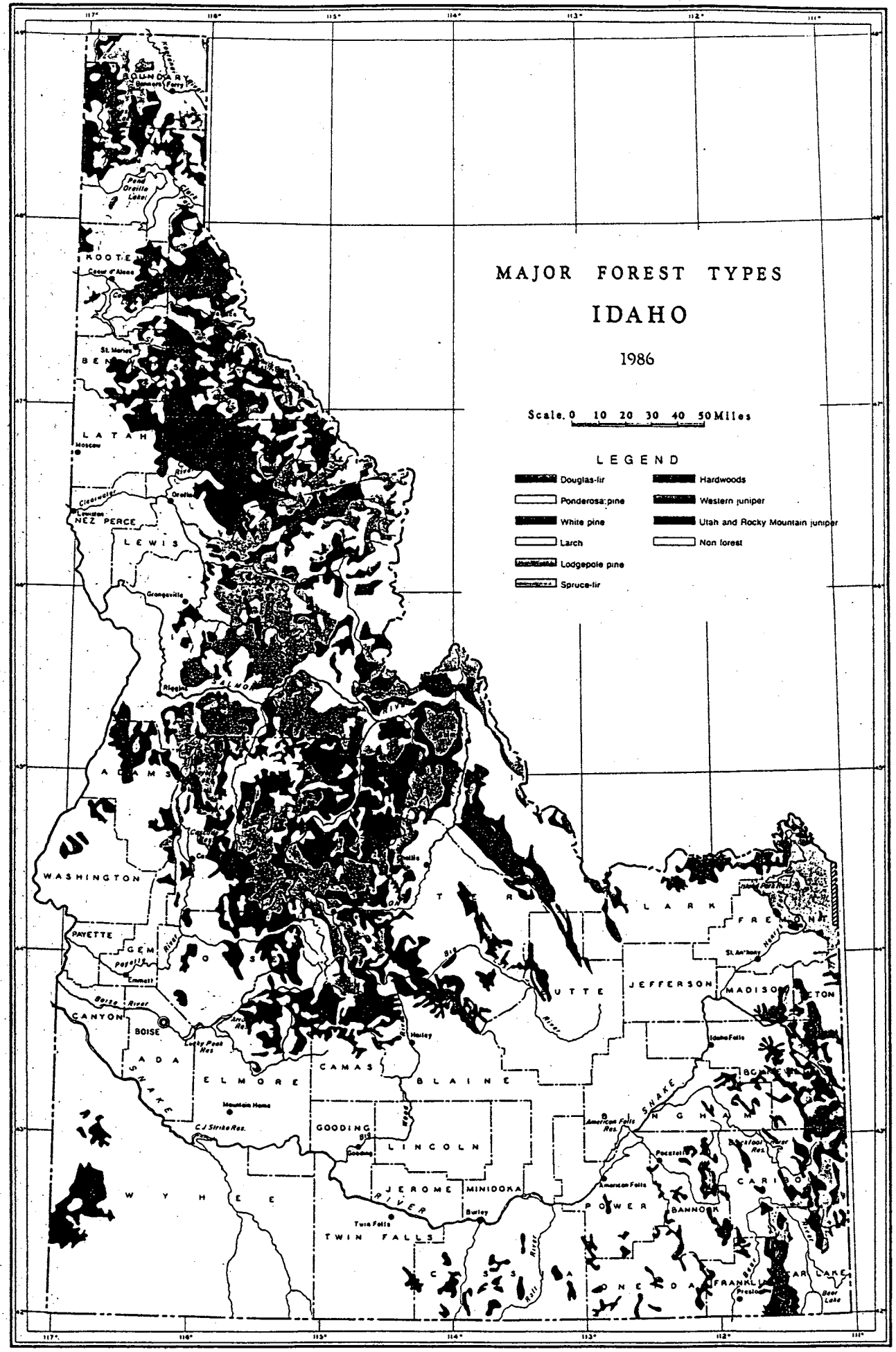

Figure 1—Forest types in Idaho.

Idaho's Forest Resources

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INTRODUCTION

This resource bulletin presents the principal findings of the latest inventory of Idaho's forest resources. This is the most recent in a series of reports and combines data on National Forests provided by the Intermountain and Northern Regions, and data on private and miscellaneous forest lands obtained by the Intermountain Research Station from field surveys conducted from 1980 to 1981, and data from State lands collected up to 1981 by the Department of State Lands. U.S. Department of the Interior, Bureau of Land Management (BLM) data were collected by the Bureau in 1974.

The data in this report represent changes from previously reported forest resource information for the State. Basically, there are three sources of changes: changes in forest land area estimates due to sampling design and intensity; changes in land classifications and uses; and biological and physical changes in the forest, primarily growth, mortality, and removals (particularly through harvesting).

Because of definition changes, direct comparisons with previous surveys cannot be made, but relative trends in the important concerns such as growth, harvest, and mortality can be observed. These biological changes and current land use designations have an important role in the outlook for the timber industry and other uses of the forest resources in the future.

Idaho contains 53.481 million acres of which nearly 52.9 million acres is land and nearly 0.6 million acres is water (table 1).

Table 1.--Total land and water area in Idaho by ownership class, 1981

Ownership class	Area
	- - - Thousand acres - - -
Land:	
National Forest	20,422.8
National Parks[1]	87.1
Other public:	
Bureau of Land Management	12,620.9
Miscellaneous Federal	166.5
State	2,649.1
County and municipal	120.6
Total other public	15,557.1
Private:	
Forest industry[2]	1,271.9
Nonindustrial private:	
Farmer-rancher	12,605.3
Other	2,946.8
Total nonindustrial private	15,552.1
Total private	16,824.0
Total land area	52,891.0
Census water	590.2
Total land and water[3]	53,481.2

[1]Not included with miscellaneous Federal, a component of other public, for purpose of clarity.
[2]Forest industry is a component of private ownership, but because of its importance to the Idaho timber supply situation, area and resource statistics are shown separately in this and other tables dealing with owner groups in this report.
[3]U.S. Bureau of the Census, land and water area of the United States, 1980.

The forests of Idaho are some of the most diverse in North America, if not the world. They range from the lush green cedar and hemlock stands of the panhandle in northern Idaho to the slow-growing trees of the pinyon-juniper type that are scattered throughout the southern portion of the State.

More than 40 percent of Idaho's land is forest.

A recent forest survey of Idaho revealed there are nearly 22 million acres of forest land in the State (table 2), more than 40 percent of the total land area in Idaho. The preponderance (roughly 96 percent) of these acres are classified as timberland, generally capable of producing timber products, and include forest types made up of species such as pines, firs, and spruce. A small portion (0.8 million acres or 3.7 percent) is classed as woodland, which includes pinyon, juniper, and miscellaneous hardwood forest types (table 2).

Table 2.--Total land area in Idaho by land class and ownership class, 1981

Land class	National Forest	Other public	Forest industry	Nonindustrial private	Total
	- - - - - - - - - - - -		Thousand acres		- - - - - - - - - - - -
Timberland:					
Deferred	935.3	--	--	--	935.3
Reserved	2,491.5	34.5	--	--	2,526.0
Nonreserved	12,807.5	1,635.0	1,178.1	2,040.0	17,660.6
Woodland:					
Reserved	1.0	--	--	--	1.0
Nonreserved	--	559.8	10.2	248.4	818.4
Total forest land:					
Deferred	935.3	--	--	--	935.3
Reserved	2,492.5	34.5	--	--	2,527.0
Nonreserved	12,807.5	2,194.8	1,188.3	2,288.4	18,479.0
Total	16,235.3	2,229.3	1,188.3	2,288.4	21,941.3
Nonforest land	4,187.5	13,414.9	83.6	13,263.7	30,949.7
Total land area	20,422.8	15,644.2	1,271.9	15,552.1	52,891.0

Idaho has long been an important supplier of wood products, and the popular trade name "Idaho White Pine" given to western white pine (*Pinus monticola*) indicates a unique and important role in the history of the development of the timber industry of the State.

Idaho's forest lands also provide a wide variety of other resources and uses. Most of the water in the State originates in the high, forested mountain areas, and the forest cover provides valuable soil-holding properties in these watersheds. Forage and cover for both domestic livestock and wildlife are important components of the forest and have contributed to Idaho's role as an important producer of red meat and wool and to the State's reputation for excellent big game hunting and outstanding recreational fishing.

The most productive timberland is north of the Salmon River.

The part of the State north of the Salmon River contains some of the most productive forest land and is virtually a continuous green carpet of trees. Between the Salmon River and the Snake River plains, extensive forest land is interspersed with rugged mountain ranges and broad rangeland valleys. The southeastern portion of the State contains a sizable high-elevation lodgepole pine and Douglas-fir forest that abuts Yellowstone National Park, and a considerable area of aspen and Douglas-fir adjacent to the Utah and Wyoming borders (fig. 1).

FOREST LAND CLASSES

About 2.5 million acres are reserved from timber cutting.

About 2.5 million acres of Idaho's forest lands are reserved—withdrawn from timber use through statute such as designated wilderness areas, or administrative designation such as special use areas, or facilities such as houses, powerline rights-of-way,[1] etc. (table 2). Another 0.9 million acres is deferred for possible addition to the wilderness. The land not reserved and generally capable of timber production is about 17.7 million acres (table 2). However, even on those lands not reserved some areas may have cutting restrictions because of other resource constraints, so that some of the timber may never be available for harvesting.

Woodland Types and Ownership

About 7.2 million acres are not suited for timber production.

The woodland classification newly adopted for the survey better reflects the capability of the land to produce forest-related resources other than the usual industrial roundwood products. In addition, the timberland base has been redefined to include some lands not formerly meeting the criteria for "commercial forest land"—that is, being able to produce 20 cubic feet of wood per acre per year. Previous classification showed about 7.2 million acres of "noncommercial" forest land, 5.3 million of which was considered unproductive (Green and Van Hooser 1983). This land has been reclassified into the 819 thousand acres of woodland, and into nonreserved timberland. The 17.7 million acres of unreserved timberland is considered suited for commercial timber purposes and roughly corresponds to the 13.5 million acres previously classed as commercial, nonreserved forest land. The important change, however, as mentioned earlier, is the inclusion of land that formerly would not meet the criteria of "commercial timberland" because of productivity.

Some 84 percent of the forest land belongs to the public . . .

As shown in the map contained in the pocket, inside back cover, about 84 percent of the forest land is publicly owned, and National Forests are the principal administrative agency. Over 70 percent of the timberland that is not reserved is on National Forests. Other public agencies (other Federal, State, and local government agencies) administer about 10 percent of the timberlands.

National Forests oversee most of it.

Forest industries and nonindustrial private owners have about 7 percent and 12 percent, respectively (fig. 2). The large number of private owners (about 37,600) makes it difficult to communicate forestry information of concern to them. Detailed data on State and privately owned forest lands have been published in an earlier report (Van Hooser and Green 1985).

About 19 percent of the timberland is held by 37,600 private owners.

All of the deferred timberland and most of the reserved timberland is on National Forests. Other public agencies, primarily BLM, account for 68 percent of the nonreserved woodland, and nonindustrial owners most of the rest of the woodlands.

[1]Many powerline lanes can be used for production of small products such as posts, corral poles, and Christmas trees.

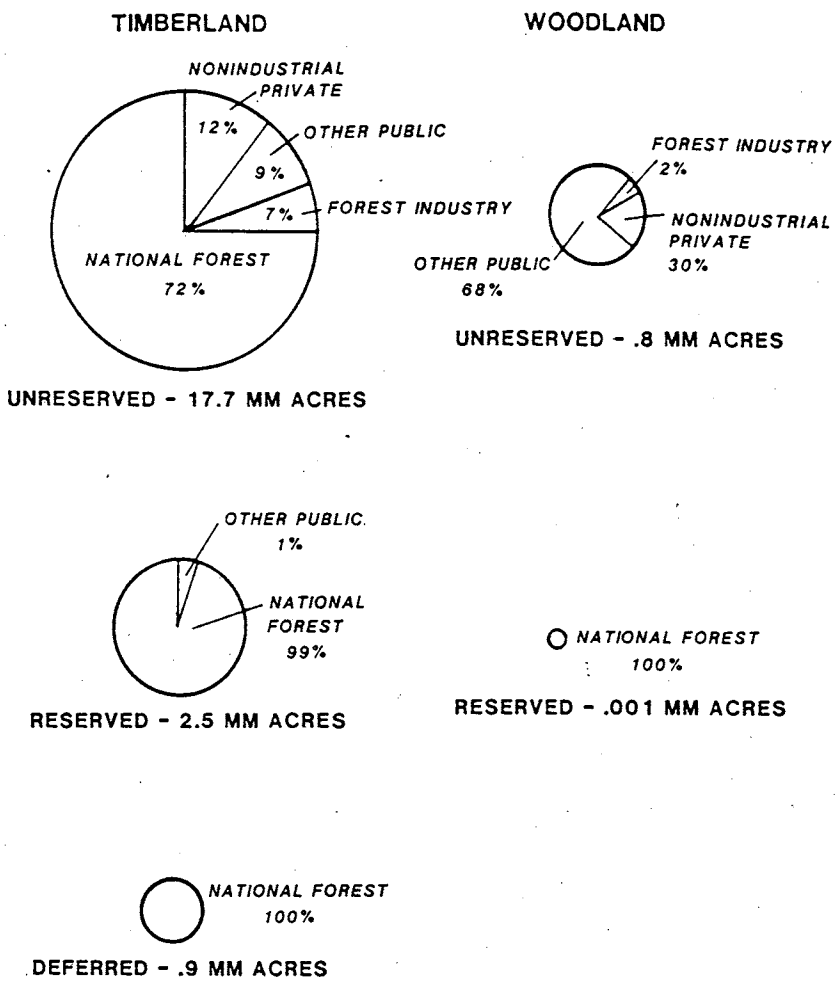


Figure 2—Area of timberland and woodland in Idaho by land class and ownership, 1981.

Pinyons, junipers, and their associates are the major woodland species.

Juniper and associates are by far the major woodland species. Rocky Mountain (*Juniperus scopulorum*) and Utah (*J. osteosperma*) junipers extend over 369 thousand acres. Western juniper (*J. occidentalis*) and pinyon/juniper mix account for another quarter million acres (fig. 3). The bulk of these woodland types is in public ownership. Mountain brush woodland and other hardwood types total about 138 thousand acres and are about evenly divided between public and private ownerships. These types occur on somewhat more moist areas and have more potential for grazing than do the dry juniper types. The most moist woodlands are in the riparian zone along streams and spring areas. These are vital to farm, ranch, and grazing operations and, as might be expected, are primarily in private ownership.

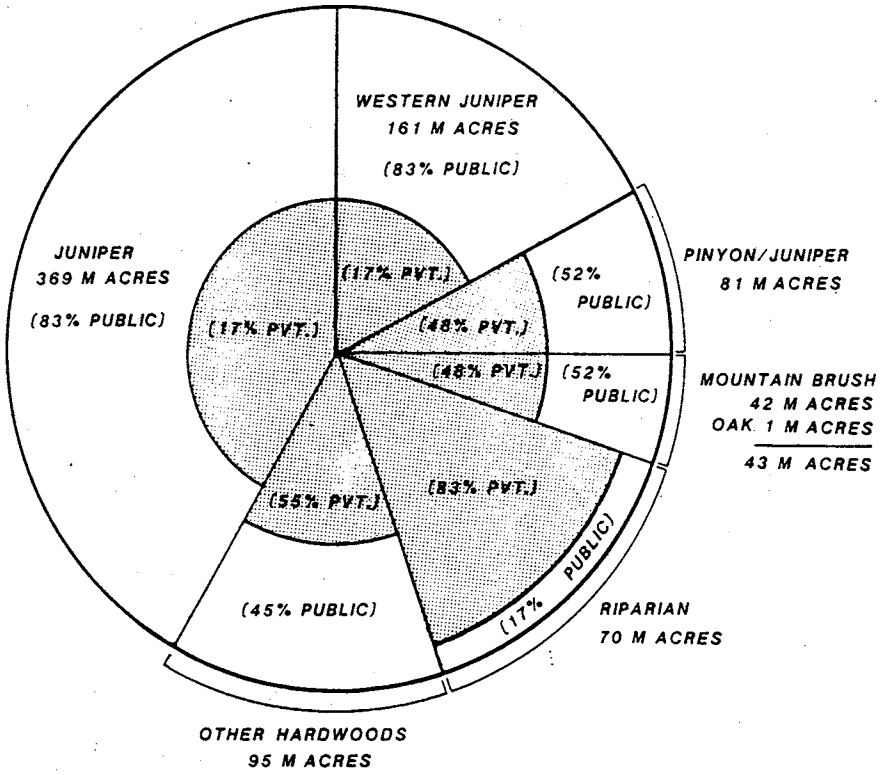


Figure 3—Area of woodland in Idaho by forest type and owner, 1981.

Timberland Types and Ownership

Five major softwood forest types make up 87 percent of the timberland.

The timberlands of Idaho have been classified by forest type based on the plurality of stocking—that is, the tree species that has the largest percentage of the basal area in the stand. This provides a good indication of the kinds of wood products growing on the area and also gives an indication of the type of forest management involved in harvesting. There are, however, a mix of tree species in most forest types, and habitat conditions also vary widely. So a given forest type may contain a variety of both timber and nontimber resources.

Douglas-fir—Douglas-fir (*Pseudotsuga menziesii*) is the single most extensive forest type, with over 7 million acres total, of which 5.8 million acres are nonreserved. This type is found throughout the whole State. In the north, with its generally lower elevations, Douglas-fir is usually found on south-facing and west-facing slopes. In the southern and eastern portions of the State it is usually the lowest elevation timber type, extending through the middle elevations. Commonly it is mixed with ponderosa pine (*Pinus ponderosa*) in the southwest (north of the Snake River) and with aspen (*Populus tremuloides*) in the eastern portions. About three-fourths of this type is on National Forest land; nonindustrial private owners account for about 13 percent.

Ownership class	Land class		
	Nonreserved	Deferred	Reserved
		Thousand acres	
National Forest	4,357.4	373.9	847.1
Other public	525.0		0.7
Forest industry	250.5		—
Nonindustrial private	712.8		—
Total	5,845.7	1,221.7	

Lodgepole Pine—Lodgepole pine (*Pinus contorta*) is the next most extensive type, covering nearly 4 million acres, and occupies two rather different niches in Idaho's forests. In the north it occurs primarily mixed among other forest types and indicates a past fire disturbance. Here it is a seral type—that is, lodgepole stands will usually be replaced by other species rather rapidly in the natural course of plant succession. In the great burn areas of northern Idaho, stands of lodgepole created by fire are so extensive and frequently so dense that the other successional species are slower in reclaiming the forest. In southern and southeastern Idaho, lodgepole grows in pure, extensive stands at high elevations. Here it is frequently near climax—that is, stands of lodgepole will generally succeed themselves, and only occasionally will alpine fir (*Abies lasiocarpa*) or Engelmann spruce (*Picea engelmannii*) be successful in replacing the lodgepole. Nearly a quarter of the lodgepole type is reserved or deferred.

Ownership class	Land class		
	Nonreserved	Deferred	Reserved
	Thousand acres		
National Forest	2,644.2	203.7	685.0
Other public	128.6		33.3
Forest industry	56.3		—
Nonindustrial private	191.0		—
Total	3,020.1	922.0	

Engelmann Spruce-Fir—The Engelmann spruce-fir type occupies over 3 million acres, about 15 percent of the State's timberland. It is the "picture postcard" type found at high elevations below the snowcapped peaks and surrounding mountain lakes, with the dark massive crowns of spruce and the needle-pointed crowns of its close associate, subalpine fir, and is almost synonymous with high-mountain recreation. These stands could also be called Idaho's lifeblood land because much of the State's precipitation falls in these high elevations, particularly the deep snowpack that feeds the irrigation ditches during the long, dry summers. Not surprisingly, most of this type is on the National Forests, and over 21 percent is reserved or deferred, indicating its general remoteness and history of little disturbance.

Ownership class	Land class		
	Nonreserved	Deferred	Reserved
	Thousand acres		
National Forest	2,247.4	128.5	542.7
Other public	102.4		—
Forest industry	100.4		—
Nonindustrial private	48.6		—
Total	2,498.8	671.2	

Ponderosa Pine—One of the most important commercial species in Idaho's forests, ponderosa pine (*Pinus ponderosa*) is found throughout the State at the lowest elevations of timberland growth, but the largest concentrations of ponderosa are in the southwestern part of the State (north of the Snake River) at low and middle elevations, often in association with Douglas-fir. The large, old-growth trees that develop yellow-red bark in large plates are often called "punkins" or "pickles" by loggers. Long a mainstay of the wood industry, only about 13 percent of the type is reserved or deferred. Growing as it does at lower elevations, the ponderosa pine type often provides grazing for livestock and vital winter forage and browse for big game animals.

Ownership class	Land class		
	Nonreserved	Deferred	Reserved
	Thousand acres		
National Forest	1,156.5	118.0	168.8
Other public	228.4		0.5
Forest industry	103.7		—
Nonindustrial private	417.8		—
Total	1,906.4	287.3	

Grand Fir—The grand fir (*Abies grandis*) type is limited primarily to the area north of the Snake River and contains some of the most productive lands for timber crops. It occupies much of the midelevation range and is found on sites that are predominantly fairly moist but will tolerate some fairly dry and quite moist sites. Pure stands of grand fir are not the rule. Usually, this type has a mix of species—almost any timber species can be found in the grand fir type. Only about 10 percent of the type is reserved or deferred. The forest industry owns about a fifth of the grand fir type. This is the largest single forest type in forest industry ownership.

Ownership class	Land class		
	Nonreserved	Deferred	Reserved
	Thousand acres		
National Forest	922.3	60.6	116.3
Other public	218.1		—
Forest industry	364.6		—
Nonindustrial private	262.1		—
Total	1,767.1	176.9	

But four other conifers are economically significant.

Other Conifers—The five forest types discussed above make up nearly 87 percent of the State's forest land. Although the other conifer types individually occupy less than 1 million acres each, several are extremely important in the timber economy. Idaho (western) white pine has long been a prized species, used for various specialty products that require easily worked wood. Western redcedar (*Thuja plicata*) provides a number of unique durable products such as sawn siding and split products such as shakes and posts. Larch (*Larix occidentalis*) and hemlock (*Tsuga heterophylla*) are staples in the dimension lumber market. Often these four species, along with grand fir, are found growing together, particularly on moist sites, so the type classifications should be interpreted as indicating a generous mix of species in any of these types. Forest industry owns over a third of the western redcedar type, but the other types are predominantly on National Forest land.

Aspen and cottonwood are the only hardwood types.

Hardwoods—The aspen and cottonwood types are the only hardwood timber types. A rather disproportionate amount of these types is in private ownership: 41 percent compared to only 18 percent of all timberlands in private lands. Commonly, aspen and cottonwood (*Populus* L.) are at lower elevations and provide significant grazing and browsing for both livestock and wildlife.

Most of the less extensive types (the four conifer types discussed above and the hardwood types) are nonreserved timberlands. Detailed data on status and ownership are given in the appendix.

THE TIMBER RESOURCE

The timber resource—the amounts, kinds, and availability for commercial use—continues to be a prime focal point of interest in Idaho's forest lands. While other resources of the forest have experienced rapid growth in demands placed on them and received increasing management attention, timber harvesting remains at the center of concern for forest land managers. Timber harvesting and processing are the foundation

of economic activity in northern Idaho and several localized areas elsewhere. Furthermore, access to the forest for effective management for most other resources is through roading and other activities tied to level of harvest.

This section focuses on those characteristics of the forest of particular concern to growing and harvesting timber crops.

Stand-Size Classes

The timber resource is predominantly sawtimber stands...

Sawtimber stands occupy over two-thirds of Idaho's timberlands. Poletimber accounts for about 15 percent of the area, seedling-sapling stands about 12 percent, and nonstocked areas just over 5 percent. These proportions are about the same on all ownerships, although forest industry has a slightly higher percentage of sawtimber and lower percentage of poletimber. Other public lands have 15 percent nonstocked lands, three times the average for all owners (fig. 4). About 3.6 million acres of National Forest land previously excluded from the commercial forest land class (because of low productivity) have not been analyzed as to stand size and so are not included in the data (table 10 in appendix).

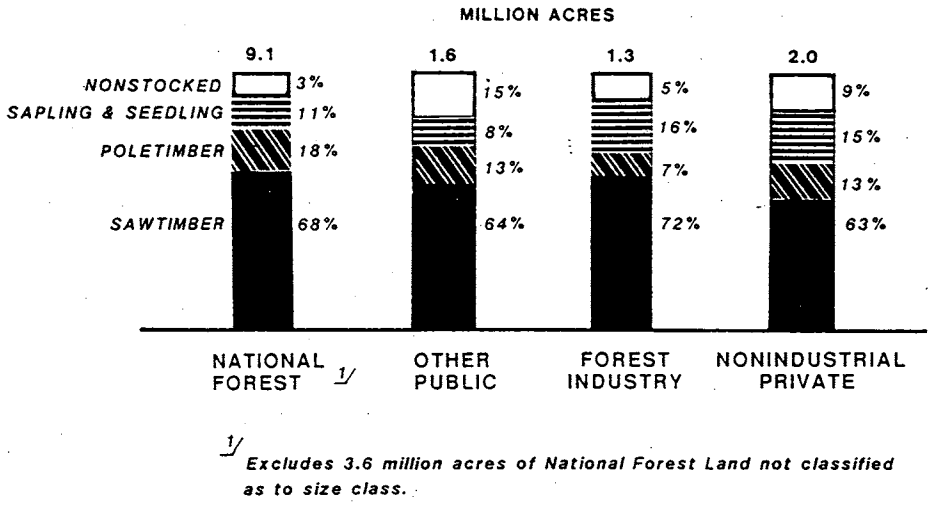


Figure 4—Area of timberland in Idaho by stand size class and owner group, 1981.

and 77 percent of the volume is in sawtimber trees.

Sawtimber size trees (9 inches d.b.h. and larger for softwoods, 11 inches and larger for hardwoods) account for over three-fourths of the total cubic volume of wood on Idaho timberlands. Of the total volume, 77 percent is sawlog material (see sawlog definition), 7 percent is the upper stem portion of sawlog trees, 15 percent is in poletimber size trees, and the remaining volume is in cull or salvable dead trees (fig. 5).

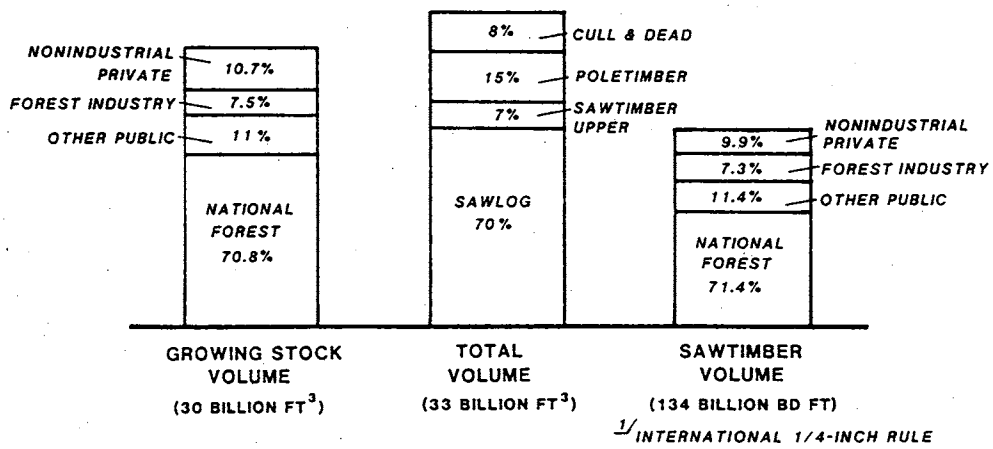


Figure 5—Net volume of growing stock and sawtimber on timberland in Idaho by owner group and class of timber, 1981.

Volume by Owner

Total volume is 30 billion cubic feet... and 70 percent is on National Forests.

Of the 30 billion cubic feet of wood that qualify as growing stock (see definitions), just under 71 percent is National Forest timber and just over 7 percent forest industry. Other public and nonindustrial private owners each have about 11 percent of the growing-stock volume. Looking just at sawlog volume, the ownership is distributed about the same as all growing stock, with slightly more in National Forests and slightly less in nonindustrial private, on a percentage basis (fig. 5).

Volume by Species

Over 25 percent of the volume is Douglas-fir.

Douglas-fir accounts for over a fourth of the growing-stock volume on Idaho timberlands (table 18 in appendix). Grand fir (including a small volume of white fir) accounts for just over 14 percent, lodgepole pine for about 13 percent, and ponderosa pine 9.6 percent. All other species account for less than 7 percent individually. The species groupings in table 3 give a rough idea as to both values and accessibility.

Table 3.--Net growing-stock volume and percent of volume on timberland by species

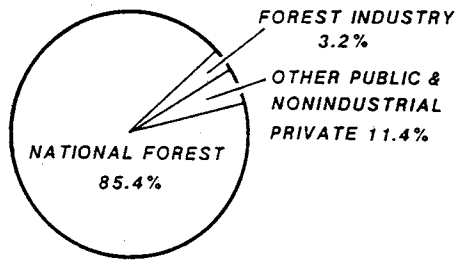
		Volume, million cubic feet	Percent of volume
Higher elevation species			
Lodgepole pine		4,079.3	13.3
Whitebark pine and limber pine		153.4	.5
Engelmann spruce		2,066.9	6.8
Subalpine fir		2,012.0	6.6
	TOTAL	8,311.6	27.2
Middle and lower elevation species			
Douglas-fir		8,547.3	27.9
Ponderosa pine		2,927.6	9.6
Western white pine		1,323.3	4.3
Western larch		1,422.8	4.6
Grand fir and white fir		4,336.9	14.2
Western hemlock		1,403.3	4.6
Western redcedar		1,913.4	6.3
	TOTAL	21,874.6	71.5
Hardwoods			
Aspen		276.4	.9
Cottonwood		123.9	.4
	TOTAL	400.3	1.3
All species	TOTAL	30,586.5	100

About 72 percent of the total is at middle and lower elevations.

For the most part, the middle elevation and lower elevation species are the more valuable, generally have lower costs for harvest, and therefore represent the most stumpage value to the land manager. This is reflected in the ownership of these species groups. Forest industry owns about 9 percent of the middle elevation group but only 4 percent of the hardwoods and 3 percent of the high elevation group. National Forests have 85 percent of the volume of high elevation species. Other public and nonindustrial private owners have nearly 79 percent of the hardwood growing-stock volume (fig. 6). Growing-stock volumes by species and ownership are presented in detail in table 19 in the appendix. The pattern of ownership and species is about the same for sawtimber as for all growing stock (table 20 in appendix).

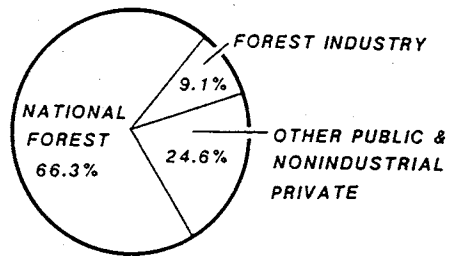
HIGHER ELEVATION SOFTWOOD SPECIES

LODGEPOLE PINE
ENGELMANN SPRUCE
SUBALPINE FIR
WHITEBARK PINE



MID TO LOWER ELEVATION SOFTWOOD SPECIES

DOUGLAS-FIR
PONDEROSA PINE
WESTERN WHITE PINE
WESTERN LARCH
GRAND FIR-WHITE FIR
WESTERN HEMLOCK
WESTERN REDCEDAR



HARDWOOD SPECIES

ASPEN
COTTONWOOD

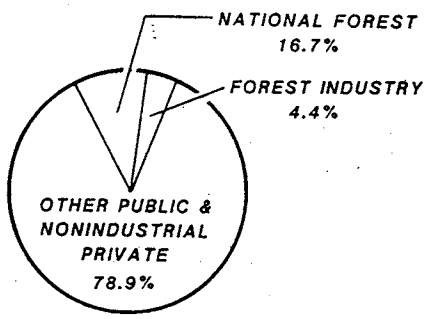


Figure 6—Occurrence of forest types in Idaho by elevational range and percentage of growing-stock volume by owner group, 1981.

Volume by Diameter Class

About half of the total volume is in small-sawlog size trees.

Tree size is an important consideration in harvesting and utilization. For the softwoods, almost half the growing-stock volume is in trees in the 10- to 18-inch d.b.h. classes (9.0 to 18.9 inches), about a third in the 20-inch and over class, and the remainder in pole-size trees (table 4, and table 21 in appendix). For softwood sawtimber only, just over half is in the 10- to 18-inch categories, the remainder in 20-inch and over. These categories give some indication of the type of use potential and processing involved. Pole-size trees (5.0 to 8.9 inches) provide posts, poles, and similar roundwood products; the larger size poles provide houselogs, converter poles, and to some extent are used as small sawlogs, particularly where high-speed chipping headrigs produce squared cants at low cost. The 10- to 18-inch group can be considered as small sawlogs and are commonly processed on high-speed headrigs such as chipping headrigs or multiple saw headrigs that saw the entire log at one pass.

Table 4.--Softwood volume by diameter class

Diameter class	Softwood growing stock		Softwood sawtimber	
	Billion ft³	(Percent)	Billion bd ft	(Percent)
6 to 8 inches	4.7	15.6	--	--
10 to 18 inches	14.7	48.6	72.0	54.1
20 inches and over	10.8	35.8	61.1	45.9
TOTAL	30.2	100	133.1	100

Larger trees (greater than 20 inches d.b.h.) are more valuable.

For logs over 20 inches d.b.h., potential for recovering higher grade and more valuable lumber is such that it often pays to break down the log on a headrig that permits turning the log to maximize grade recovery. Of course, logs may not always end up at the mill that exactly matches the ideal processing, but these diameter groups give a general idea of the potential for Idaho logs. Plywood mills would also generally prefer the larger size logs for grade and economy of production, but it is technically possible to peel fairly small logs down to a 3-inch core.

Tree size varies by species.

As might be expected, considerable variation exists in diameter distribution among species. Figure 7 shows volume by diameter classes for three major species—lodgepole, ponderosa, and Douglas-fir. For Douglas-fir, the biggest volumes are in the 12- to 18-inch classes, with an additional concentration in the large trees, 30 inches and over. In contrast, lodgepole pine volume is nearly all in the under 14-inch diameters with virtually no large-diameter trees. And ponderosa has a fairly even distribution of volumes across diameters, except a large proportion, over a third of the sawlog volume, in trees 30 inches and larger. Western redcedar also tends to have a larger proportion of the volume in large trees, while subalpine fir tends toward smaller trees similar to lodgepole pine. For the other softwood species, the volume distribution is most similar to Douglas-fir—that is, concentrated in the "middle" diameters 12 to 18 inches or so. (Detailed data on number of trees and volumes by diameters are in tables 16, 21, 22, and 23 in appendix.)

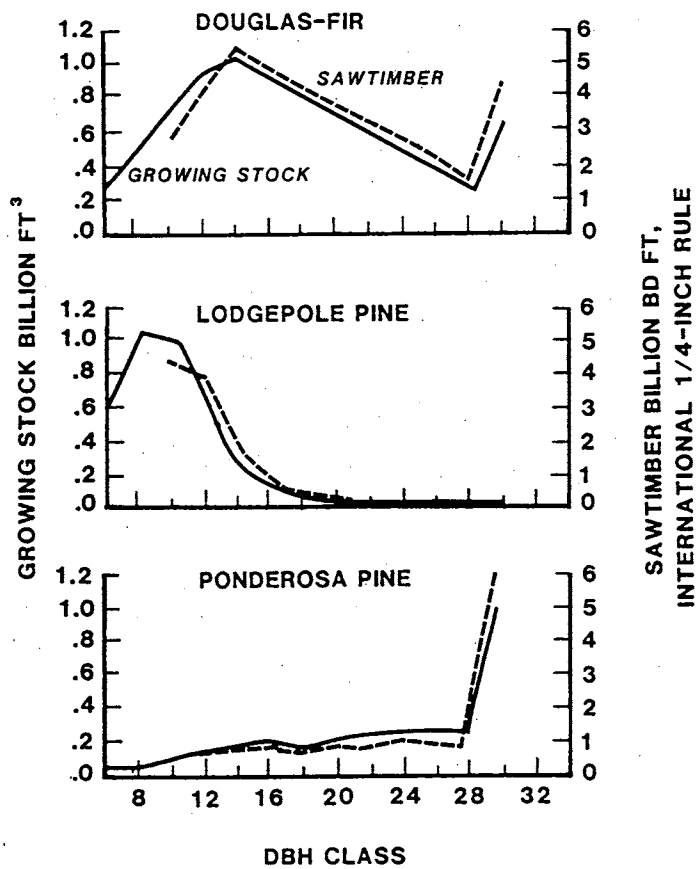


Figure 7—Distribution of growing-stock volume by diameter class for three major timber species in Idaho, 1981.

CHANGES IN IDAHO FOREST LAND

Idaho's forest lands are undergoing changes continually. In the beginning of this report changes in land status and classification were noted. While these could be viewed as only "paper" changes, the status of lands can have profound consequences as far as use and management are concerned. In addition are biological changes. This section discusses these changes—growth, mortality, and removals through harvest or other management activity.

Changes at a glance (1980).

Growth, Mortality, and Removals

Gross growth was 763 million cubic feet, but mortality and removals held the net increase in inventory to 281 million cubic feet.

Changes in Idaho's forest lands are summarized in table 5. Total growth was about 0.7 billion cubic feet of growing stock, and about 3.4 billion board feet of sawtimber alone. Through mortality and removals, the net change in inventory was a small net increase of about 0.3 billion cubic feet for all growing stock, and about 0.8 billion board feet (International ¼-inch rule) of the sawtimber component. Softwoods account for most of the harvest. Removals for softwood are about three times as much as mortality, but mortality is about triple the harvest for hardwoods. Hardwood volume is increasing at a much faster rate than is softwood, based on the change in inventory, mostly because of the small proportion of the inventory being harvested.

Table 5.--Summary of components of change, Idaho timberlands, 1980

Component	Growing stock			Sawtimber		
	Total	Softwood	Hardwood	Total	Softwood	Hardwood
	- - Million cubic feet - -			- - Million board feet - -		
Gross growth	763.1	742.6	20.5	3,448.7	3,415.4	33.3
Mortality	115.0	112.0	3.0	512.9	508.6	4.3
Net growth	648.1	630.6	17.5	2,935.8	2,906.8	29.0
Timber removal	367.2	366.1	1.1[1]	2,115.7	2,109.2	6.5
Net change	+280.9	+264.5	+16.4	+820.1	+797.6	+22.5
Change as percent of inventory	+ 0.9	+ 0.9	+ 4.1	+ 0.6	+ 0.6	+ 2.9

[1]Includes minor volumes of limber and whitebark pines.

Components of change were opposite on public and private lands.

These changes, however, are not equal for all ownerships. On public lands, mortality is fairly large in relationship to growth, and removals are considerably less than net growth (fig. 8). Private lands show a different picture. Mortality is relatively low on industry lands, and on both industry and nonindustrial private lands removals are greater than net growth. In the case of sawtimber, industry removal is about twice as much as net growth. This indicates differences in management objectives, types of timber and their accessibility, and constraints placed on some public lands. In general, growth and removals will ultimately need to be in balance, but the transition from a virgin, unmanaged forest to a long-term balance may take decades to achieve.

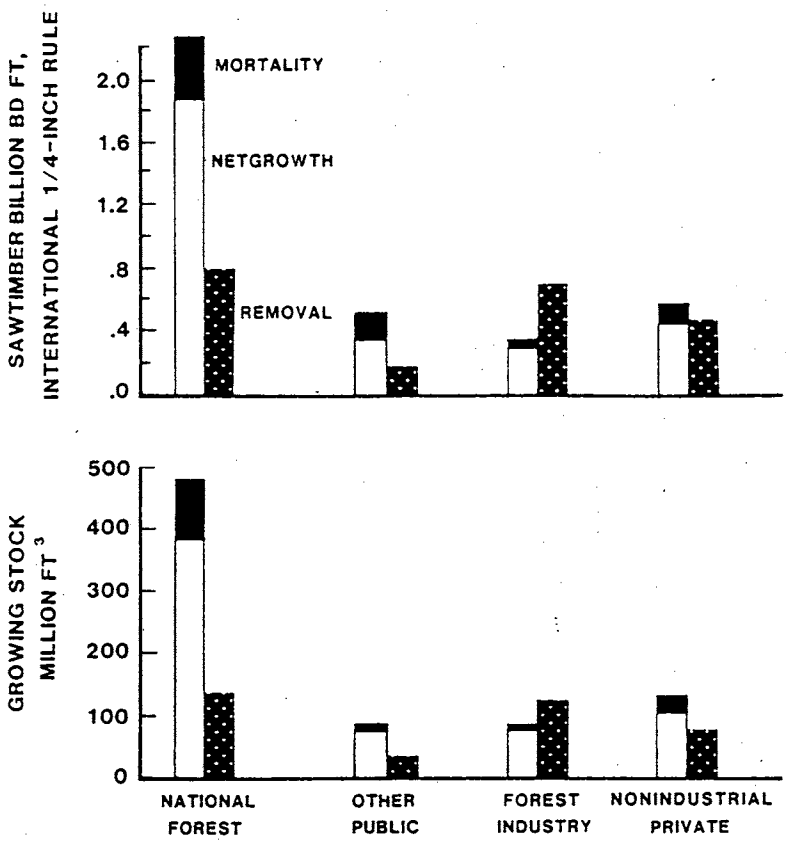


Figure 8—Mortality, net growth, and removals of growing stock and sawtimber volume in Idaho by owner group, 1980.

Management objectives affect the kinds and rates of change between owner groups.

The inventory of sawtimber on public lands is increasing at just over 1 percent per year, nonindustrial private is decreasing by a fraction of a percent, and forest industry is decreasing by about 4.5 percent (table 6). Several reasons account for this situation, including a shift to more private land harvest during the late 1970's when harvest on National Forests was reduced; also, corporate ownerships may have different criteria regarding rotation ages and harvesting of mortality-prone and slow-growing, old-growth stands.

Table 6.--Net growth, removal, and change in sawtimber by ownership, 1980

	National Forest	Other public	Forest industry	Nonindustrial private
	- - - - - - - - - - - - Million board feet - - - - - - - - - - - -			
Net growth	1,866	377	263	429
Removal	790	186	699	441
Net change	+1,076	+191	-436	- 12
Change as percent of inventory	+ 1.1	+ 1.2	- 4.5	- 0.1

Causes of Mortality

Insects, disease, and weather were the major causes of mortality.

Although wildfire is the most spectacular killer of trees, two "silent killers," diseases and insects, take a far greater toll and account for well over half the cubic volume of growing-stock mortality. Because many destructive agents often attack trees in concert or in succession, it is often difficult to identify the actual causal agent. When the primary cause of death cannot be precisely determined, it is listed as unknown:

Cause of death	Percent of mortality
Insects	19.2
Disease	34.3
Weather	14.3
Suppression	4.0
Logging	1.7
Fire	0.2
Unknown	26.3

It is likely that much of the mortality in the "unknown" category was precipitated by insects and diseases. In general, mortality is distributed among species in about the same proportion as their volume. However, there are several species for which this is not true:

Species	Percentage of growing stock volume	Percentage of mortality
Ponderosa pine	9.6	5.7
Western white pine	4.3	14.8
Subalpine fir	6.6	13.5

Detailed data of mortality by species and diameter are presented in table 33 in the appendix.

Productivity

Productivity of forest industry land is greater than on National Forests...

Although Idaho has some of the most productive forest land in the Nation, the productive potential of Idaho forest land averages about 82 cubic feet per acre per year and ranges from 56 cubic feet on National Forests to 107 cubic feet on forest industry land (tables 10 through 14 in the appendix). This potential is based on estimated cubic foot growth of fully stocked natural stands. The current annual net growth of timberland varies from about 42 cubic feet per acre per year on National Forest land to about 60 cubic feet on forest industry land (fig. 9), averaging about 46 cubic feet per acre over all owner groups. This is little more than half the productive potential of the land.

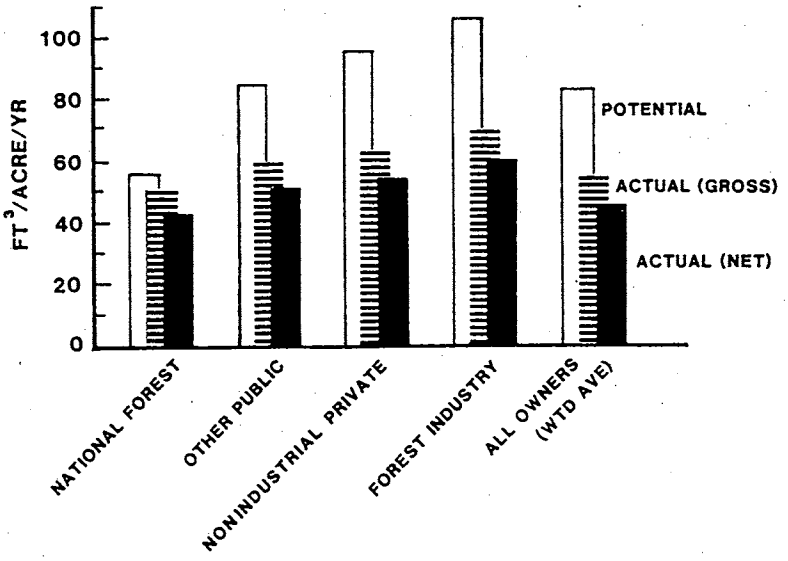


Figure 9—Potential, gross, and net annual growth of timberland in Idaho by owner group, 1980.

but only half the potential is being realized.

Note that this actual growth is **net** growth—that is, total volume gained through increment on live growing-stock trees plus the ingrowth of small trees into growing-stock size, minus the losses of mortality and the volume in trees that become cull. The losses average about 8 cubic feet per acre. If only the actual gross growth—the amount of new wood grown—is considered, the growth picture is somewhat better, averaging about 66 percent of the potential. This may be an important consideration depending on whether the interest is in the change in the size of the woodpile or in the extent to which the growth potential of the timberland is being realized.

Removals

Sawlog size trees are still emphasized in harvest.

Harvest for pulpwood has been gaining on sawlogs and veneer logs.

Sawlogs have historically been the most important product harvested from Idaho forest lands. In 1980, sawlogs accounted for 59 percent of the total removals (fig. 10). Veneer logs accounted for another 12 percent. These two products are the backbone of the wood products industry in the State, but pulpwood harvest has grown to a sizable volume, accounting for 14 percent of the removals. Miscellaneous products such as cedar products, poles, and houselogs are often valuable on a cubic-foot basis, but they accounted for a relatively small volume. Over 10 percent of the removals from growing stock is left as logging residues—that is, within the definition of growing-stock volume, but not suited or removed for products.

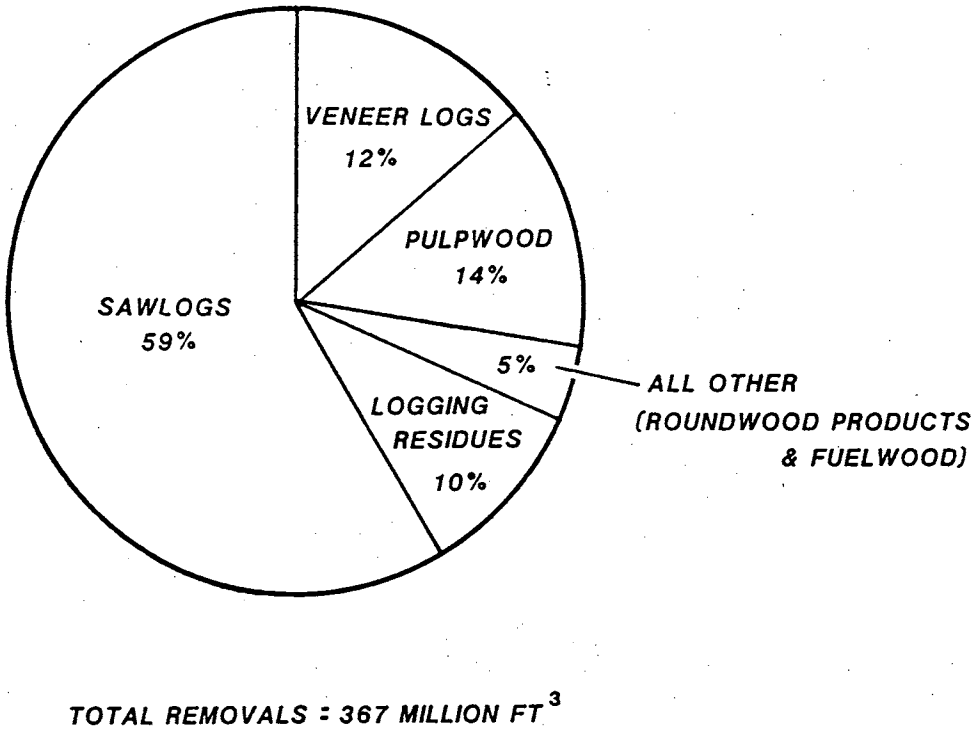


Figure 10—Total removals in Idaho by type of product, 1980.

The various ownerships differed in types of product removals. On National Forests, nearly three-fourths of the removals were for sawlogs and just over 6 percent for veneer logs. In contrast, forest industry land removals were less than half (45 percent) sawlogs, but 22.4 percent veneer logs. Forest industry also had the greatest proportion of pulpwood removals, 18.8 percent.

Economic necessity has diverted more sawlogs to veneer mills and pulp and paper plants.

A similar pattern is reflected in sawtimber removals. Forest industry used more of the sawlog volume removed for both veneer logs and pulpwood than the average for all owners. The increases in pulpwood harvest and use of sawtimber trees for pulpwood in 1980 were largely the consequences of the economic down-turn that began in late 1979. Mill closures and curtailed production dried up the supply of mill residues upon which pulp and paper companies relied as source of raw material. Round pulpwood harvest and the diversion of sawtimber trees from the headrigs to the chippers covered the shortage. Detailed data on removals are in tables 39 through 44 in the appendix.

Assessing Changes and Trends

Over the past decade the increase in growing-stock inventory on National Forests...

has compensated for a substantial reduction on forest industry and other lands...

resulting in a slight increase in standing volume.

The above discussions and the data have outlined the current status of Idaho's timber resource as of 1980, the base year for current inventory data. As pointed out early in the report, there have been some changes in the definitions and classifications of forest lands in the State. Because of this, direct comparison with previous data is not possible. However, it is of interest to look in rather broad terms how current status compares with the previous status, particularly with regard to inventory and changes in volume of timber for commercial use.

Table 7 shows area, volume, and volumes per acre for the entire State and for National Forests and forest industry lands. These two ownerships have historically provided most of the commercial harvest, and most interest on future harvest centers around levels of output for these two owners. In 1980 the land considered the timber growing and harvest base increased by over 3 million acres with the addition of lower productivity land into the timberland category. Compared to 1970, there is a slight increase in growing-stock volume from 2,077.7 cubic feet per acre to 2,183.8 cubic feet per acre overall. National Forest lands increased by about 400 cubic feet per acre, forest industry decreased by about 1,200 cubic feet per acre, and all other ownerships decreased by about 300 cubic feet per acre.

Table 7.--Comparison of timberland area and growing-stock volume, 1970 and 1980

Item	Commercial forest land, 1970	Timberland, 1980
	Thousand acres	
Area		
Total	14,196.9	14,006.3 (+3,654.3)
NF	9,735.8	9,153.2 (+3,654.3)
Forest industry	946.7	1,178.1
All other	3,514.4	3,765.0
	Million cubic feet	
Growing stock inventory		
Total	29,497.3	30,586.5[1]
NF	19,269.5	21,655.9[1]
Forest industry	2,940.3	2,284.5
All other	7,287.5	6,646.1
	Cubic feet	
Growing stock volume per acre		
Total	2,077.7	2,183.8[1]
NF	1,979.2	2,365.0[1]
Forest industry	3,105.8	1,939.1
All other	2,073.6	1,765.2

[1]3,654.3 thousand acres of National Forest not included in computing the volume or volume per acre figures.

In terms of changes in growing stock, mortality decreased by half, net growth decreased slightly, and removals remained about the same (table 8). Converting these totals to per-acre figures, mortality has decreased by nearly half, net growth per acre increased slightly, and, again, removals are virtually the same.

Even though, because of changes in definitions, the 1970 and 1980 data are not strictly comparable, in general terms they do reflect gradual change in the forest lands used for timber harvesting. This is because harvest is gradually converting older stands with high mortality rates to younger, more productive stands while still maintaining growing-stock levels in the State.

Data from two points in time give reasonable growth and mortality trends.

The inventories used in developing these analyses are undertaken at approximately 10-year intervals. Therefore, the data pertain to a given year. While growing-stock inventories, mortality, and net growth tend to change rather slowly over time, the data can probably be considered a reasonable picture for the whole decade. However, annual harvest levels can fluctuate widely depending on markets for wood products and on other factors. Therefore, it is of interest to know how closely the periodic estimates of removals compare with year-to-year harvest trends.

Table 8.--Comparison of growing-stock changes, 1970 and 1980

Item	1970	1980
	- - - - - - Million cubic feet - - - - - -	
Mortality	201.8	115.0
Net growth	503.0	648.1
Removal	357.2	367.2
	- - - - - Cubic feet per acre - - - - - -	
Annual mortality	14.85	8.21
Annual net growth	35.43	46.27
Annual removal	25.16	26.22

Interim removals data indicate a general trend that results in comparable inventory volume change.

Figure 11 shows 1970 and 1980 removals of growing stock compared with harvest from 1969 to 1984 (from unpublished records compiled by USDA Forest Service, Northern Region, Missoula, MT). The annual harvest data are based on log volumes received at the mill and are reported in Scribner log scale. The 1970 and 1980 removals are shown in both International ¼-inch rule and Scribner scale. Because log receipts don't include growing stock that was not taken from the forest to the mill (damaged trees and so on), the total removals from inventory are slightly higher than reported harvest for the corresponding year. For the period 1970 to 1980, the removals reported from survey data reflect fairly closely the harvests for the intervening years. However, depressed wood markets in the early 1980's dropped harvest levels well below the previous 10-year period.

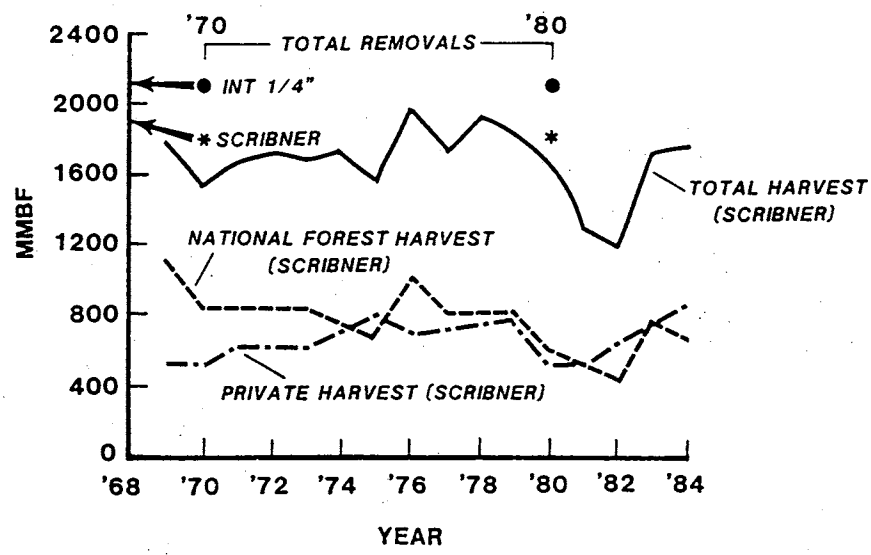


Figure 11—Trends and changes in sawtimber harvest and removals in Idaho, 1969 to 1984.

Figure 11 also shows annual harvest for two owner groups, National Forest and private. Data on harvests do not separate forest industry from other private owners, but usually industry accounts for half or more of the private land removals. For both

National Forests and private lands, removals fluctuated considerably from year to year. But from 1969 to 1984 the general trends were for removals from National Forests to decrease and private land removals to increase.

Finally, another perspective on growth and changes in Idaho forest land can be gained by comparing estimated rates of change that net growth and removal data indicate with the actual changes in inventory. For the two inventory periods, estimated growth and removals were:

	1970	1980
Net annual growth per acre, cubic feet	35.43	46.27
Annual removals per acre, cubic feet	−25.16	−26.22
Net annual change per acre, cubic feet	+10.27	+20.05

Growing-stock levels are slowly increasing on the average acre.

From 1970 to 1980, the estimated increase in growing stock inventory was 106.1 cubic feet per acre (2,077.7 to 2,183.8 from table 7). On an average annual basis, this is about 10.6 cubic feet per acre per year, slightly above the estimated net change per year for 1970 but less than the change indicated for 1980.

NONTIMBER USES OF IDAHO FOREST LAND

Nontimber values and uses in Idaho's forests are high.

While the management and harvest of timber is the most common use of Idaho's forest resource, forested lands provide many other outputs and benefits, both commodity and noncommodity. The management and uses of these nontimber resources are complex and are discussed at length in the various plans and use reports of the forest land management agencies and individuals involved. Our intent here is to briefly present a picture of current use levels for these resources to provide some perspective on how they fit into the total forest resource picture.

Grazing

Forest land in southern Idaho is a more important grazing resource than the more extensive and dense timber stands in the north.

The history of grazing in Idaho is similar to most of the West. In the early days of open range, cattle and sheep were grazed extensively, and overgrazing often occurred. As the land was brought under management, grazing levels were reduced. In some areas range rehabilitation was undertaken to reduce erosion and improve range productivity. In general, grazing on forest land is inverse to timber growing. In the southern portion of the State, forest and timberlands are often in patches and stringers interspersed with grasslands and brush, and grazing is often the most important use of the forest. In the northern part of the State where continuous stands of heavy timber predominate, grazing is relatively minor, although natural openings, high-altitude meadows, and areas converted to pasture lands after timber harvest are of local importance.

Forest land contributes significantly to the livestock industry in the State.

Complete data on the portion of the State's grazing and livestock industry that is tied to forest land are not available, but historically the Forest Service lands have provided a large portion of what would be considered forest land grazing. During the past 15 years or so total grazing expressed in animal unit months (AUM's) increased by about a quarter, from about 650,000 AUM's to over 800,000 AUM's in recent years (fig. 12). Most of this change has been an increase in both number and AUM's of cattle grazing. Grazing of sheep and other major livestock has fluctuated over the years, but AUM's have increased. Number of sheep grazing has actually decreased, which indicates that while fewer sheep are being run on forest land, they are grazing for a longer period. These data should be considered only indicative of trends because changes in reporting and data gaps make precise comparisons of years difficult. Horse and burro grazing is a minor part of the grazing use, and data on these have not been compiled until recent years. In 1984 about 15,000 domestic horse and 60 wild horse and burro AUM's were recorded for National Forests.

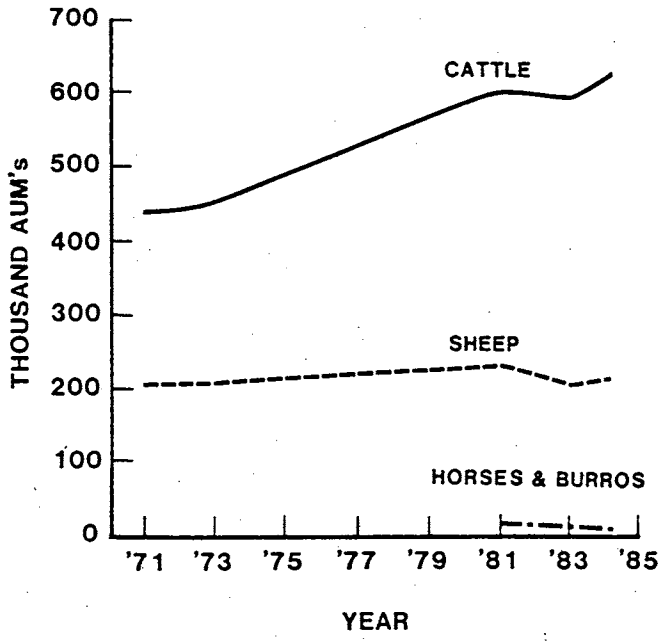


Figure 12—Grazing levels in animal unit months on National Forests in Idaho, 1971 to 1985.

About 34 million acres of Idaho lands are grazed (Pizzadili and McKetta 1979). National Forest grazing land accounts for about 12 million acres, BLM about 11 million acres, and grazing on forested lands of private owners about 0.8 million acres. It is apparent that forest lands make an important contribution to the livestock industry.

Wildlife

Wildlife rely heavily on the forest land for food and cover, particularly on the National Forests.

An important use of forest land is providing food and cover for wildlife. One recent report indicated about 1.2 million AUM's of wildlife use on Federal lands and about 0.9 million on National Forests. Forest-related wildlife, particularly deer, elk, and moose, derive from 60 to 90 percent of the total AUM's from these Federal lands (Pizzadili and McKetta 1979).

Water and Soil

Management of forest resources is designed to protect the land base and water quality...

As in most Western States, a large part of Idaho's water originates in the mountainous forested areas. Foresters are learning more and more about how harvesting practices can affect water yield, timing, runoff, etc. (Cline and others 1977). However, any large-scale actual manipulation of water by forest management is probably not in the immediate future. What is of immediate concern is the effect of logging, mining, and attendant road building on water quality and sedimentation, especially in the batholith area of central Idaho (Platts and others 1979; Snyder and others 1975).

but increase the cost of timber.

Logging several decades ago, without any special efforts to reduce erosion, resulted in substantial silting in spawning streams for salmon and steelhead trout. Research and management efforts have restored some of the damaged areas, and harvesting operations now are designed to minimize erosion and silting. Recent studies indicate that two-thirds of the timber sales in Idaho's National Forests have modified layout, road design, and construction to protect soil and water, and these measures add an average of several dollars per thousand board feet in logging costs (Schuster and others 1984; Benson and Niccolucci 1985).

Mining

Historically, gold and silver mining paved the way for development and settling of Idaho. Many small mines flourished a short time. A few have survived and grown. Remnants of mines and exploration holes can be found in even remote parts of the forested lands of central and northern Idaho.

The value of minerals underlying forest lands is enormous...

and their development is carefully planned to avoid major negative impacts.

More recently, phosphate mining and exploration for oil in the overthrust belt have shifted much attention to the forests of southeastern Idaho. While drilling, mining, and related activities don't have much direct impact on the forest in terms of acres, of concern are the road developments and impacts of mines, tailings, and facilities on nontimber forest resources and uses such as wildlife, landscape, and recreation. National Forest managers have taken these into account in forest planning efforts, and guidelines for future activities, plus rehabilitation for some past activities, are aimed at minimizing negative impacts of mining. (For example, see Caribou National Forest and Curlew National Grassland Land and Resource Management Plan, Caribou National Forest, Pocatello, ID, 1985.)

Recreation

Forest-related recreation is big business.

Outdoor recreation has grown steadily over most of the past 2 decades, and much of this recreation is on forest land. Recreation visitor data are not usually kept separately for forest land, but on three major public ownerships over 13 million visits were counted in 1981 (fig. 13), and much of this involved forest-based recreation.

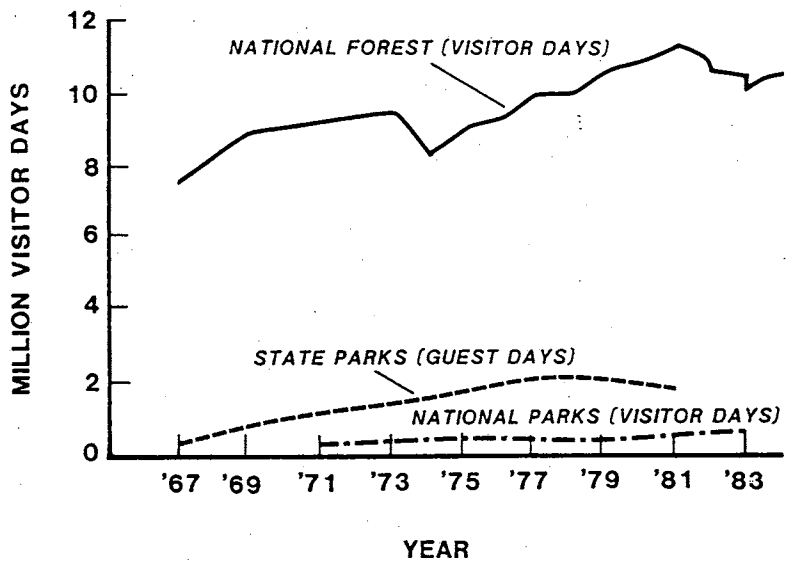


Figure 13—Recreation visits on three major public ownerships in Idaho, 1967 to 1983.

The most detailed data on recreation visits are kept for National Forests. In 1984 Idaho National Forests reported about 10.5 million recreational visitor days (RVD's) (one visitor day equals 12 hours of use by one person) (USDA-FS 1985). Visitors engaged in the following activities:

In 1984 the National Forests alone hosted 10.5 million RVD's.

	Million visitor days
Mechanized travel	2.3
Camping	2.6
Hiking (including climbing)	.4
Picnicking	.3
Hunting	.8
Fishing	.8
Snow sports	.5
Other	2.8
Total	10.5

The "go togethers" of camping, hunting, and fishing account for about 40 percent of the recreational activities. In its 1983 State Comprehensive Outdoor Recreation Plan (SCORP) the Idaho Department of Parks and Recreation estimated recreation use for 1980 in numerous activities, including several that are fairly comparable to National Forest statistics. Although the definitions of "visits" are somewhat different, in several categories National Forests provide a sizable portion of the total activity:

	Million visitor days		
	SCORP	NF's	NF percentage
Camping	9.0	2.6	32
Hunting	4.7	.8	17
Mechanized travel (driving)	22.8	2.3	11
Eight "forest-based" activities, total	69.3	10.5	15

Because SCORP counts an activity for any part of a day, the National Forests probably account for an even greater share of the recreation than this rough comparison indicates.

The growth in recreation use of forests led to increased facilities, budgets, and management on the part of major forest land owners, particularly in the 1960's when many new camping and other visitor facilities were built. Recreational use has also led to modification in timber harvesting to accommodate and protect the forest recreation resource.

Still debated: wilderness vs. commodity uses.

Wilderness areas have been a point of particular interest (and frequent controversy) in forest land use and management. Although wilderness areas are established for a variety of purposes, debate over wilderness designations usually brings in recreational use, probably the most evident wilderness use. Historically, Idaho has had extensive "primitive" areas, and in 1980 formal designation of some large tracts such as the Frank Church-River of No Return Wilderness tripled the formal wilderness acreage. Apparent wilderness visits have increased steadily, but because of the changes in wilderness status, the data on visits need to be carefully interpreted. Since 1965 the area of and visits to wilderness have increased sharply (fig. 14). The significance of the wilderness areas to the timber resource lies in the fact that when the formal designation is established there is a better picture of the remaining timberland base on which management and harvest activities can be planned with more certainty.

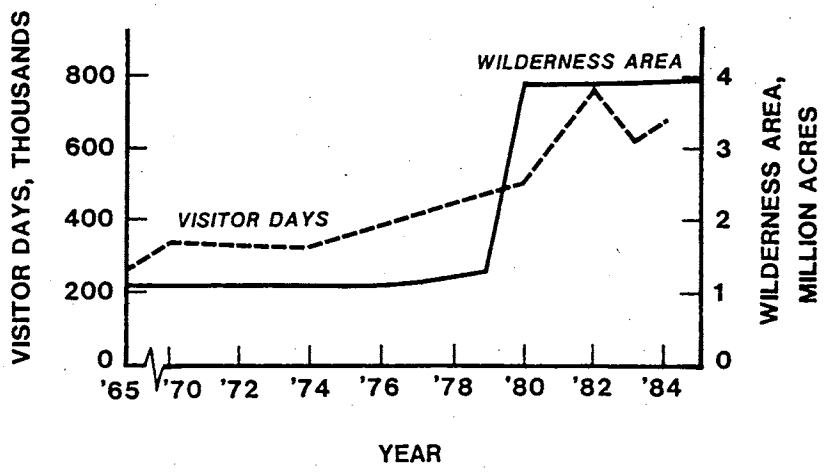


Figure 14—Acres and visitor days in wilderness areas on National Forests in Idaho, 1965 to 1984.

Idaho has many major rivers that are heavily used for recreation, and some are designated or are under study for wild and scenic or recreational river status. Most of these rivers are in forested areas, and while measures to protect water quality on these streams will be part of any harvesting or management activity, probably the bigger impact will be the controls on location and type of development, such as roads, that will be allowed in order to protect the wild and recreational values.

By 1983 nearly 750 miles of rivers had been designated for protection, and another 600 miles were proposed for study.

In 1972, two rivers, Clearwater and Middle Fork Salmon, totaling 257 miles were designated as wild, scenic, and recreation rivers, and another 1,105 miles were proposed for study (Idaho Department of Parks and Recreation 1973). By 1983 there were 578 miles of wild and scenic rivers plus 167 miles of recreation rivers designated (Idaho Department of Parks and Recreation 1983) (fig. 15).

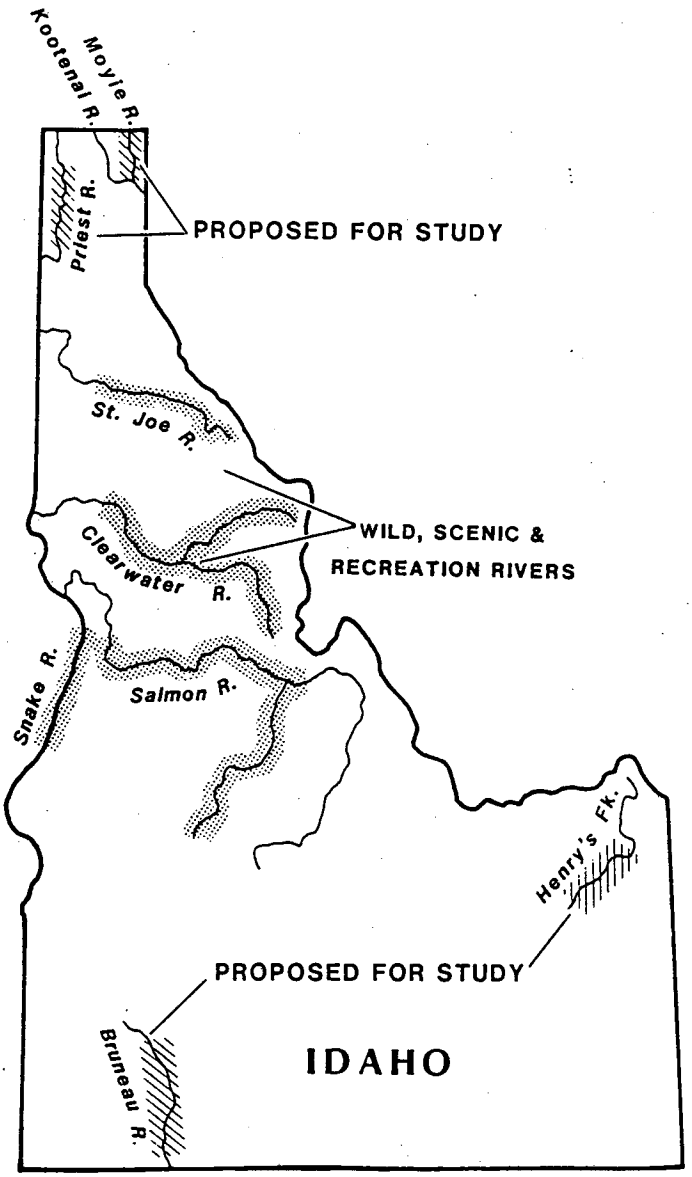


Figure 15—Existing and proposed Wild, Scenic, and Recreation Rivers in Idaho, 1983.

Employment in Forest Products

Idaho's forests are the foundation for a significant part of the State's economy...

with the wood products industry as the centerpiece.

Recent economic factors are signaling changes in production and markets.

For many Idaho residents the most important forest resource use statistic lies in the paycheck—the number of jobs produced from use of the forest resource. For some uses (grazing, recreation, mining) the forest resource plays a relatively small role, or the employment due to forest-related portions cannot be readily identified. But in the case of wood products, accurate data are available, and the employment effects of wood processing are direct and important.

Total nonmanufacturing employment in Idaho grew from about 250,000 in the early 1970's to about 325,000 in the early 1980's, and remained at about that level since. Lumber and wood products employment also grew rapidly up through the late 1970's but since then has plunged from nearly 19,000 in 1978 to under 14,000 in 1984 (Idaho Department of Employment, monthly statistics) (fig. 16). Many reasons are cited including shortage and costs for timber, market slumps due to high interest rates, and foreign competition for wood markets. Whatever the causes, the past few years probably represent a transition both for Idaho forest products industry and markets for Idaho's wood products. In turn, the current changes and trends in the next few years will probably set the pace for the future demands on the timber portion of Idaho's forest resources.

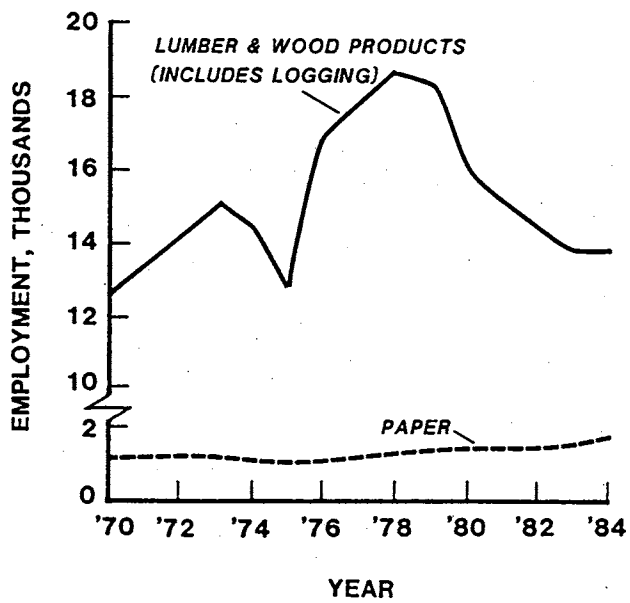


Figure 16—Employment in Idaho's wood products industry, 1970 to 1984.

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APPENDIX I: TERMINOLOGY

Acceptable trees—Growing-stock trees meeting specified standards of size and quality, but not qualifying as desirable trees.

Area condition class—A classification of timberland reflecting the degree to which the site is being utilized by growing-stock trees and other conditions affecting current and prospective timber growth (see Stocking):

Class 10—Areas fully stocked with desirable trees and not overstocked.
Class 20—Areas fully stocked with desirable trees, but overstocked with all live trees.
Class 30—Areas medium to fully stocked with desirable trees and with less than 20 percent of the area controlled by other trees and/or inhibiting vegetation or surface conditions that will prevent occupancy by desirable trees.
Class 40—Areas medium to fully stocked with desirable trees and with 30 percent or more of the area controlled by other trees, or conditions that ordinarily prevent occupancy by desirable trees, or both.
Class 50—Areas poorly stocked with desirable trees, but fully stocked with growing-stock trees.
Class 60—Areas poorly stocked with desirable trees, but with medium to full stocking of growing-stock trees.
Class 70—Areas nonstocked or poorly stocked with desirable trees, and poorly stocked with growing-stock trees.
Class 80—Low-risk old-growth stands.
Class 90—High-risk old-growth stands.
Nonstocked—Areas less than 10 percent stocked with growing-stock trees.

Basal area—The cross-sectional area of a tree expressed in square feet. For timber species the calculation is based on diameter at breast height (d.b.h.); for woodland species it is based on diameter at root collar (d.r.c.).

Cord—A pile of stacked wood containing 128 cubic feet within its outside standard dimensions of 4 by 4 by 8 feet.

Cull trees—Live trees that are unmerchantable now or prospectively (see Rough trees and Rotten trees).

Cull volume—Portions of a tree's volume that are not usable for wood products because of rot, form, missing material, or other cubic-foot defect. Form and sound defects include severe sweep and crook, forks, extreme form reduction, large deformities, and dead material.

Deferred forest land—Forest lands within the National Forest System that are under study for possible inclusion in the Wilderness System.

Desirable trees—Growing-stock trees (1) having no serious defect in quality to limit present or prospective use for timber products, (2) of relatively high vigor, and (3) containing no pathogens that may result in death or serious deterioration within the next decade.

Diameter at breast height (d.b.h.)—Diameter of the stem measured at 4.5 feet above the ground.

Diameter at root collar (d.r.c.)—Diameter equivalent at the point nearest the ground line that represents the basal area of the tree stem or stems.

Diameter classes—Tree diameters, either d.b.h. or d.r.c., grouped into 2-inch classes labeled by the midpoint of the class.

Farmer-owned lands—Lands owned by a person who operates a farm and who either does the work or directly supervises the work.

Forest industry lands—Lands owned by companies or individuals operating a primary wood-processing plant.

Forest land—Land at least 10 percent stocked by forest trees of any size, including land that formerly had such tree cover and that will be naturally or artificially regenerated. The minimum area for classification of forest land is 1 acre. Roadside, streamside, and shelterbelt strips of timber must have a crown width at least 120 feet wide to qualify as forest land. Unimproved roads and trails, streams, and clearings in forest areas are classified as forest if less than 120 feet wide.

Forest trees—Woody plants having a well-developed stem or stems, usually more than 12 feet in height at maturity, with a generally well-defined crown.

Forest type—A classification of forest land based upon and named for the tree species presently forming a plurality of live-tree stocking.

Growing-stock trees—Live sawtimber trees, poletimber trees, saplings, and seedlings of timber species meeting specified standards of quality and vigor; excludes cull trees.

Growing-stock volume—Net cubic-foot volume in live growing-stock trees from a 1-foot stump to a minimum 4.0-inch top (of central stem) outside bark or to the point where the central stem breaks into limbs.

Growth—See definition for Net annual growth.

Hardwood trees—Dicotyledonous trees, usually broad-leaved and deciduous.

High-risk old-growth stands—Timber stands over 100 years old in which the majority of the trees are not expected to survive more than 10 years.

Indian lands—Indian lands held in trust by the Federal Government.

Industrial wood—All commercial roundwood products except fuelwood.

Land area—The area of dry land and land temporarily or partially covered by water such as marshes, swamps, and river flood plains, streams, sloughs, estuaries, and canals less than 120 feet wide; and lakes, reservoirs, and ponds less than 1 acre in size.

Logging residues—The unused portions of growing-stock trees cut or killed by logging.

Low-risk old-growth stands—Timber stands over 100 years old in which the majority of the trees are expected to survive more than 10 years.

Miscellaneous Federal lands—Lands administered by Federal agencies other than the U.S. Department of Agriculture, Forest Service or U.S. Department of the Interior, Bureau of Land Management.

Mortality—The net volume of growing-stock trees that have died from natural causes during a specified period.

National Forest lands—Public lands administered by the U.S. Department of Agriculture, Forest Service.

National Resource lands—Public lands administered by the U.S. Department of the Interior, Bureau of Land Management.

Net annual growth—The net average annual increase in the volume of trees during a specified period.

Net volume in board feet—The gross board-foot volume in the sawlog portion of growing-stock trees, less deductions for cull volume.

Net volume in cubic feet—Gross cubic-foot volume in the merchantable portion of trees less deductions for cull volume. For timber species, volume is computed for the merchantable stem from a 1-foot stump to a minimum 4.0-inch top diameter outside bark, or to the point where the central stem breaks into limbs. For woodland species, volume is computed outside bark (o.b.) for all woody material above d.r.c. that is larger than 1.5 inches in diameter (o.b.).

Nonforest land—Land that does not currently qualify as forest land.

Nonindustrial private—All private ownerships except forest industry.

Nonstocked areas—Forest land less than 10 percent stocked with live trees.

Old-growth stands—Stands of timber species over 100 years old.

Other private land—Privately owned land other than forest industry or farmer-owned.

Other public land—Public land administered by agencies other than the U.S. Department of Agriculture, Forest Service.

Other removals—The net volume of growing-stock trees removed from the inventory by cultural operations such as timber-stand improvement, by land clearing, and by changes in land use, such as a shift to wilderness.

Poletimber stands—Stands at least 10 percent stocked with growing-stock trees, in which half or more of the stocking is sawtimber or poletimber trees or both, with poletimber stocking exceeding that of sawtimber (see definition for Stocking).

Poletimber trees—Live trees of timber species at least 5.0 inches d.b.h. but smaller than sawtimber size.

Potential growth—The average net annual cubic-foot growth per acre at culmination of mean annual growth attainable in fully stocked natural stands.

Primary wood-processing plants—Plants using roundwood products such as sawlogs, pulpwood bolts, veneer logs, etc.

Productivity class—A classification of forest land in terms of potential growth.

Removals—The net volume of growing-stock trees removed from the inventory by harvesting, cultural operations, land clearings, or changes in land use.

Reserved forest land—Forest land withdrawn from tree utilization through statute or administrative designation.

Residues:

Coarse residues—Plant residues suitable for chipping, such as slabs, edgings, and ends.
Fine residues—Plant residues not suitable for chipping, such as sawdust, shavings, and veneer clippings.
Plant residues—Wood materials from primary manufacturing plants that are not used for any product.

Rotten tree—A live poletimber or sawtimber tree with more than 67 percent of its total volume cull (cubic-foot), and with more than half of the cull volume attributable to rotten or missing material.

Rough tree—A live poletimber or sawtimber tree with more than 67 percent of its total volume cull (cubic-foot), and with less than half of the cull volume attributable to rotten or missing material.

Roundwood—Logs, bolts, or other round sections cut from trees.

Salvable dead trees—Standing or down dead trees that are currently merchantable by regional standards.

Saplings—Live trees of timber species 1.0 to 4.9 inches d.b.h., or woodland species 1.0 to 2.9 inches d.r.c.

Sapling and seedling stands—Timberland stands at least 10 percent stocked on which more than half of the stocking is saplings or seedlings or both.

Sawlog portion—That part of the bole of sawtimber trees between a 1-foot stump and the sawlog top.

Sawlog top—The point on the bole of sawtimber trees above which a sawlog cannot be produced. The minimum sawlog top is 7.0 inches diameter o.b. for softwoods, and 9.0 inches diameter o.b. for hardwoods.

Sawtimber stands—Stands at least 10 percent stocked with growing-stock trees, with half or more of total stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to poletimber stocking.

Sawtimber trees—Live trees of timber species meeting regional size and defect specifications. Softwood trees must be at least 9.0 inches d.b.h. and hardwood trees 11.0 inches d.b.h.

Sawtimber volume—Net volume in board feet of the sawlog portion of live sawtimber trees.

Seedlings—Established live trees of timber species less than 1.0 inch d.b.h. or woodland species less than 1.0 inch d.r.c.

Softwood trees—Monocotyledonous trees, usually evergreen, having needle or scalelike leaves.

Standard error—An expression of the degree of confidence that can be placed on an estimated total or average obtained by statistical sampling methods. Standard errors do not include technique errors that could occur in photo classification of areas, field measurements, or compilation of data.

Stand-size classes—A classification of forest land based on the predominant size of trees present (see Sawtimber stands, Poletimber stands, and Sapling and seedling stands).

State, county, and municipal lands—Lands administered by States, counties, and local public agencies, or lands leased by these governmental units for more than 50 years.

Stocking—An expression of the extent to which growing space is effectively utilized by present or potential growing-stock trees of timber species. Percentage stocking is the ratio of actual stocking to full stocking for comparable sites and stands, using basal area as the basis for comparison.

Timberland—Forest land where timber species make up at least 10 percent stocking.

Timber species—Tree species traditionally used for industrial wood products. In the Rocky Mountain States, these include aspen and cottonwood hardwood species and all softwood species except pinyon and juniper.

Timber stand improvement—Treatments such as thinning, pruning, release cutting, girdling, weeding, or poisoning of unwanted trees aimed at improving growing conditions for the remaining trees.

Upper-stem portion—That part of the main stem or fork of sawtimber trees above the sawlog top to a minimum top diameter of 4.0 inches outside bark or to the point where the main stem or fork breaks into limbs.

Water—Streams, sloughs, estuaries, and canals more than 120 feet wide, and lakes, reservoirs, and ponds more than 1 acre in size at mean high water level.

Wilderness—An area of undeveloped land currently included in the Wilderness System, managed so as to preserve its natural conditions and retain its primeval character and influence.

Woodland—Forest land where timber species make up less than 10 percent stocking.

Woodland species—Tree species not usually converted into industrial wood products. Common uses are fuelwood, fenceposts, and Christmas trees.

Woodland species dead volume—Net volume of dead woodland trees and dead net volume portion of live woodland tree species.

Woodland species live volume—Net cubic-foot volume in live woodland tree species.

APPENDIX II: INVENTORY TECHNIQUES AND DATA RELIABILITY

Techniques

The inventory was designed to provide reliable statistics primarily at the State and sample area levels. Procedures were as follows:

1. Initial area estimates were based on the classification of 693,000 sample points systematically placed on the latest aerial photographs available. The sample points were summarized and grouped into strata for subsequent field sampling. The photo points, adjusted to meet known land areas, were used to compute area expansion factors for the field stratum means.

2. Land classification and estimates of timber characteristics and volume were based on observations and measurements recorded at 2,772 ground sample locations of which 636 were forested. Sample trees were selected using a 10-point cluster, which includes fixed plots (1/300-acre) for trees less than 5 inches d.b.h. and variable plots (40-BAF) for trees 5 inches d.b.h. or larger.

3. Kemp's equations were used to compute volume and defect.

4. All photo and field data were sent to the Intermountain Research Station, Ogden, UT, for editing and were punched onto cards and stored for machine computing, sorting, and tabulation. Final estimates were based on statistical summaries of the data.

Data Reliability

Individual cells within tables should be used with caution. Some are based on small sample sizes and so result in high sampling errors. The standard error percentages shown in appendix tables 65 and 66 were calculated at the 67 percent confidence level.

APPENDIX III: FOREST SURVEY TABLES

Table 9.--Area of forest land in Idaho by forest type, ownership class and land class, 1981

Forest type	Ownership class and land class						
	National Forest			Other public		Forest industry	
	Deferred	Reserved	Nonreserved	Reserved	Nonreserved	Reserved	Nonreserved
	Thousand acres						
Douglas-fir	373.9	847.1	4,357.4	0.7	525.0	--	250.5
Hemlock	9.3	27.1	388.3	--	60.5	--	64.9
Ponderosa pine	118.0	168.8	1,156.5	0.5	228.4	--	103.7
Western white pine	1.7	6.7	131.0	--	84.1	--	5.2
Lodgepole pine	203.7	685.0	2,644.2	33.3	128.6	--	56.3
Western larch	20.8	45.2	528.5	--	46.1	--	36.0
Western redcedar	9.6	20.3	252.1	--	104.6	--	188.5
Grand fir	60.6	116.3	922.3	--	218.1	--	364.6
Engelmann spruce-fir	128.5	542.7	2,247.4	--	102.4	--	100.4
Aspen	5.7	17.7	136.6	--	128.0	--	([1])
Cottonwood	3.5	14.6	43.2	--	9.2	--	8.0
Total timberland	935.3	2,491.5	12,807.5	34.5	1,635.0	--	1,178.1
Pinyon-juniper	--	--	--	--	42.1	--	--
Juniper	--	--	--	--	306.3	--	0.2
Western juniper	--	--	--	--	132.9	--	--
Oak	--	1.0	--	--	([1])	--	--
Mountain brush	--	--	--	--	22.8	--	0.4
Riparian	--	--	--	--	12.4	--	0.8
Other hardwoods	--	--	--	--	43.3	--	8.8
Total woodland	--	1.0	--	--	559.8	--	10.2
Total all types	935.3	2,492.5	12,807.5	34.5	2,194.8	--	1,188.3

(con.)

Table 9 (con.)

Forest type	Ownership class and land class					
	Nonindustrial private		All owners			
	Reserved	Nonreserved	Deferred	Reserved	Nonreserved	Total
	Thousand acres					
Douglas-fir	--	712.8	373.9	847.8	5,845.7	7,067.4
Hemlock	--	27.9	9.3	27.1	541.6	578.0
Ponderosa pine	--	417.8	118.0	169.3	1,906.4	2,193.7
Western white pine	--	18.7	1.7	6.7	239.0	247.4
Lodgepole pine	--	191.0	203.7	718.3	3,020.1	3,942.1
Western larch	--	46.0	20.8	45.2	656.6	722.6
Western redcedar	--	70.9	9.6	20.3	616.1	646.0
Grand fir	--	262.1	60.6	116.3	1,767.1	1,944.0
Engelmann spruce-fir	--	48.6	128.5	542.7	2,498.8	3,170.0
Aspen	--	182.6	5.7	17.7	447.2	470.6
Cottonwood	--	61.6	3.5	14.6	122.0	140.1
Total timberland	--	2,040.0	935.3	2,526.0	17,660.6	21,121.9
Pinyon-juniper	--	38.6	--	--	80.7	80.7
Juniper	--	62.2	--	--	368.7	368.7
Western juniper	--	28.5	--	--	161.4	161.4
Oak	--	--	--	1.0	([1])	1.0
Mountain brush	--	19.1	--	--	42.3	42.3
Riparian	--	56.7	--	--	69.9	69.9
Other hardwoods	--	43.3	--	--	95.4	95.4
Total woodland	--	248.4	--	1.0	818.4	819.4
Total all types	--	2,288.4	935.3	2,527.0	18,479.0	21,941.3

[1]Less than 50 acres.

Table 10.--Area of timberland in Idaho by forest type, stand-size class, and productivity class, 1981

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Douglas-fir:							
Sawtimber	128.3	425.6	717.4	1,137.8	990.5	1.0	3,400.6
Poletimber	24.2	29.7	111.3	116.7	83.3	--	365.2
Sapling and seedling	22.7	42.0	151.8	73.3	87.1	--	376.9
Nonstocked	0.2	3.7	70.7	79.2	144.4	9.3	307.5
Total	175.4	501.0	1,051.2	1,407.0	1,305.3	10.3	4,450.2
Hemlock:							
Sawtimber	0.8	78.5	168.9	73.5	15.6	--	337.3
Poletimber	--	42.1	20.3	20.8	5.3	--	88.5
Sapling and seedling	--	38.1	14.8	32.4	0.4	--	85.7
Nonstocked	--	0.8	2.5	7.4	--	--	10.7
Total	0.8	159.5	206.5	134.1	21.3	--	522.2
Ponderosa pine:							
Sawtimber	22.2	118.6	313.4	461.3	310.9	--	1,226.4
Poletimber	5.1	0.3	9.9	35.8	11.5	--	62.6
Sapling and seedling	0.9	12.3	15.8	46.4	27.6	--	103.0
Nonstocked	--	2.3	62.0	70.1	75.0	--	209.4
Total	28.2	133.5	401.1	613.6	425.0	--	1,601.4
Western white pine:							
Sawtimber	44.7	65.6	41.2	7.3	0.8	--	159.6
Poletimber	2.7	14.3	16.0	14.4	6.6	--	54.0
Sapling and seedling	0.5	0.9	3.2	1.8	0.2	--	6.6
Nonstocked	--	5.5	1.6	2.3	1.6	--	11.0
Total	47.9	86.3	62.0	25.8	9.2	--	231.2
Lodgepole pine:							
Sawtimber	23.0	66.5	166.4	279.7	463.6	--	999.2
Poletimber	17.3	61.9	130.3	154.7	518.2	--	882.4
Sapling and seedling	0.1	3.6	18.9	95.4	176.2	--	294.2
Nonstocked	--	0.4	11.1	17.4	53.6	--	82.5
Total	40.4	132.4	326.7	547.2	1,211.6	--	2,258.3
Western larch:							
Sawtimber	8.1	58.2	133.8	47.0	14.3	--	261.4
Poletimber	1.3	23.3	84.7	73.9	--	--	183.2
Sapling and seedling	0.5	24.2	54.9	73.8	7.4	--	160.8
Nonstocked	--	0.2	0.5	5.8	2.8	--	9.3
Total	9.9	105.9	273.9	200.5	24.5	--	614.7
Western redcedar:							
Sawtimber	97.0	160.1	175.6	42.2	2.0	--	476.9
Poletimber	0.3	9.2	10.1	3.7	--	--	23.3
Sapling and seedling	--	41.2	26.4	18.0	--	--	85.6
Nonstocked	--	5.3	13.2	4.0	2.2	--	24.7
Total	97.3	215.8	225.3	67.9	4.2	--	610.5

(con.)

Table 10 (con.)

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Grand fir:							
Sawtimber	128.6	359.8	479.7	287.2	15.2	--	1,270.5
Poletimber	5.0	85.2	36.5	24.6	0.5	--	151.8
Sapling and seedling	2.0	89.8	79.9	56.9	6.3	--	234.9
Nonstocked	--	14.5	6.9	8.9	2.4	--	32.7
Total	135.6	549.3	603.0	377.6	24.4	--	1,689.9
Engelmann spruce-fir:							
Sawtimber	1.6	82.0	356.8	422.9	315.8	0.9	1,180.0
Poletimber	--	16.0	53.6	73.7	46.6	--	189.9
Sapling and seedling	5.0	8.1	50.0	37.7	36.7	0.8	138.3
Nonstocked	--	0.4	4.0	36.4	13.8	0.8	55.4
Total	6.6	106.5	464.4	570.7	412.9	2.5	1,563.6
Aspen:							
Sawtimber	0.2	--	6.4	18.5	19.5	--	44.6
Poletimber	--	1.0	5.9	34.2	101.1	4.9	147.1
Sapling and seedling	--	6.0	7.2	35.0	112.6	21.8	182.6
Nonstocked	0.8	0.2	--	0.7	0.7	4.9	7.3
Total	1.0	7.2	19.5	88.4	233.9	31.6	381.6
Cottonwood:							
Sawtimber	--	7.9	6.9	28.6	8.0	--	51.4
Poletimber	--	--	--	--	8.8	--	8.8
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	16.3	6.2	--	22.5
Total	--	7.9	6.9	44.9	23.0	--	82.7
All types:							
Sawtimber	454.5	1,422.8	2,566.5	2,806.0	2,156.2	1.9	9,407.9
Poletimber	55.9	283.0	478.6	552.5	781.9	4.9	2,156.8
Sapling and seedling	31.7	266.2	422.9	470.7	454.5	22.6	1,668.6
Nonstocked	1.0	33.3	172.5	248.5	302.7	15.0	773.0
Total	543.1	2,005.3	3,640.5	4,077.7	3,695.3	44.4	14,006.3[1]

[1]Does not include 3,654.3 thousand acres of productivity class 0-19 for National Forest lands as this information was not available by stand-size class for this report.

Table 11.--Area of National Forest timberland in Idaho by forest type, stand-size class, and productivity class, 1981

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Douglas-fir:							
Sawtimber	50.3	162.1	288.2	897.9	948.0	--	2,346.5
Poletimber	10.2	17.5	69.2	69.7	75.1	--	241.7
Sapling and seedling	17.4	24.4	99.1	27.4	80.8	--	249.1
Nonstocked	--	0.4	45.2	16.1	62.9	--	124.6
Total	77.9	204.4	501.7	1,011.1	1,166.8	1,395.5	2,961.9[1]
Hemlock:							
Sawtimber	--	47.4	120.0	32.3	15.0	--	214.7
Poletimber	--	41.8	4.9	20.1	5.3	--	72.1
Sapling and seedling	--	37.4	7.1	31.5	--	--	76.0
Nonstocked	--	0.8	--	5.3	--	--	6.1
Total	--	127.4	132.0	89.2	20.3	19.4	368.9[1]
Ponderosa pine:							
Sawtimber	1.7	19.7	107.1	309.6	298.9	--	737.0
Poletimber	--	0.1	1.0	6.8	6.6	--	14.5
Sapling and seedling	--	--	0.1	22.6	26.2	--	48.9
Nonstocked	--	--	--	8.5	42.6	--	51.1
Total	1.7	19.8	108.2	347.5	374.3	305.0	851.5[1]
Western white pine:							
Sawtimber	25.4	34.5	16.7	3.7	--	--	80.3
Poletimber	--	8.3	14.0	12.1	6.6	--	41.0
Sapling and seedling	--	--	1.9	--	--	--	1.9
Nonstocked	--	--	--	--	--	--	--
Total	25.4	42.8	32.6	15.8	6.6	7.8	123.2[1]
Lodgepole pine:							
Sawtimber	9.3	56.3	89.9	217.8	447.1	--	820.4
Poletimber	2.0	53.1	100.9	106.1	502.6	--	764.7
Sapling and seedling	--	2.5	6.4	60.7	171.8	--	241.4
Nonstocked	--	--	--	3.8	52.1	--	55.9
Total	11.3	111.9	197.2	388.4	1,173.6	761.8	1,882.4[1]
Western larch:							
Sawtimber	7.9	35.6	92.5	28.6	14.3	--	178.9
Poletimber	0.1	9.6	65.3	68.4	--	--	143.4
Sapling and seedling	--	24.2	52.7	73.5	7.4	--	157.8
Nonstocked	--	0.2	0.5	5.8	--	--	6.5
Total	8.0	69.6	211.0	176.3	21.7	41.9	486.6[1]
Western redcedar:							
Sawtimber	61.3	108.7	52.5	5.9	--	--	228.4
Poletimber	--	2.7	1.3	0.9	--	--	4.9
Sapling and seedling	--	2.0	8.4	--	--	--	10.4
Nonstocked	--	--	2.8	--	--	--	2.8
Total	61.3	113.4	65.0	6.8	--	5.6	246.5[1]

(con.)

Table 11 (con.)

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Grand fir:							
Sawtimber	96.2	167.7	162.9	149.2	14.1	--	590.1
Poletimber	--	84.2	24.0	15.0	0.1	--	123.3
Sapling and seedling	1.7	89.4	23.4	10.3	6.3	--	131.1
Nonstocked	--	--	--	--	0.6	--	0.6
Total	97.9	341.3	210.3	174.5	21.1	77.2	845.1[1]
Engelmann spruce-fir:							
Sawtimber	1.6	63.9	275.8	364.9	304.7	--	1,010.9
Poletimber	--	16.0	43.8	59.5	43.0	--	162.3
Sapling and seedling	5.0	8.1	28.3	25.0	33.1	--	99.5
Nonstocked	--	--	3.1	23.9	12.5	--	39.5
Total	6.6	88.0	351.0	473.3	393.3	935.2	1,312.2[1]
Aspen:							
Sawtimber	--	--	--	6.3	16.7	--	23.0
Poletimber	--	--	--	3.9	21.0	--	24.9
Sapling and seedling	--	--	--	7.7	15.4	--	23.1
Nonstocked	--	--	--	--	--	--	--
Total	--	--	--	17.9	53.1	65.6	71.0[1]
Cottonwood:							
Sawtimber	--	--	2.0	1.9	--	--	3.9
Poletimber	--	--	--	--	--	--	--
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
Total	--	--	2.0	1.9	--	39.3	3.9[1]
All types:							
Sawtimber	253.7	695.9	1,207.6	2,018.1	2,058.8	--	6,234.1
Poletimber	12.3	233.3	324.4	362.5	660.3	--	1,592.8
Sapling and seedling	24.1	188.0	227.4	258.7	341.0	--	1,039.2
Nonstocked	--	1.4	51.6	63.4	170.7	--	287.1
Total	290.1	1,118.6	1,811.0	2,702.7	3,230.8	3,654.3	9,153.2[1]

[1]Does not include the 0-19 productivity class totals as this information was not available by stand-size class for this report.

Table 12.--Area of other publicly owned timberland in Idaho by forest type, stand-size class, and productivity class, 1981

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Douglas-fir:							
Sawtimber	10.1	56.9	122.1	114.0	35.7	1.0	339.8
Poletimber	0.5	7.4	17.4	14.0	8.2	--	47.5
Sapling and seedling	0.5	1.2	5.5	14.9	6.3	--	28.4
Nonstocked	0.2	--	12.4	17.5	76.7	2.5	109.3
Total	11.3	65.5	157.4	160.4	126.9	3.5	525.0
Hemlock:							
Sawtimber	0.8	10.9	20.6	17.4	0.6	--	50.3
Poletimber	--	0.3	1.2	0.7	--	--	2.2
Sapling and seedling	--	0.7	1.4	0.9	0.4	--	3.4
Nonstocked	--	--	2.5	2.1	--	--	4.6
Total	0.8	11.9	25.7	21.1	1.0	--	60.5
Ponderosa pine:							
Sawtimber	7.7	22.3	41.3	58.1	12.0	--	141.4
Poletimber	0.4	0.2	2.1	9.9	4.9	--	17.5
Sapling and seedling	0.9	0.3	3.2	5.9	1.4	--	11.7
Nonstocked	--	2.3	21.2	20.1	14.2	--	57.8
Total	9.0	25.1	67.8	94.0	32.5	--	228.4
Western white pine:							
Sawtimber	5.4	31.1	24.5	3.6	0.8	--	65.4
Poletimber	2.7	1.2	2.0	2.3	--	--	8.2
Sapling and seedling	0.5	0.9	1.3	1.8	0.2	--	4.7
Nonstocked	--	0.3	1.6	2.3	1.6	--	5.8
Total	8.6	33.5	29.4	10.0	2.6	--	84.1
Lodgepole pine:							
Sawtimber	2.6	3.9	14.4	26.6	11.6	--	59.1
Poletimber	1.4	2.3	8.3	19.6	15.6	--	47.2
Sapling and seedling	0.1	1.1	2.8	3.6	4.4	--	12.0
Nonstocked	--	0.4	5.2	3.2	1.5	--	10.3
Total	4.1	7.7	30.7	53.0	33.1	--	128.6
Western larch:							
Sawtimber	0.2	2.3	12.1	6.1	--	--	20.7
Poletimber	1.2	4.6	8.3	5.5	--	--	19.6
Sapling and seedling	0.5	--	2.2	0.3	--	--	3.0
Nonstocked	--	--	--	--	2.8	--	2.8
Total	1.9	6.9	22.6	11.9	2.8	--	46.1
Western redcedar:							
Sawtimber	6.4	21.6	31.9	18.4	2.0	--	80.3
Poletimber	0.3	--	2.0	2.8	--	--	5.1
Sapling and seedling	--	0.1	4.1	3.6	--	--	7.8
Nonstocked	--	--	5.2	4.0	2.2	--	11.4
Total	6.7	21.7	43.2	28.8	4.2	--	104.6

(con.)

Table 12 (con.)

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Grand fir:							
Sawtimber	7.4	36.8	79.9	59.4	1.1	--	184.6
Poletimber	0.2	1.0	2.8	3.0	0.4	--	7.4
Sapling and seedling	0.3	0.4	3.0	4.1	--	--	7.8
Nonstocked	--	0.7	6.9	8.9	1.8	--	18.3
Total	7.9	38.9	92.6	75.4	3.3	--	218.1
Engelmann spruce-fir:							
Sawtimber	--	7.9	29.9	27.2	11.1	0.9	77.0
Poletimber	--	--	2.8	4.6	3.6	--	11.0
Sapling and seedling	--	--	2.1	1.6	3.6	0.8	8.1
Nonstocked	--	0.4	0.9	2.9	1.3	0.8	6.3
Total	--	8.3	35.7	36.3	19.6	2.5	102.4
Aspen:							
Sawtimber	0.2	--	6.4	12.2	2.8	--	21.6
Poletimber	--	1.0	5.9	15.8	31.3	0.1	54.1
Sapling and seedling	--	0.1	1.1	20.5	26.7	1.4	49.8
Nonstocked	0.8	0.2	--	0.7	0.7	0.1	2.5
Total	1.0	1.3	13.4	49.2	61.5	1.6	128.0
Cottonwood:							
Sawtimber	--	--	0.1	3.2	0.2	--	3.5
Poletimber	--	--	--	--	2.8	--	2.8
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	2.8	0.1	--	2.9
Total	--	--	0.1	6.0	3.1	--	9.2
All types:							
Sawtimber	40.8	193.7	383.2	346.2	77.9	1.9	1,043.7
Poletimber	6.7	18.0	52.8	78.2	66.8	0.1	222.6
Sapling and seedling	2.8	4.8	26.7	57.2	43.0	2.2	136.7
Nonstocked	1.0	4.3	55.9	64.5	102.9	3.4	232.0
Total	51.3	220.8	518.6	546.1	290.6	7.6	1,635.0

Table 13.--Area of forest industry owned timberland in Idaho by forest type, stand-size class, and productivity class, 1981

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Douglas-fir:							
Sawtimber	13.4	90.4	45.4	32.1	--	--	181.3
Poletimber	13.5	--	0.8	7.9	--	--	22.2
Sapling and seedling	--	5.2	13.7	12.3	--	--	31.2
Nonstocked	--	0.5	7.0	8.3	--	--	15.8
Total	26.9	96.1	66.9	60.6	--	--	250.5
Hemlock:							
Sawtimber	--	20.2	22.0	14.8	--	--	57.0
Poletimber	--	--	7.9	--	--	--	7.9
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
Total	--	20.2	29.9	14.8	--	--	64.9
Ponderosa pine:							
Sawtimber	7.9	1.6	33.1	19.5	--	--	62.1
Poletimber	--	--	--	12.8	--	--	12.8
Sapling and seedling	--	--	2.1	12.4	--	--	14.5
Nonstocked	--	--	2.0	6.3	6.0	--	14.3
Total	7.9	1.6	37.2	51.0	6.0	--	103.7
Western white pine:							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	--	--	--
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	5.2	--	--	--	--	5.2
Total	--	5.2	--	--	--	--	5.2
Lodgepole pine:							
Sawtimber	--	--	27.6	14.2	--	--	41.8
Poletimber	--	6.5	6.6	1.4	--	--	14.5
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
Total	--	6.5	34.2	15.6	--	--	56.3
Western larch:							
Sawtimber	--	14.0	9.7	12.3	--	--	36.0
Poletimber	--	--	--	--	--	--	--
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
Total	--	14.0	9.7	12.3	--	--	36.0
Western redcedar:							
Sawtimber	7.0	20.7	56.5	17.9	--	--	102.1
Poletimber	--	6.5	6.8	--	--	--	13.3
Sapling and seedling	--	34.3	13.9	14.4	--	--	62.6
Nonstocked	--	5.3	5.2	--	--	--	10.5
Total	7.0	66.8	82.4	32.3	--	--	188.5

(con.)

Table 13 (con.)

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Grand fir:							
Sawtimber	6.5	81.1	175.2	33.6	--	--	296.4
Poletimber	--	--	--	6.6	--	--	6.6
Sapling and seedling	--	--	31.7	16.1	--	--	47.8
Nonstocked	--	13.8	--	--	--	--	13.8
Total	6.5	94.9	206.9	56.3	--	--	364.6
Engelmann spruce-fir:							
Sawtimber	--	10.2	45.2	7.3	--	--	62.7
Poletimber	--	--	7.0	(1)	--	--	7.0
Sapling and seedling	--	--	19.6	11.1	--	--	30.7
Nonstocked	--	--	--	(1)	--	--	(1)
Total	--	10.2	71.8	18.4	--	--	100.4
Aspen:							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	--	(1)	--	(1)
Sapling and seedling	--	--	--	--	--	(1)	(1)
Nonstocked	--	--	--	--	--	--	--
Total	--	--	--	--	(1)	(1)	(1)
Cottonwood:							
Sawtimber	--	7.9	--	--	--	--	7.9
Poletimber	--	--	--	--	(1)	--	(1)
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	0.1	--	--	0.1
Total	--	7.9	--	0.1	(1)	--	8.0
All types:							
Sawtimber	34.8	246.1	414.7	151.7	--	--	847.3
Poletimber	13.5	13.0	29.1	28.7	(1)	--	84.3
Sapling and seedling	--	39.5	81.0	66.3	--	(1)	186.8
Nonstocked	--	24.8	14.2	14.7	6.0	--	59.7
Total	48.3	323.4	539.0	261.4	6.0	(1)	1,178.1

[1]Less than 50 acres.

Table 14.--Area of nonindustrial privately owned timberland in Idaho by forest type, stand-size class, and productivity class, 1981

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Douglas-fir:							
Sawtimber	54.5	116.2	261.7	93.8	6.8	--	533.0
Poletimber	--	4.8	23.9	25.1	--	--	53.8
Sapling and seedling	4.8	11.2	33.5	18.7	--	--	68.2
Nonstocked	--	2.8	6.1	37.3	4.8	6.8	57.8
Total	59.3	135.0	325.2	174.9	11.6	6.8	712.8
Hemlock:							
Sawtimber	--	--	6.3	9.0	--	--	15.3
Poletimber	--	--	6.3	--	--	--	6.3
Sapling and seedling	--	--	6.3	--	--	--	6.3
Nonstocked	--	--	--	--	--	--	--
Total	--	--	18.9	9.0	--	--	27.9
Ponderosa pine:							
Sawtimber	4.9	75.0	131.9	74.1	--	--	285.9
Poletimber	4.7	--	6.8	6.3	--	--	17.8
Sapling and seedling	--	12.0	10.4	5.5	--	--	27.9
Nonstocked	--	--	38.8	35.2	12.2	--	86.2
Total	9.6	87.0	187.9	121.1	12.2	--	417.8
Western white pine:							
Sawtimber	13.9	--	--	--	--	--	13.9
Poletimber	--	4.8	--	--	--	--	4.8
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
Total	13.9	4.8	--	--	--	--	18.7
Lodgepole pine:							
Sawtimber	11.1	6.3	34.5	21.1	4.9	--	77.9
Poletimber	13.9	--	14.5	27.6	--	--	56.0
Sapling and seedling	--	--	9.7	31.1	--	--	40.8
Nonstocked	--	--	5.9	10.4	--	--	16.3
Total	25.0	6.3	64.6	90.2	4.9	--	191.0
Western larch:							
Sawtimber	--	6.3	19.5	--	--	--	25.8
Poletimber	--	9.1	11.1	--	--	--	20.2
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	--	--	--	--
Total	--	15.4	30.6	--	--	--	46.0
Western redcedar:							
Sawtimber	22.3	9.1	34.7	--	--	--	66.1
Poletimber	--	--	--	--	--	--	--
Sapling and seedling	--	4.8	--	--	--	--	4.8
Nonstocked	--	--	--	--	--	--	--
Total	22.3	13.9	34.7	--	--	--	70.9

(con.)

Table 14 (con.)

Forest type and stand-size class	Productivity class						Total acres
	165+	120-164	85-119	50-84	20-49	0-19	
	Thousand acres						
Grand fir:							
Sawtimber	18.5	74.2	61.7	45.0	--	--	199.4
Poletimber	4.8	--	9.7	--	--	--	14.5
Sapling and seedling	--	--	21.8	26.4	--	--	48.2
Nonstocked	--	--	--	--	--	--	--
Total	23.3	74.2	93.2	71.4	--	--	262.1
Engelmann spruce-fir:							
Sawtimber	--	--	5.9	23.5	--	--	29.4
Poletimber	--	--	--	9.6	--	--	9.6
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	9.6	--	--	9.6
Total	--	--	5.9	42.7	--	--	48.6
Aspen:							
Sawtimber	--	--	--	--	--	--	--
Poletimber	--	--	--	14.5	48.8	4.8	68.1
Sapling and seedling	--	5.9	6.1	6.8	70.5	20.4	109.7
Nonstocked	--	--	--	--	--	4.8	4.8
Total	--	5.9	6.1	21.3	119.3	30.0	182.6
Cottonwood:							
Sawtimber	--	--	4.8	23.5	7.8	--	36.1
Poletimber	--	--	--	--	6.0	--	6.0
Sapling and seedling	--	--	--	--	--	--	--
Nonstocked	--	--	--	13.4	6.1	--	19.5
Total	--	--	4.8	36.9	19.9	--	61.6
All types:							
Sawtimber	125.2	287.1	561.0	290.0	19.5	--	1,282.8
Poletimber	23.4	18.7	72.3	83.1	54.8	4.8	257.1
Sapling and seedling	4.8	33.9	87.8	88.5	70.5	20.4	305.9
Nonstocked	--	2.8	50.8	105.9	23.1	11.6	194.2
Total	153.4	342.5	771.9	567.5	167.9	36.8	2,040.0

Table 15.--Area of timberland in Idaho by stand-size class and ownership class, 1981

Stand-size class	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	Thousand acres				
Sawtimber stands	6,234.1	1,043.7	847.3	1,282.8	9,407.9
Poletimber stands	1,592.8	222.6	84.3	257.1	2,156.8
Sapling and seedling stands	1,039.2	136.7	186.8	305.9	1,668.6
Nonstocked areas	287.1	232.0	59.7	194.2	773.0
Total	9,153.2[1]	1,635.0	1,178.1	2,040.0	14,006.3

[1]Does not include 3,654.3 thousand acres of productivity class 0-19 as this information was not available by stand-size class for this report.

Table 16.--Number of growing-stock trees on timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)															All classes
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand trees															
Douglas-fir	210,079	166,007	139,139	97,840	76,528	53,868	43,454	26,356	17,677	12,053	7,768	5,434	3,519	2,201	4,500	866,423
Ponderosa pine	21,495	24,759	23,995	17,208	11,028	11,035	7,306	5,864	3,376	2,950	2,308	1,857	1,438	1,114	3,761	139,494
Western white pine	12,372	6,402	7,884	5,831	5,166	4,031	3,233	2,047	2,007	1,161	867	750	496	268	542	53,057
Lodgepole pine	193,700	227,729	194,282	141,357	74,319	32,833	11,884	4,380	1,455	488	224	47	6	8	5	882,717
Whitebark pine	15,787	9,646	7,246	4,707	2,602	1,383	975	732	267	105	75	33	18	13	20	43,609
Limber pine	1,078	85	64	249	128	21	62	3	2	6	3	--	1	2	--	1,704
Western larch	14,776	25,816	32,476	22,315	14,123	7,975	5,441	2,948	1,853	1,230	838	503	326	219	491	131,330
Grand fir	202,178	122,588	78,338	47,092	33,037	19,729	13,640	8,623	6,000	3,785	2,188	1,777	1,358	938	2,054	543,325
Subalpine fir	202,388	128,787	79,092	48,155	29,455	17,718	10,235	6,008	3,258	1,847	1,164	554	375	120	138	529,294
White fir	2,333	1,491	668	529	263	277	216	154	130	77	50	45	36	21	147	6,437
Engelmann spruce	46,595	26,115	19,343	16,144	11,735	8,609	6,906	4,786	3,332	2,642	2,076	1,418	812	524	926	151,963
Western hemlock	87,356	40,198	28,902	14,972	10,752	6,660	5,430	3,211	2,352	1,398	892	669	347	284	431	203,854
Western redcedar	152,713	54,994	30,615	19,065	13,698	8,794	6,401	4,274	3,101	2,395	1,719	1,072	791	718	1,959	302,309
Total softwoods	1,162,850	834,617	642,044	435,464	282,834	172,933	115,183	69,386	44,810	30,137	20,172	14,159	9,523	6,430	14,974	3,855,516
Aspen	64,249	40,703	39,610	15,331	4,755	2,078	518	177	79	40	19	2	--	1	--	167,562
Cottonwood	3,670	1,503	2,441	547	837	810	573	432	375	153	179	146	52	29	127	11,874
Total hardwoods	67,919	42,206	42,051	15,878	5,592	2,888	1,091	609	454	193	198	148	52	30	127	179,436
All species	1,230,769	876,823	684,095	451,342	288,426	175,821	116,274	69,995	45,264	30,330	20,370	14,307	9,575	6,460	15,101	4,034,952

Table 17.--Net volume of timber on timberland in Idaho by class of timber, and softwoods and hardwoods, 1981

Class of timber	Softwoods	Hardwoods	All classes
	- - - - - - - Million cubic feet - - - - - - -		
Sawtimber trees:			
Saw-log portion	23,066.6	125.7	23,192.3
Upper-stem portion	2,400.6	35.5	2,436.1
Total	25,467.2	161.2	25,628.4
Poletimber trees	4,719.0	239.1	4,958.1
All growing stock trees	30,186.2	400.3	30,586.5
Sound cull trees	167.4	11.2	178.6
Rotten cull trees	397.0	24.8	421.8
Salvable dead trees	1,968.2	29.0	1,997.2
All timber	32,718.8	465.3	33,184.1

Table 18.--Net volume of growing stock on timberland in Idaho by ownership class and species, 1981

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	- - - - - - - - - - Million cubic feet - - - - - - - - - - - -				
Douglas-fir	5,936.0	998.7	467.3	1,145.3	8,547.3
Ponderosa pine	1,983.5	300.5	142.6	501.0	2,927.6
Western white pine	902.8	236.7	67.4	116.4	1,323.3
Lodgepole pine	3,292.9	263.8	136.5	386.1	4,079.3
Whitebark pine	140.3	7.0	--	--	147.3
Limber pine	--	2.1	--	4.0	6.1
Western larch	778.8	221.1	191.2	231.7	1,422.8
Grand fir	2,588.4	587.0	665.8	400.6	4,241.8
Subalpine fir	1,800.3	109.4	62.4	39.9	2,012.0
White fir	95.1	--	--	--	95.1
Engelmann spruce	1,858.2	107.8	72.3	28.6	2,066.9
Western hemlock	1,077.8	136.5	129.4	59.6	1,403.3
Western redcedar	1,134.9	285.3	332.0	161.2	1,913.4
Total softwoods	21,589.0	3,255.9	2,266.9	3,074.4	30,186.2
Aspen	50.9	99.6	4.2	121.7	276.4
Cottonwood	16.0	9.3	13.4	85.2	123.9
Total hardwoods	66.9	108.9	17.6	206.9	400.3
All species	21,655.9	3,364.8	2,284.5	3,281.3	30,586.5

Table 19.--Net volume of sawtimber (International ¼-inch rule) on timberland in Idaho by ownership class and species, 1981

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	- - - - Million board feet, International ¼-inch rule - - - - -				
Douglas-fir	28,062.4	4,504.7	2,127.5	5,029.5	39,724.1
Ponderosa pine	11,122.6	1,652.8	731.7	2,512.9	16,020.0
Western white pine	4,059.5	1,366.5	357.6	606.1	6,389.7
Lodgepole pine	9,414.1	722.4	395.4	1,088.1	11,620.0
Whitebark pine	562.2	22.3	--	--	584.5
Limber pine	--	6.6	--	11.3	17.9
Western larch	3,401.4	906.1	954.1	961.8	6,223.4
Grand fir	12,670.6	3,017.0	2,707.7	1,602.1	19,997.4
Subalpine fir	6,804.5	389.2	227.8	115.3	7,536.8
White fir	485.3	--	--	--	485.3
Engelmann spruce	9,131.6	580.6	323.2	134.8	10,170.2
Western hemlock	4,367.6	659.6	530.1	215.3	5,772.6
Western redcedar	5,347.9	1,331.5	1,347.3	527.1	8,553.8
Total softwoods	95,429.7	15,159.3	9,702.4	12,804.3	133,095.7
Aspen	78.5	98.7	8.1	89.1	274.4
Cottonwood	26.6	32.4	62.2	384.3	505.5
Total hardwoods	105.1	131.1	70.3	473.4	779.9
All species	95,534.8	15,290.4	9,772.7	13,277.7	133,875.6

Table 20.--Net volume of sawtimber (Scribner rule) on timberland in Idaho by ownership class and species, 1981

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	- - - - - - - Million board feet, Scribner rule - - - - - - - -				
Douglas-fir	24,975.5	3,814.5	1,815.5	4,234.4	34,839.9
Ponderosa pine	9,899.1	1,401.1	610.8	2,069.5	13,980.5
Western white pine	3,613.1	1,197.3	314.5	526.3	5,651.2
Lodgepole pine	8,378.7	609.9	333.3	916.1	10,238.0
Whitebark pine	500.4	18.2	--	--	518.6
Limber pine	--	5.5	--	9.8	15.3
Western larch	3,027.2	746.2	785.0	763.6	5,322.0
Grand fir	11,276.9	2,625.7	2,328.4	1,369.4	17,600.4
Subalpine fir	6,056.1	327.9	191.8	95.1	6,670.9
White fir	432.0	--	--	--	432.0
Engelmann spruce	8,127.2	506.7	279.8	117.1	9,030.8
Western hemlock	3,887.2	572.8	456.2	180.1	5,096.3
Western redcedar	4,759.7	1,105.2	1,103.4	418.8	7,387.1
Total softwoods	84,933.1	12,931.0	8,218.7	10,700.2	116,783.0
Aspen	69.8	81.3	7.1	74.7	232.9
Cottonwood	23.8	28.4	55.1	333.5	440.8
Total hardwoods	93.6	109.7	62.2	408.2	673.7
All species	85,026.7	13,040.7	8,280.9	11,108.4	117,456.7

Table 21.--Net volume of growing stock on timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)													All classes
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Million cubic feet													
Douglas-fir	318.5	548.8	771.7	892.3	1,067.6	909.5	806.3	707.2	586.9	486.3	386.6	280.5	785.1	8,547.3
Ponderosa pine	30.2	70.0	93.8	168.6	177.4	198.8	167.1	187.5	195.0	202.5	204.8	198.0	1,033.9	2,927.6
Western white pine	26.4	44.5	79.3	101.3	119.6	116.3	154.7	118.8	108.3	114.9	89.2	61.3	188.7	1,323.3
Lodgepole pine	608.5	1,076.9	1,010.4	700.4	361.2	184.2	78.5	32.7	18.6	4.8	0.9	1.1	1.1	4,079.3
Whitebark pine	9.5	20.2	22.4	20.2	21.4	24.2	10.3	5.6	4.8	2.6	1.8	1.3	3.0	147.3
Limber pine	0.2	2.1	1.4	0.2	1.6	0.1	0.1	0.2	0.1	--	([1])	0.1	--	6.1
Western larch	90.6	148.3	177.2	162.3	163.5	125.6	111.3	98.5	80.5	58.8	46.7	36.8	122.7	1,422.8
Grand fir	195.8	318.7	415.0	430.3	446.8	396.7	379.1	307.0	230.9	219.5	203.6	163.2	535.2	4,241.8
Subalpine fir	193.6	282.9	316.2	304.5	254.2	210.0	147.9	109.4	82.9	44.3	35.3	12.7	18.1	2,012.0
White fir	1.6	2.8	3.0	5.8	6.8	6.9	8.2	6.5	5.4	6.0	5.6	4.0	32.5	95.1
Engelmann spruce	48.4	104.1	142.5	174.7	211.1	208.6	198.1	207.7	200.8	161.4	109.5	82.9	217.1	2,066.9
Western hemlock	105.9	255.5	128.4	127.8	153.0	129.3	121.3	91.0	74.0	64.0	40.7	34.8	77.6	1,403.3
Western redcedar	88.8	126.2	156.5	159.2	158.3	140.5	141.4	143.9	118.2	91.8	82.5	84.3	421.8	1,913.4
Total softwoods	1,718.0	3,001.0	3,317.8	3,247.6	3,142.5	2,650.7	2,324.3	2,016.0	1,706.4	1,456.9	1,207.2	961.0	3,436.8	30,186.2
Aspen	92.7	83.3	44.8	30.1	11.7	6.3	3.6	1.9	1.5	0.2	--	0.3	--	276.4
Cottonwood	6.0	3.0	9.3	13.4	12.8	13.5	14.5	6.9	10.1	8.7	3.4	3.3	19.0	123.9
Total hardwoods	98.7	86.3	54.1	43.5	24.5	19.8	18.1	8.8	11.6	8.9	3.4	3.6	19.0	400.3
All species	1,816.7	3,087.3	3,371.9	3,291.1	3,167.0	2,670.5	2,342.4	2,024.8	1,718.0	1,465.8	1,210.6	964.6	3,455.8	30,586.5

[1]Less than 0.05 million cubic feet.

Table 22.--Net volume of sawtimber (International ¼-inch rule) on timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Million board feet, International ¼-inch rule											
Douglas-fir	2,961.1	4,406.7	5,468.8	4,726.3	4,257.5	3,759.9	3,208.3	2,682.3	2,177.6	1,601.5	4,474.1	39,724.1
Ponderosa pine	317.4	785.0	935.6	1,097.8	947.7	1,094.5	1,147.9	1,176.4	1,183.0	1,156.2	6,178.5	16,020.0
Western white pine	311.1	505.5	613.4	561.6	752.5	590.3	555.3	593.8	477.2	330.0	1,099.0	6,389.7
Lodgepole pine	4,237.2	3,795.1	1,921.5	960.1	401.7	167.7	96.1	24.0	4.7	5.9	6.0	11,620.0
Whitebark pine	93.4	103.3	112.7	125.9	52.9	27.5	24.1	13.0	9.2	7.3	15.2	584.5
Limber pine	3.9	1.2	9.2	0.4	0.3	1.6	0.5	--	0.3	0.5	--	17.9
Western larch	757.8	941.0	920.6	698.5	595.6	516.8	416.6	314.1	247.5	192.0	622.9	6,223.4
Grand fir	1,559.4	2,196.6	2,362.4	2,123.0	2,036.1	1,659.2	1,298.9	1,266.9	1,194.2	1,015.9	3,284.8	19,997.4
Subalpine fir	1,295.8	1,531.3	1,285.0	1,046.7	757.1	564.0	446.1	244.8	196.2	69.4	100.4	7,536.8
White fir	13.6	29.9	35.5	35.6	42.4	33.5	29.5	32.9	31.0	22.0	179.4	485.3
Engelmann spruce	604.6	915.3	1,101.0	1,083.6	1,025.1	1,082.0	1,088.0	914.9	636.3	487.8	1,231.6	10,170.2
Western hemlock	460.9	603.1	766.4	692.1	674.1	523.0	455.7	421.8	276.0	250.9	648.6	5,772.6
Western redcedar	571.6	736.1	746.9	675.4	676.5	688.5	602.2	482.7	451.5	473.9	2,448.5	8,553.8
Total softwoods	13,187.8	16,550.1	16,279.0	13,827.0	12,219.5	10,708.5	9,369.2	8,167.6	6,884.7	5,613.3	20,289.0	133,095.7
Aspen	XXXXXXXX	147.5	57.6	31.6	18.0	9.4	7.4	1.3	--	1.6	--	274.4
Cottonwood	XXXXXXXX	69.0	65.2	66.7	69.3	32.7	46.2	39.0	14.9	15.0	87.5	505.5
Total hardwoods	XXXXXXXX	216.5	122.8	98.3	87.3	42.1	53.6	40.3	14.9	16.6	87.5	779.9
All species	13,187.8	16,766.6	16,401.8	13,925.3	12,306.8	10,750.6	9,422.8	8,207.9	6,899.6	5,629.9	20,376.5	133,875.6

Table 23.--Net volume of sawtimber (Scribner rule) on timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Million board feet, Scribner rule											
Douglas-fir	2,497.8	3,762.9	4,761.5	4,147.0	3,755.1	3,327.6	2,855.4	2,387.2	1,938.1	1,425.3	3,982.0	34,839.9
Ponderosa pine	235.0	625.3	786.2	936.9	820.9	951.6	1,008.7	1,038.9	1,049.6	1,028.7	5,498.7	13,980.5
Western white pine	267.9	436.7	536.8	497.3	668.5	525.4	493.5	528.5	424.8	293.7	978.1	5,651.2
Lodgepole pine	3,730.0	3,327.6	1,698.7	853.3	357.4	149.3	85.5	21.3	4.2	5.3	5.4	10,238.0
Whitebark pine	82.5	91.3	100.1	111.9	46.9	24.5	21.4	11.6	8.2	6.6	13.6	518.6
Limber pine	3.5	0.9	7.8	0.3	0.3	1.4	0.5	--	0.2	0.4	--	15.3
Western larch	615.3	760.9	774.3	598.6	521.6	456.9	369.6	279.4	220.2	170.9	554.3	5,322.0
Grand fir	1,325.4	1,883.9	2,063.3	1,871.4	1,806.7	1,475.6	1,156.0	1,127.5	1,062.9	904.1	2,923.6	17,600.4
Subalpine fir	1,145.6	1,344.4	1,137.1	928.7	673.0	501.5	397.0	217.9	174.6	61.8	89.3	6,670.9
White fir	12.1	26.6	31.6	31.7	37.7	29.8	26.3	29.3	27.6	19.6	159.7	432.0
Engelmann spruce	533.5	808.1	975.4	961.6	910.8	962.2	968.3	814.3	566.3	434.2	1,096.1	9,030.8
Western hemlock	394.6	519.4	675.8	614.9	599.9	465.5	404.7	375.3	245.7	223.2	577.3	5,096.3
Western redcedar	482.2	613.9	625.1	562.8	575.8	592.2	521.1	423.0	397.8	418.4	2,174.8	7,387.1
Total softwoods	11,325.4	14,201.9	14,173.7	12,116.4	10,774.6	9,463.5	8,308.0	7,254.2	6,120.2	4,992.2	18,052.9	116,783.0
Aspen	XXXXXXXX	121.6	49.9	27.9	16.0	8.3	6.6	1.2	--	1.4	--	232.9
Cottonwood	XXXXXXXX	57.2	55.6	58.0	60.9	28.9	41.0	34.7	13.3	13.4	77.8	440.8
Total hardwoods	XXXXXXXX	178.8	105.5	85.9	76.9	37.2	47.6	35.9	13.3	14.8	77.8	673.7
All species	11,325.4	14,380.7	14,279.2	12,202.3	10,851.5	9,500.7	8,355.6	7,290.1	6,133.5	5,007.0	18,130.7	117,456.7

Table 24.--Net annual growth of growing stock on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				
	National Forest	Other public	Forest industry	Nonindustrial private	Total
	- - - - - - - - - - Thousand cubic feet - - - - - - - - - -

Table 25.--Net annual growth of sawtimber (International ¼-inch rule) on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				
	National Forest	Other public	Forest industry	Nonindustrial private	Total
	- - - - Thousand board feet, International ¼-inch rule- - - -				
Douglas-fir	524,673	126,021	63,832	170,380	884,906
Ponderosa pine	136,885	39,919	20,988	94,924	292,716
Western white pine	51,793	13,035	2,880	21,693	89,401
Lodgepole pine	215,729	20,621	8,579	38,047	282,976
Whitebark pine	8,250	152	--	--	8,402
Limber pine	--	218	--	66	284
Western larch	60,172	13,391	16,129	15,762	105,454
Grand fir	358,959	86,916	94,661	52,897	593,433
Subalpine fir	106,581	9,812	5,190	928	122,511
White fir	4,138	--	--	--	4,138
Engelmann spruce	143,528	8,845	7,222	2,384	161,979
Western hemlock	147,584	15,850	15,194	6,382	185,010
Western redcedar	105,465	30,088	26,347	13,716	175,616
Total softwoods	1,863,757	364,868	261,022	417,179	2,906,826
Aspen	1,657	11,474	319	4,935	18,385
Cottonwood	297	710	1,748	7,850	10,605
Total hardwoods	1,954	12,184	2,067	12,785	28,990
All species	1,865,711	377,052	263,089	429,964	2,935,816

Table 26.--Net annual growth of sawtimber (Scribner rule) on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	- - - - - - - - Thousand board feet, Scribner rule - - - - - -				
Douglas-fir	466,959	112,313	57,478	153,837	790,587
Ponderosa pine	121,827	33,809	18,312	82,322	256,270
Western white pine	46,095	12,265	2,747	19,839	80,946
Lodgepole pine	191,999	18,944	8,108	34,641	253,692
Whitebark pine	7,341	142	--	--	7,483
Limber pine	--	199	--	60	259
Western larch	53,553	12,267	14,840	14,489	95,149
Grand fir	319,474	76,951	85,021	48,436	529,882
Subalpine fir	94,856	9,036	4,751	1,095	109,738
White fir	3,683	--	--	--	3,683
Engelmann spruce	127,740	7,962	6,488	2,146	144,336
Western hemlock	131,349	14,285	14,041	6,002	165,677
Western redcedar	93,864	25,950	22,551	11,853	154,218
Total softwoods	1,658,740	324,123	234,337	374,720	2,591,920
Aspen	1,475	8,936	298	4,044	14,753
Cottonwood	264	653	1,629	7,327	9,873
Total hardwoods	1,739	9,589	1,927	11,371	24,626
All species	1,660,479	333,712	236,264	386,091	2,616,546

Table 27.--Net annual growth of growing stock on timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)													All classes
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand cubic feet													
Douglas-fir	23,095	20,282	23,070	22,741	22,284	17,982	12,653	9,175	6,661	4,415	3,297	2,152	3,668	171,475
Ponderosa pine	4,712	3,834	4,216	5,606	5,232	4,575	3,602	3,623	3,220	2,320	2,454	1,917	7,762	53,073
Western white pine	1,154	670	1,967	2,660	1,093	1,751	1,918	210	142	809	191	-23	929	13,471
Lodgepole pine	28,847	26,481	17,290	9,847	2,687	1,507	-54	44	-18	-96	-36	-23	5	86,481
Whitebark pine	762	505	333	-62	180	136	86	43	64	-64	14	21	41	2,059
Limber pine	2	41	14	1	8	-13	([1])	3	1	--	([1])	1	--	58
Western larch	6,612	4,580	4,485	3,791	3,331	1,438	1,091	1,011	223	-336	-199	-261	228	25,994
Grand fir	21,160	15,977	17,393	15,000	13,830	10,179	8,810	6,017	3,177	3,269	3,145	1,949	5,768	125,674
Subalpine fir	12,940	6,752	4,711	3,590	3,431	1,774	1,205	433	61	46	241	61	-321	34,924
White fir	21	39	30	52	66	80	65	55	44	62	49	30	244	837
Engelmann spruce	2,949	3,698	4,021	3,520	4,013	3,247	2,355	2,570	1,978	1,251	989	788	1,405	32,784
Western hemlock	4,860	4,667	4,999	4,354	4,511	2,968	2,275	1,697	1,264	904	639	464	694	34,296
Western redcedar	15,333	4,433	5,098	4,270	4,222	2,965	2,751	1,794	1,707	1,188	1,222	1,286	3,246	49,515
Total softwoods	122,447	91,959	87,627	75,370	64,888	48,589	36,757	26,675	18,524	13,768	12,006	8,362	23,669	630,641
Aspen	9,595	2,240	1,087	574	214	165	72	31	43	4	--	3	--	14,028
Cottonwood	554	171	386	643	422	-122	459	-25	234	252	83	50	321	3,428
Total hardwoods	10,149	2,411	1,473	1,217	636	43	531	6	277	256	83	53	321	17,456
All species	132,596	94,370	89,100	76,587	65,524	48,632	37,288	26,681	18,801	14,024	12,089	8,415	23,990	648,097

[1]Less than 0.05 thousand cubic feet.

Table 28.--Net annual growth of sawtimber (International ¼-inch rule) on timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand board feet, International ¼-inch rule											
Douglas-fir	216,262	151,678	144,699	113,141	78,589	56,593	41,794	27,871	20,384	13,031	20,864	884,906
Ponderosa pine	28,608	38,767	35,294	31,061	23,408	23,426	20,531	14,663	15,651	12,771	48,536	292,716
Western white pine	21,302	17,717	8,977	11,682	11,749	2,952	2,232	4,951	1,618	193	6,028	89,401
Lodgepole pine	201,538	56,812	16,134	8,980	-79	330	35	-484	-193	-118	21	282,976
Whitebark pine	5,822	-408	946	871	505	293	357	-441	79	117	261	8,402
Limber pine	279	6	41	-75	2	20	5	--	2	4	--	284
Western larch	34,940	25,854	21,941	9,450	7,072	6,923	1,653	-1,699	-930	-1,340	1,590	105,454
Grand fir	147,668	97,035	85,282	60,909	52,015	36,146	20,410	21,407	20,227	13,311	39,023	593,433
Subalpine fir	57,951	22,169	20,212	10,566	7,101	2,720	949	432	1,431	358	-1,378	122,511
White fir	137	269	343	413	336	284	240	339	269	163	1,345	4,138
Engelmann spruce	26,978	19,773	22,803	18,428	13,585	15,047	14,015	9,280	7,023	5,622	9,425	161,979
Western hemlock	38,970	32,361	33,176	21,548	16,533	12,489	9,511	7,032	4,748	3,510	5,132	185,010
Western redcedar	37,540	23,160	22,540	15,644	14,498	9,164	9,897	7,322	7,593	7,971	20,287	175,616
Total softwoods	817,995	485,193	412,388	302,618	225,314	166,387	121,629	90,673	77,902	55,593	151,134	2,906,826
Aspen	XXXXX	15,698	1,147	812	355	135	200	22	--	16	--	18,385
Cottonwood	XXXXX	3,286	2,043	-798	1,974	-229	1,007	1,114	386	242	1,580	10,605
Total hardwoods	XXXXX	18,984	3,190	14	2,329	-94	1,207	1,136	386	258	1,580	28,990
All species	817,995	504,177	415,578	302,632	227,643	166,293	122,836	91,809	78,288	55,851	152,714	2,935,816

Table 29.--Net annual growth of sawtimber (Scribner rule) on timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand board feet, Scribner rule											
Douglas-fir	191,762	136,045	129,965	101,404	70,462	50,639	37,197	24,806	18,142	11,597	18,568	790,587
Ponderosa pine	21,349	34,142	31,265	27,702	20,708	20,668	18,264	13,353	14,141	11,387	43,291	256,270
Western white pine	19,101	16,246	8,378	10,537	10,598	2,650	2,048	4,412	1,440	171	5,365	80,946
Lodgepole pine	179,984	51,255	14,718	8,126	-28	294	30	-430	-171	-105	19	253,692
Whitebark pine	5,182	-361	845	775	451	260	318	-393	70	104	232	7,483
Limber pine	249	5	38	-63	2	18	5	--	1	4	--	259
Western larch	30,889	23,363	19,967	8,802	6,447	6,255	1,526	-1,496	-827	-1,192	1,415	95,149
Grand fir	128,743	87,969	77,166	55,037	46,825	32,340	18,169	19,055	18,001	11,847	34,730	529,882
Subalpine fir	51,796	20,003	18,087	9,471	6,341	2,440	849	385	1,274	319	-1,227	109,738
White fir	122	239	305	368	299	253	214	302	239	145	1,197	3,683
Engelmann spruce	24,030	17,652	20,331	16,432	12,112	13,403	12,474	8,259	6,251	5,004	8,388	144,336
Western hemlock	34,705	29,096	29,982	19,332	14,718	11,115	8,537	6,276	4,225	3,123	4,568	165,677
Western redcedar	33,314	20,069	19,179	13,162	12,634	8,251	8,960	6,618	6,780	7,122	18,129	154,218
Total softwoods	721,226	435,723	370,226	271,085	201,569	148,586	108,591	81,147	69,566	49,526	134,675	2,591,920
Aspen	XXXXX	12,283	1,054	754	330	121	178	19	--	14	--	14,753
Cottonwood	XXXXX	3,020	1,881	-579	1,831	-150	908	996	344	216	1,406	9,873
Total hardwoods	XXXXX	15,303	2,935	175	2,161	-29	1,086	1,015	344	230	1,406	24,626
All species	721,226	451,026	373,161	271,260	203,730	148,557	109,677	82,162	69,910	49,756	136,081	2,616,546

Table 30.--Annual mortality of growing stock on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	Thousand cubic feet				
Douglas-fir	16,728	2,928	1,490	3,089	24,235
Ponderosa pine	3,262	563	1,336	1,485	6,646
Western white pine	11,819	2,383	1,796	1,014	17,012
Lodgepole pine	16,606	1,219	561	851	19,237
Whitebark pine	727	5	--	--	732
Limber pine	--	14	--	--	14
Western larch	3,138	614	961	1,312	6,025
Grand fir	5,511	1,090	2,592	2,994	12,187
Subalpine fir	14,519	481	--	481	15,481
White fir	232	--	--	--	232
Engelmann spruce	5,340	238	--	--	5,578
Western hemlock	919	242	214	277	1,652
Western redcedar	2,155	32	632	153	2,972
Total softwoods	80,956	9,809	9,582	11,656	112,003
Aspen	363	173	1	1,468	2,005
Cottonwood	246	29	--	713	988
Total hardwoods	609	202	1	2,181	2,993
All species	81,565	10,011	9,583	13,837	114,996

Table 31.--Annual mortality of sawtimber (International ¼-inch rule) on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	Thousand board feet, International ¼-inch rule				
Douglas-fir	85,304	11,726	4,931	13,013	114,974
Ponderosa pine	17,622	2,840	6,993	7,019	34,474
Western white pine	51,140	13,939	2,714	3,366	71,159
Lodgepole pine	67,658	3,825	3,227	2,653	77,363
Whitebark pine	4,002	29	--	--	4,031
Limber pine	--	77	--	--	77
Western larch	15,734	2,905	4,008	3,536	26,183
Grand fir	31,049	4,822	10,689	11,445	58,005
Subalpine fir	63,669	2,178	--	2,035	67,882
White fir	1,038	--	--	--	1,038
Engelmann spruce	29,950	1,378	--	--	31,328
Western hemlock	4,678	1,303	966	1,326	8,273
Western redcedar	10,694	176	2,168	770	13,808
Total softwoods	382,538	45,198	35,696	45,163	508,595
Aspen	559	101	--	--	660
Cottonwood	75	140	--	3,468	3,683
Total hardwoods	634	241	--	3,468	4,343
All species	383,172	45,439	35,696	48,631	512,938

Table 32.--Annual mortality of sawtimber (Scribner rule) on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	- - - - - - Thousand board feet, Scribner rule - - - - - - - -				
Douglas-fir	75,921	10,051	4,198	10,876	101,046
Ponderosa pine	15,683	2,376	5,719	5,685	29,463
Western white pine	45,513	12,136	2,378	2,879	62,906
Lodgepole pine	60,216	3,199	2,685	2,323	68,423
Whitebark pine	3,562	24	--	--	3,586
Limber pine	--	64	--	--	64
Western larch	14,005	2,395	3,475	3,143	23,018
Grand fir	27,634	4,136	9,153	9,749	50,672
Subalpine fir	56,665	1,833	--	1,715	60,213
White fir	925	--	--	--	925
Engelmann spruce	26,656	1,192	--	--	27,848
Western hemlock	4,164	1,127	742	1,050	7,083
Western redcedar	9,518	140	1,811	594	12,063
Total softwoods	340,462	38,673	30,161	38,014	447,310
Aspen	498	89	--	--	587
Cottonwood	67	121	--	2,997	3,185
Total hardwoods	565	210	--	2,997	3,772
All species	341,027	38,883	30,161	41,011	451,082

Table 33.--Annual mortality of growing stock on timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)													All classes
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand cubic feet													
Douglas-fir	1,513	1,921	2,134	1,825	2,629	1,703	2,292	1,981	1,113	1,547	1,154	788	3,635	24,235
Ponderosa pine	249	389	225	664	479	1,115	619	57	209	949	119	170	1,402	6,646
Western white pine	1,055	1,989	1,522	1,050	2,613	1,102	1,348	1,729	1,369	915	878	672	770	17,012
Lodgepole pine	1,907	2,868	4,294	3,598	3,268	1,394	1,090	365	245	132	49	27	--	19,237
Whitebark pine	23	26	23	315	75	90	39	3	5	98	1	3	31	732
Limber pine	--	--	--	--	--	14	--	--	--	--	--	--	--	14
Western larch	635	612	704	144	217	792	427	109	465	784	369	379	388	6,025
Grand fir	752	1,270	1,366	1,807	1,312	1,310	1,246	553	774	531	229	477	560	12,187
Subalpine fir	791	1,697	2,784	2,455	1,564	1,734	1,070	1,182	838	494	237	95	540	15,481
White fir	14	23	7	12	21	22	21	18	12	11	15	5	51	232
Engelmann spruce	109	195	300	390	293	531	760	456	324	592	732	46	850	5,578
Western hemlock	7	85	525	233	78	80	214	57	1	114	9	34	215	1,652
Western redcedar	168	488	--	168	--	314	48	555	237	224	34	--	736	2,972
Total softwoods	7,223	11,563	13,884	12,661	12,549	10,201	9,174	7,065	5,592	6,391	3,826	2,696	9,178	112,003
Aspen	620	1,021	220	82	44	12	6	--	--	--	--	--	--	2,005
Cottonwood	232	--	--	--	--	551	--	205	--	--	--	--	--	988
Total hardwoods	852	1,021	220	82	44	563	6	205	--	--	--	--	--	2,993
All species	8,075	12,584	14,104	12,743	12,593	10,764	9,180	7,270	5,592	6,391	3,826	2,696	9,178	114,996

Table 34.--Annual mortality of sawtimber (International ¼-inch rule) on timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand board feet, International ¼-inch rule											
Douglas-fir	8,560	9,923	14,174	9,028	12,847	11,259	6,689	8,828	6,931	4,880	21,855	114,974
Ponderosa pine	704	2,946	2,695	6,345	3,690	333	1,281	5,915	646	1,148	8,771	34,474
Western white pine	5,571	5,458	13,404	5,430	6,860	8,994	7,032	4,963	4,984	3,964	4,499	71,159
Lodgepole pine	21,186	20,026	18,367	7,619	5,811	1,952	1,305	691	267	139	--	77,363
Whitebark pine	74	1,841	479	561	203	15	25	659	7	17	150	4,031
Limber pine	--	--	--	77	--	--	--	--	--	--	--	77
Western larch	2,500	967	1,389	4,601	2,366	565	2,437	4,787	2,052	2,122	2,397	26,183
Grand fir	5,197	9,865	7,498	7,762	6,807	3,013	5,485	2,853	1,437	3,418	4,670	58,005
Subalpine fir	12,278	13,022	8,432	9,736	5,914	6,541	4,705	2,696	1,408	505	2,645	67,882
White fir	31	64	107	114	110	93	67	58	83	28	283	1,038
Engelmann spruce	1,552	2,500	1,819	2,954	4,395	2,519	1,687	3,771	4,475	250	5,406	31,328
Western hemlock	2,144	1,054	472	422	1,328	320	4	734	63	204	1,528	8,273
Western redcedar	--	850	--	1,680	249	3,202	1,117	1,051	290	--	5,369	13,808
Total softwoods	59,797	68,516	68,836	56,329	50,580	38,806	31,834	37,006	22,643	16,675	57,573	508,595
Aspen	XXXXX	387	195	52	26	--	--	--	--	--	--	660
Cottonwood	XXXXX	--	--	2,714	--	969	--	--	--	--	--	3,683
Total hardwoods	XXXXX	387	195	2,766	26	969	--	--	--	--	--	4,343
All species	59,797	68,903	69,031	59,095	50,606	39,775	31,834	37,006	22,643	16,675	57,573	512,938

Table 35.--Annual mortality of sawtimber (Scribner rule) on timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand board feet, Scribner rule											
Douglas-fir	7,234	8,552	12,244	7,917	11,326	10,000	5,953	7,857	6,169	4,343	19,451	101,046
Ponderosa pine	458	2,185	2,250	5,307	3,218	296	1,140	5,206	575	1,022	7,806	29,463
Western white pine	4,934	4,609	11,806	4,812	6,100	8,003	6,258	4,417	4,435	3,528	4,004	62,906
Lodgepole pine	18,620	17,764	16,225	6,775	5,165	1,737	1,161	615	237	124	--	68,423
Whitebark pine	66	1,638	425	499	181	13	22	587	6	15	134	3,586
Limber pine	--	--	--	64	--	--	--	--	--	--	--	64
Western larch	2,190	784	1,206	3,973	2,095	500	2,168	4,254	1,826	1,889	2,133	23,018
Grand fir	4,411	8,360	6,519	6,821	6,001	2,661	4,882	2,539	1,279	3,042	4,157	50,672
Subalpine fir	10,897	11,446	7,492	8,656	5,260	5,819	4,186	2,400	1,254	449	2,354	60,213
White fir	28	57	95	101	98	83	60	52	74	25	252	925
Engelmann spruce	1,381	2,211	1,611	2,623	3,905	2,242	1,502	3,356	3,983	223	4,811	27,848
Western hemlock	1,749	819	420	373	1,182	285	4	653	56	182	1,360	7,083
Western redcedar	--	659	--	1,495	222	2,840	933	878	258	--	4,778	12,063
Total softwoods	51,968	59,084	60,293	49,416	44,753	34,479	28,269	32,814	20,152	14,842	51,240	447,310
Aspen	XXXXX	344	174	46	23	--	--	--	--	--	--	587
Cottonwood	XXXXX	--	--	2,338	--	847	--	--	--	--	--	3,185
Total hardwoods	XXXXX	344	174	2,384	23	847	--	--	--	--	--	3,772
All species	51,968	59,428	60,467	51,800	44,776	35,326	28,269	32,814	20,152	14,842	51,240	451,082

Table 36.--Annual mortality of growing stock on timberland in Idaho by cause of death and species, 1980

Species	Cause of death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand cubic feet								
Douglas-fir	2,792	7,151	207	--	8,591	184	--	5,310	24,235
Ponderosa pine	3,620	1,345	--	--	693	104	43	841	6,646
Western white pine	2,699	13,474	--	--	--	--	154	685	17,012
Lodgepole pine	5,864	6,624	--	--	205	4,248	--	2,296	19,237
Whitebark pine	--	--	--	--	--	--	--	732	732
Limber pine	--	14	--	--	--	--	--	--	14
Western larch	2,552	1,398	--	--	587	50	61	1,377	6,025
Grand fir	4,356	6,006	--	--	723	37	182	883	12,187
Subalpine fir	225	773	--	--	579	--	--	13,904	15,481
White fir	--	--	--	--	--	--	--	232	232
Engelmann spruce	--	515	--	--	3,094	--	375	1,594	5,578
Western hemlock	--	--	--	--	192	--	482	978	1,652
Western redcedar	--	597	--	--	1,753	--	622	--	2,972
Total softwoods	22,108	37,897	207	--	16,417	4,623	1,919	28,832	112,003
Aspen	--	1,502	--	--	--	17	22	464	2,005
Cottonwood	--	--	--	--	--	--	--	988	988
Total hardwoods	--	1,502	--	--	--	17	22	1,452	2,993
All species	22,108	39,399	207	--	16,417	4,640	1,941	30,284	114,996

Table 37.--Annual mortality of sawtimber (International ¼-inch rule) on timberland in Idaho by cause of death and species, 1980

Species	Cause of death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand board feet, International ¼-inch rule								
Douglas-fir	17,205	29,203	1,434	--	51,031	155	--	15,946	114,974
Ponderosa pine	19,328	7,947	--	--	3,510	--	211	3,478	34,474
Western white pine	14,044	52,949	--	--	--	--	--	4,166	71,159
Lodgepole pine	27,207	41,603	--	--	1,283	--	--	7,270	77,363
Whitebark pine	--	--	--	--	--	--	--	4,031	4,031
Limber pine	--	77	--	--	--	--	--	--	77
Western larch	13,108	2,679	--	--	917	--	--	9,479	26,183
Grand fir	21,011	30,186	--	--	2,201	--	--	4,607	58,005
Subalpine fir	1,241	4,205	--	--	3,061	--	--	59,375	67,882
White fir	--	--	--	--	--	--	--	1,038	1,038
Engelmann spruce	--	2,705	--	--	18,028	--	2,001	8,594	31,328
Western hemlock	--	--	--	--	838	--	2,223	5,212	8,273
Western redcedar	--	3,671	--	--	10,137	--	--	--	13,808
Total softwoods	113,144	175,225	1,434	--	91,006	155	4,435	123,196	508,595
Aspen	--	--	--	--	--	--	660	--	660
Cottonwood	--	--	--	--	--	--	--	3,683	3,683
Total hardwoods	--	--	--	--	--	--	660	3,683	4,343
All species	113,144	175,225	1,434	--	91,006	155	5,095	126,879	512,938

Table 38.--Annual mortality of sawtimber (Scribner rule) on timberland in Idaho by cause of death and species, 1980

Species	Cause of death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand board feet, Scribner rule								
Douglas-fir	15,158	25,679	1,327	--	45,534	96	--	13,252	101,046
Ponderosa pine	16,810	6,908	--	--	2,985	--	169	2,591	29,463
Western white pine	12,565	46,746	--	--	--	--	--	3,595	62,906
Lodgepole pine	24,720	36,375	--	--	1,084	--	--	6,244	68,423
Whitebark pine	--	--	--	--	--	--	--	3,586	3,586
Limber pine	--	64	--	--	--	--	--	--	64
Western larch	11,822	2,324	--	--	833	--	--	8,039	23,018
Grand fir	18,416	26,425	--	--	1,927	--	--	3,904	50,672
Subalpine fir	1,035	3,819	--	--	2,766	--	--	52,593	60,213
White fir	--	--	--	--	--	--	--	925	925
Engelmann spruce	--	2,266	--	--	16,167	--	1,822	7,593	27,848
Western hemlock	--	--	--	--	723	--	1,798	4,562	7,083
Western redcedar	--	3,029	--	--	9,034	--	--	--	12,063
Total softwoods	100,526	153,635	1,327	--	81,053	96	3,789	106,884	447,310
Aspen	--	--	--	--	--	--	587	--	587
Cottonwood	--	--	--	--	--	--	--	3,185	3,185
Total hardwoods	--	--	--	--	--	--	587	3,185	3,772
All species	100,526	153,635	1,327	--	81,053	96	4,376	110,069	451,082

Table 39.--Annual removals[1] of growing stock on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	Thousand cubic feet				
Douglas-fir	29,865	7,055	26,555	16,677	80,152
Engelmann spruce	4,128	976	3,670	2,305	11,079
Lodgepole pine	11,463	2,708	10,193	6,401	30,765
Ponderosa pine	15,799	3,732	14,048	8,822	42,401
True-firs[2]	34,550	8,163	30,722	19,293	92,728
Western larch	8,120	1,918	7,220	4,534	21,792
Western hemlock	2,114	499	1,880	1,181	5,674
Western redcedar	17,974	4,247	15,982	10,036	48,239
Western whitepine	12,387	2,926	11,015	6,918	33,246
Other species	421	100	374	236	1,131
All species	136,821	32,324	121,659	76,403	367,207

[1]Includes sawlogs, veneer logs, pulpwood, cedar products, utility poles, house logs, posts and poles, logging residues, and other removals.

[2]Includes grand and subalpine fir.

Table 40.--Annual removals[1] of sawtimber (International ¼-inch rule) on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	Thousand board feet, International ¼-inch rule				
Douglas-fir	172,381	40,581	152,572	96,261	461,795
Engelmann spruce	23,828	5,609	21,089	13,306	63,832
Lodgepole pine	66,166	15,576	58,562	36,948	177,252
Ponderosa pine	91,191	21,468	80,712	50,922	244,293
True-firs[2]	199,428	46,949	176,512	111,363	534,252
Western larch	46,867	11,034	41,482	26,171	125,554
Western hemlock	12,203	2,873	10,801	6,814	32,691
Western redcedar	103,747	24,424	91,825	57,933	277,929
Western whitepine	71,501	16,833	63,285	39,927	191,546
Other species	2,432	573	2,153	1,358	6,516
All species	789,744	185,920	698,993	441,003	2,115,660

[1]Includes sawlogs, veneer logs, pulpwood, cedar products, utility poles, house logs, posts and poles, logging residues, and other removals.

[2]Includes grand and subalpine fir.

Table 41.--Annual removals[1] of sawtimber (Scribner rule) on timberland in Idaho by ownership class and species, 1980

Species	Ownership class				Total
	National Forest	Other public	Forest industry	Nonindustrial private	
	- - - - - - - Thousand board feet, Scribner rule - - - - - - -				
Douglas-fir	142,013	33,643	126,714	79,548	381,918
Engelmann spruce	19,630	4,650	17,515	10,995	52,790
Lodgepole pine	54,510	12,913	48,637	30,533	146,593
Ponderosa pine	75,127	17,797	67,033	42,082	202,039
True-firs[2]	164,296	38,922	146,595	92,030	441,843
Western larch	38,612	9,147	34,452	21,628	103,839
Western hemlock	10,053	2,382	8,970	5,632	27,037
Western redcedar	85,471	20,248	76,263	47,877	229,859
Western whitepine	58,906	13,955	52,559	32,996	158,416
Other species	2,003	475	1,788	1,122	5,388
All species	650,621	154,132	580,526	364,443	1,749,722

[1]Includes sawlogs, veneer logs, pulpwood, cedar products, utility poles, house logs, posts and poles, logging residues, and other removals.

[2]Includes grand and subalpine fir.

Table 42.--Annual removals of growing stock on timberland in Idaho by source and ownership class, 1980

Source	Ownership class							Total Removals
	National Forest	Other public			Private			
		Other Federal	State	Total	Forest industry	Nonindustrial private	Total	
	- - - - - - - - - - - - - - - - - - Thousand cubic feet - - - - - - - - - - - - - - - - - -							
Roundwood products:								
Sawlogs	91,983	1,911	15,527	17,438	55,091	53,521	108,612	218,033
Veneer logs	9,176	602	5,420	6,022	27,280	1,221	28,501	43,699
Total	101,159	2,513	20,947	23,460	82,371	54,742	137,113	261,732
Other roundwood products:								
Pulpwood	14,745	233	3,209	3,442	22,825	11,194	34,019	52,206
Cedar products	1,924	62	732	794	2,244	1,126	3,370	6,088
Utility poles	556	--	771	771	80	392	472	1,799
Houselogs	1,842	--	79	79	51	59	110	2,031
Posts and poles	898	--	69	69	131	125	256	1,223
Total	19,965	295	4,860	5,155	25,331	12,896	38,227	63,347
Total roundwood products	121,124	2,808	25,807	28,615	107,702	67,638	175,340	325,079
Logging residues	14,305	332	3,048	3,380	12,720	7,988	20,708	38,393
Other removals	1,392	32	297	329	1,237	777	2,014	3,735
Total removals	136,821	3,172	29,152	32,324	121,659	76,403	198,062	367,207

Table 43.--Annual removals of sawtimber (International ¼-inch rule) on timberland in Idaho by source and ownership class, 1980

Source	Ownership class							
		Other public			Private			
	National Forest	Other Federal	State	Total	Forest industry	Nonindustrial private	Total	Total Removals
	Thousand board feet, International ¼-inch rule							
Roundwood products:								
Sawlogs	573,735	11,920	96,848	108,768	343,625	333,832	677,457	1,359,960
Veneer logs	57,235	3,755	33,807	37,562	170,157	7,616	177,773	272,570
Total	630,970	15,675	130,655	146,330	513,782	341,448	855,230	1,632,530
Other roundwood products:								
Pulpwood	81,385	1,286	17,712	18,998	125,982	61,785	187,767	288,150
Cedar products	8,945	288	3,403	3,691	10,433	5,235	15,668	28,304
Utility poles	2,585	--	3,585	3,585	372	1,822	2,194	8,364
Houselogs	8,564	--	367	367	237	274	511	9,442
Posts and poles	3,705	--	285	285	540	516	1,056	5,046
Total	105,184	1,574	25,352	26,926	137,564	69,632	207,196	339,306
Total roundwood products	736,154	17,249	156,007	173,256	651,346	411,080	1,062,426	1,971,836
Logging residues	44,921	1,043	9,571	10,614	39,944	25,084	65,028	120,563
Other removals	8,669	200	1,850	2,050	7,703	4,839	12,542	23,261
Total removals	789,744	18,492	167,428	185,920	698,993	441,003	1,139,996	2,115,660

Table 44.--Annual removals of sawtimber (Scribner rule) on timberland in Idaho by source and ownership class, 1980

Source	Ownership class							
		Other public			Private			
	National Forest	Other Federal	State	Total	Forest industry	Nonindustrial private	Total	Total Removals
	Thousand board feet, Scribner rule							
Roundwood products:								
Sawlogs	459,917	9,554	77,638	87,192	275,456	267,605	543,061	1,090,170
Veneer logs	45,878	3,010	27,099	30,109	136,398	6,103	142,501	218,488
Total	505,795	12,564	104,737	117,301	411,854	273,708	685,562	1,308,658
Other roundwood products:								
Pulpwood	73,727	1,163	16,043	17,206	114,126	55,972	170,098	261,031
Cedar products	9,620	308	3,660	3,968	11,222	5,628	16,850	30,438
Utility poles	2,780	--	3,855	3,855	400	1,958	2,358	8,993
Houselogs	9,208	--	393	393	256	296	552	10,153
Posts and poles	1,796	--	138	138	262	250	512	2,446
Total	97,131	1,471	24,089	25,560	126,266	64,104	190,370	313,061
Total roundwood products	602,926	14,035	128,826	142,861	538,120	337,812	875,932	1,621,719
Logging residues	39,980	929	8,518	9,447	35,550	22,325	57,875	107,302
Other removals	7,715	178	1,646	1,824	6,856	4,306	11,162	20,701
Total removals	650,621	15,142	138,990	154,132	580,526	364,443	944,969	1,749,722

Table 45.--Total land area on National Forests in Idaho by forest type and land class, 1981

Item	Land class			
	Deferred	Reserved	Nonreserved	Total
	- - - - - - - - - - - Thousand acres - - - - - - - - - - -			
Forest land				
Forest type:				
Douglas-fir	373.9	847.1	4,357.4	5,578.4
Hemlock	9.3	27.1	388.3	424.7
Ponderosa pine	118.0	168.8	1,156.5	1,443.3
Western white pine	1.7	6.7	131.0	139.4
Lodgepole pine	203.7	685.0	2,644.2	3,532.9
Western larch	20.8	45.2	528.5	594.5
Western redcedar	9.6	20.3	252.1	282.0
Grand fir	60.6	116.3	922.3	1,099.2
Engelmann spruce-fir	128.5	542.7	2,247.4	2,918.6
Aspen	5.7	17.7	136.6	160.0
Cottonwood	3.5	14.6	43.2	61.3
Oak	--	1.0	--	1.0
Total forest land	935.3	2,492.5	12,807.5	16,235.3
Nonforest land				4,187.5
Total land area				20,422.8

Table 46.--Net volume, net annual growth, and annual mortality of growing stock and sawtimber on National Forest timberland in Idaho by softwoods and hardwoods.

Species	Growing stock	Sawtimber	
		International ¼-inch rule	Scribner rule
	- Million cubic feet -	- Million board feet -	
Net volume, 1981:			
Softwoods	21,589.0	95,429.7	84,933.1
Hardwoods	66.9	105.1	93.6
Total	21,655.9	95,534.8	85,026.7
	- Thousand cubic feet -	- Thousand board feet -	
Net annual growth, 1980:			
Softwoods	381,163	1,863,757	1,658,740
Hardwoods	1,436	1,954	1,739
Total	382,599	1,865,711	1,660,479
Annual mortality, 1980:			
Softwoods	80,956	382,538	340,462
Hardwoods	609	634	565
Total	81,565	383,172	341,027

Table 47.--Area of National Forest timberland in Idaho by forest type and stand-size class, 1981

Forest type	Stand-size class				
	Sawtimber	Poletimber	Sapling and seedling	Nonstocked	Total
	Thousand acres				
Douglas-fir	2,346.5	241.7	249.1	124.6	2,961.9
Hemlock	214.7	72.1	76.0	6.1	368.9
Ponderosa pine	737.0	14.5	48.9	51.1	851.5
Western white pine	80.3	41.0	1.9	--	123.2
Lodgepole pine	820.4	764.7	241.4	55.9	1,882.4
Western larch	178.9	143.4	157.8	6.5	486.6
Western redcedar	228.4	4.9	10.4	2.8	246.5
Grand fir	590.1	123.3	131.1	0.6	845.1
Engelmann spruce-fir	1,010.9	162.3	99.5	39.5	1,312.2
Aspen	23.0	24.9	23.1	--	71.0
Cottonwood	3.9	--	--	--	3.9
All types	6,234.1	1,592.8	1,039.2	287.1	9,153.2[1]

[1]Does not include 3,654.3 thousand acres of productivity class 0-19 as this information was not available by stand-size class (Table 11).

Table 48.--Number of growing-stock trees on National Forest timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)															All classes
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand trees															
Douglas-fir	135,259	105,611	87,338	61,054	45,266	33,862	29,135	17,526	11,967	8,457	6,076	4,302	2,860	1,896	4,050	554,659
Ponderosa pine	10,966	7,308	9,467	6,497	3,819	3,726	3,051	2,380	1,592	1,251	1,427	1,247	1,103	935	3,377	58,146
Western white pine	1,996	3,500	4,957	4,756	3,180	2,540	1,915	1,471	1,361	759	628	581	343	204	334	28,525
Lodgepole pine	150,470	207,856	164,548	118,274	63,107	26,166	9,944	3,716	1,318	388	183	44	6	8	4	746,032
Whitebark pine	14,434	8,909	6,722	4,532	2,418	1,316	943	722	249	100	72	31	18	11	19	40,496
Western larch	3,119	9,449	13,739	10,108	7,151	3,943	2,816	1,367	1,055	757	570	330	233	152	388	55,177
Grand fir	71,765	45,069	38,829	25,702	17,023	10,596	7,173	4,530	3,689	2,377	1,533	1,283	961	706	1,487	232,723
Subalpine fir	187,210	119,289	71,286	42,309	27,054	15,218	9,219	5,425	3,062	1,701	1,091	532	319	112	133	483,960
White fir	2,333	1,491	668	529	263	277	216	154	130	77	50	45	36	21	147	6,437
Engelmann spruce	36,083	21,046	16,176	14,030	10,501	7,809	6,331	4,375	3,079	2,474	1,822	1,268	722	466	821	127,003
Western hemlock	43,406	21,589	18,196	9,996	7,539	4,319	4,028	2,418	1,752	1,039	684	560	263	224	358	116,371
Western redcedar	48,416	22,741	11,166	8,359	5,562	4,381	3,173	1,772	1,695	1,356	908	672	535	479	1,151	112,366
Total softwoods	705,457	573,858	443,092	306,146	192,883	114,153	77,944	45,856	30,949	20,736	15,044	10,895	7,399	5,214	12,269	2,561,895
Aspen	8,426	7,169	4,068	3,178	1,282	683	270	43	14	--	--	--	--	--	--	25,133
Cottonwood	1,110	624	1,385	307	207	2	12	6	10	3	1	--	1	--	5	3,673
Total hardwoods	9,536	7,793	5,453	3,485	1,489	685	282	49	24	3	1	--	1	--	5	28,806
All species	714,993	581,651	448,545	309,631	194,372	114,838	78,226	45,905	30,973	20,739	15,045	10,895	7,400	5,214	12,274	2,590,701

Table 49.--Net volume of timber on National Forest timberland in Idaho by class of timber, and softwoods and hardwoods, 1981

Class of timber	Softwoods	Hardwoods	All classes
	- - - - - - - - Million cubic feet - - - - - - - -		
Sawtimber trees:			
Saw-log portion	16,764.8	18.6	16,783.4
Upper-stem portion	1,632.2	5.2	1,637.4
Total	18,397.0	23.8	18,420.8
Poletimber trees	3,192.0	43.1	3,235.1
All growing stock trees	21,589.0	66.9	21,655.9
Sound cull trees	121.1	11.1	132.2
Rotten cull trees	338.7	16.9	355.6
Salvable dead trees	1,616.4	7.2	1,623.6
All timber	23,665.2	102.1	23,767.3

Table 50.--Net volume of growing stock and sawtimber on National Forest timberland in Idaho by species, 1981

Species	Growing stock	Sawtimber	
		International ¼-inch rule	Scribner rule
	- Million cubic feet -	- Million board feet -	
Douglas-fir	5,936.0	28,062.4	24,975.5
Ponderosa pine	1,983.5	11,122.6	9,899.1
Western white pine	902.8	4,059.5	3,613.1
Lodgepole pine	3,292.9	9,414.1	8,378.7
Whitebark pine	140.3	562.2	500.4
Western larch	778.8	3,401.4	3,027.2
Grand fir	2,588.4	12,670.6	11,276.9
Subalpine fir	1,800.3	6,804.5	6,056.1
White fir	95.1	485.3	432.0
Engelmann spruce	1,858.2	9,131.6	8,127.2
Western hemlock	1,077.8	4,367.6	3,887.2
Western redcedar	1,134.9	5,347.9	4,759.7
Total softwoods	21,589.0	95,429.7	84,933.1
Aspen	50.9	78.5	69.8
Cottonwood	16.0	26.6	23.8
Total hardwoods	66.9	105.1	93.6
All species	21,655.9	95,534.8	85,026.7

Table 51.--Net volume of growing stock on National Forest timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)													
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Million cubic feet													
Douglas-fir	161.6	320.5	441.6	545.4	702.8	602.9	548.7	503.8	466.2	388.4	316.5	242.2	695.4	5,936.0
Ponderosa pine	9.3	22.7	32.1	53.7	73.5	82.6	80.9	87.9	127.3	141.9	164.0	169.2	938.4	1,983.5
Western white pine	13.4	37.1	49.0	63.8	71.2	85.8	110.1	82.0	81.4	91.9	64.1	48.4	104.6	902.8
Lodgepole pine	456.2	865.1	844.6	549.2	302.2	154.5	71.7	26.5	15.4	4.6	0.9	1.1	0.9	3,292.9
Whitebark pine	8.0	19.2	20.8	19.3	20.8	23.9	9.8	5.4	4.7	2.5	1.8	1.2	2.9	140.3
Western larch	26.0	58.8	83.2	75.7	84.4	60.5	66.3	63.2	58.7	40.6	34.6	27.1	99.7	778.8
Grand fir	86.8	179.1	212.5	235.3	235.5	217.8	239.8	196.7	165.5	166.0	147.9	123.5	382.0	2,588.4
Subalpine fir	164.5	242.4	290.1	260.8	230.7	189.6	139.9	101.7	78.2	42.6	30.4	11.9	17.5	1,800.3
White fir	1.6	2.8	3.0	5.8	6.8	6.9	8.2	6.5	5.4	6.0	5.6	4.0	32.5	95.1
Engelmann spruce	37.5	89.8	126.5	158.2	193.2	192.1	182.6	194.5	176.1	144.7	96.7	73.2	193.1	1,858.2
Western hemlock	82.5	221.6	88.8	81.6	112.6	97.7	89.8	67.9	56.8	54.6	31.7	26.6	65.6	1,077.8
Western redcedar	24.7	60.8	72.7	93.5	90.6	72.5	91.3	98.6	76.3	67.6	63.3	62.9	260.1	1,134.9
Total softwoods	1,072.1	2,119.9	2,264.9	2,142.3	2,124.3	1,786.8	1,639.1	1,434.7	1,312.0	1,151.4	957.5	791.3	2,792.7	21,589.0
Aspen	8.5	14.4	10.1	9.9	6.2	1.2	0.6	--	--	--	--	--	--	50.9
Cottonwood	4.4	2.5	3.2	([1])	0.3	0.3	0.8	0.1	0.1	--	0.1	--	4.2	16.0
Total hardwoods	12.9	16.9	13.3	9.9	6.5	1.5	1.4	0.1	0.1	--	0.1	--	4.2	66.9
All species	1,085.0	2,136.8	2,278.2	2,152.2	2,130.8	1,788.3	1,640.5	1,434.8	1,312.1	1,151.4	957.6	791.3	2,796.9	21,655.9

[1]Less than 0.05 million cubic feet.

Table 52.--Net volume of sawtimber (International ¼-inch rule) on National Forest timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Million board feet, International ¼-inch rule											
Douglas-fir	1,731.9	2,675.2	3,523.3	3,035.2	2,808.2	2,601.2	2,510.7	2,110.9	1,763.0	1,371.8	3,931.0	28,062.4
Ponderosa pine	112.1	262.7	386.9	443.9	439.1	498.8	735.1	805.5	930.4	971.2	5,536.9	11,122.6
Western white pine	181.1	295.0	334.7	383.4	497.1	372.1	390.8	453.8	324.9	248.0	578.6	4,059.5
Lodgepole pine	3,512.4	2,915.8	1,580.3	791.4	363.4	134.0	78.5	22.8	4.7	5.9	4.9	9,414.1
Whitebark pine	86.9	98.2	109.4	124.5	50.0	26.5	23.6	12.5	9.2	6.6	14.8	562.2
Western larch	351.7	421.8	444.5	304.9	323.9	301.5	281.4	198.1	169.7	129.3	474.6	3,401.4
Grand fir	777.6	1,159.2	1,200.7	1,138.4	1,283.7	1,065.1	946.7	984.7	895.3	782.5	2,436.7	12,670.6
Subalpine fir	1,191.0	1,300.2	1,158.6	936.1	713.7	521.4	419.2	234.7	168.1	65.0	96.5	6,804.5
White fir	13.6	29.9	35.5	35.6	42.4	33.5	29.5	32.9	31.0	22.0	179.4	485.3
Engelmann spruce	538.5	824.4	1,000.8	991.2	938.3	1,008.2	951.0	817.5	558.8	426.6	1,076.3	9,131.6
Western hemlock	306.3	372.2	552.9	518.1	499.8	394.5	355.3	367.7	222.7	201.5	576.6	4,367.6
Western redcedar	253.8	404.7	400.2	327.7	421.1	458.4	391.7	358.8	349.4	358.7	1,623.4	5,347.9
Total softwoods	9,056.9	10,759.3	10,727.8	9,030.4	8,380.7	7,415.2	7,113.5	6,399.9	5,427.2	4,589.1	16,529.7	95,429.7
Aspen	XXXXXXX	42.6	28.1	5.4	2.4	--	--	--	--	--	--	78.5
Cottonwood	XXXXXXX	--	1.6	1.1	3.3	0.8	0.4	--	0.4	--	19.0	26.6
Total hardwoods	XXXXXXX	42.6	29.7	6.5	5.7	0.8	0.4	--	0.4	--	19.0	105.1
All species	9,056.9	10,801.9	10,757.5	9,036.9	8,386.4	7,416.0	7,113.9	6,399.9	5,427.6	4,589.1	16,548.7	95,534.8

Table 53.--Net volume of sawtimber (Scribner rule) on National Forest timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Million board feet, Scribner rule											
Douglas-fir	1,541.4	2,380.9	3,135.7	2,701.3	2,499.3	2,315.1	2,234.5	1,878.7	1,569.1	1,220.9	3,498.6	24,975.5
Ponderosa pine	99.8	233.8	344.3	395.1	390.8	443.9	654.2	716.9	828.1	864.4	4,927.8	9,899.1
Western white pine	161.2	262.6	297.9	341.2	442.4	331.2	347.8	403.9	289.2	220.7	515.0	3,613.1
Lodgepole pine	3,126.0	2,595.1	1,406.5	704.3	323.4	119.3	69.9	20.3	4.2	5.3	4.4	8,378.7
Whitebark pine	77.3	87.4	97.4	110.8	44.5	23.6	21.0	11.1	8.2	5.9	13.2	500.4
Western larch	313.0	375.4	395.6	271.4	288.3	268.3	250.4	176.3	151.0	115.1	422.4	3,027.2
Grand fir	692.1	1,031.7	1,068.6	1,013.2	1,142.5	947.9	842.6	876.4	796.8	696.4	2,168.7	11,276.9
Subalpine fir	1,060.0	1,157.2	1,031.2	833.1	635.2	464.0	373.1	208.9	149.6	57.9	85.9	6,056.1
White fir	12.1	26.6	31.6	31.7	37.7	29.8	26.3	29.3	27.6	19.6	159.7	432.0
Engelmann spruce	479.3	733.7	890.7	882.2	835.1	897.3	846.4	727.6	497.3	379.7	957.9	8,127.2
Western hemlock	272.6	331.3	492.1	461.1	444.8	351.1	316.2	327.3	198.2	179.3	513.2	3,887.2
Western redcedar	225.9	360.2	356.2	291.7	374.8	408.0	348.6	319.3	311.0	319.2	1,444.8	4,759.7
Total softwoods	8,060.7	9,575.9	9,547.8	8,037.1	7,458.8	6,599.5	6,331.0	5,696.0	4,830.3	4,084.4	14,711.6	84,933.1
Aspen	XXXXXXX	37.9	25.0	4.8	2.1	--	--	--	--	--	--	69.8
Cottonwood	XXXXXXX	--	1.4	1.0	3.0	0.7	0.4	--	0.4	--	16.9	23.8
Total hardwoods	XXXXXXX	37.9	26.4	5.8	5.1	0.7	0.4	--	0.4	--	16.9	93.6
All species	8,060.7	9,613.8	9,574.2	8,042.9	7,463.9	6,600.2	6,331.4	5,696.0	4,830.7	4,084.4	14,728.5	85,026.7

Table 54.--Net annual growth of growing stock and sawtimber on National Forest timberland in Idaho by species, 1980

Species	Growing stock	Sawtimber	
		International ¼-inch rule	Scribner rule
	- Thousand cubic feet -	- Thousand board feet -	
Douglas-fir	97,203	524,673	466,959
Ponderosa pine	23,267	136,885	121,827
Western white pine	8,522	51,793	46,095
Lodgepole pine	66,227	215,729	191,999
Whitebark pine	1,743	8,250	7,341
Western larch	12,125	60,172	53,553
Grand fir	70,416	358,959	319,474
Subalpine fir	25,578	106,581	94,856
White fir	837	4,138	3,683
Engelmann spruce	28,443	143,528	127,740
Western hemlock	24,577	147,584	131,349
Western redcedar	22,225	105,465	93,864
Total softwoods	381,163	1,863,757	1,658,740
Aspen	870	1,657	1,475
Cottonwood	566	297	264
Total hardwoods	1,436	1,954	1,739
All species	382,599	1,865,711	1,660,479

Table 55.--Net annual growth of growing stock on National Forest timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)													
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand cubic feet													
Douglas-fir	11,330	11,565	11,429	11,574	12,041	10,078	7,406	5,623	4,837	3,471	2,591	1,828	3,430	97,203
Ponderosa pine	719	1,156	1,320	1,532	1,516	1,636	1,243	1,144	1,497	1,538	1,632	1,526	6,808	23,267
Western white pine	1,040	1,215	557	1,859	352	1,174	1,118	-166	-218	671	110	293	517	8,522
Lodgepole pine	22,603	20,754	13,316	6,394	2,252	1,045	118	-68	-51	-98	-18	-23	3	66,227
Whitebark pine	489	493	321	-70	178	135	81	42	64	-65	14	20	41	1,743
Western larch	1,864	2,239	2,593	1,988	1,706	779	540	678	3	175	-305	-260	125	12,125
Grand fir	7,702	9,541	9,547	8,388	6,948	5,642	5,837	4,029	2,025	2,669	2,317	1,489	4,282	70,416
Subalpine fir	6,836	5,694	4,217	3,097	2,887	1,405	1,110	312	53	48	193	54	-328	25,578
White fir	21	39	30	52	66	80	65	55	44	62	49	30	244	837
Engelmann spruce	2,314	3,133	3,451	2,992	3,578	2,888	2,156	2,335	1,763	1,096	852	685	1,200	28,443
Western hemlock	2,810	3,084	3,653	3,051	3,359	2,284	1,649	1,271	989	781	529	404	713	24,577
Western redcedar	1,728	2,309	2,186	2,604	2,418	1,403	1,921	1,149	1,282	1,078	1,036	1,041	2,070	22,225
Total softwoods	59,456	61,222	52,620	43,461	37,301	28,549	23,244	16,404	12,288	11,426	9,000	7,087	19,105	381,163
Aspen	326	319	57	98	57	10	3	--	--	--	--	--	--	870
Cottonwood	284	100	136	1	11	5	17	-9	1	--	([1])	--	20	566
Total hardwoods	610	419	193	99	68	15	20	-9	1	--	([1])	--	20	1,436
All species	60,066	61,641	52,813	43,560	37,369	28,564	23,264	16,395	12,289	11,426	9,000	7,087	19,125	382,599

[1]Less than 0.05 thousand cubic feet

Table 56.--Net annual growth of sawtimber (International ¼-inch rule) on National Forest timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand board feet, International ¼-inch rule											
Douglas-fir	113,400	82,882	81,918	65,416	46,902	35,325	30,812	21,909	15,912	10,992	19,205	524,673
Ponderosa pine	7,362	11,269	10,259	10,898	8,039	7,606	9,663	9,794	10,481	9,941	41,573	136,885
Western white pine	7,779	12,405	4,443	8,368	7,422	677	-60	4,096	1,123	2,041	3,499	51,793
Lodgepole pine	158,911	36,762	13,791	6,515	881	-282	-157	-498	-88	-118	12	215,729
Whitebark pine	5,772	-455	938	863	481	287	355	-444	79	114	260	8,250
Western larch	19,947	14,737	12,051	5,426	3,720	4,645	208	1,435	-1,596	-1,317	916	60,172
Grand fir	65,728	56,121	46,330	36,843	37,820	26,018	14,533	18,282	15,871	10,586	30,827	358,959
Subalpine fir	51,726	19,260	17,188	8,544	6,566	1,996	850	434	1,122	315	-1,420	106,581
White fir	137	269	343	413	336	284	240	339	269	163	1,345	4,138
Engelmann spruce	23,896	16,843	20,388	16,481	12,501	13,700	12,577	8,177	6,050	4,901	8,014	143,528
Western hemlock	29,974	24,163	26,446	17,541	12,910	10,010	7,823	6,281	4,062	3,126	5,248	147,584
Western redcedar	11,843	14,075	13,210	7,964	10,356	6,063	7,835	6,690	6,589	6,650	14,190	105,465
Total softwoods	496,475	288,331	247,305	185,272	147,934	106,329	84,679	76,495	59,874	47,394	123,669	1,863,757
Aspen	XXXXXXX	1,304	298	42	13	--	--	--	--	--	--	1,657
Cottonwood	XXXXXXX	7	64	31	107	-48	4	--	3	--	129	297
Total hardwoods	XXXXXXX	1,311	362	73	120	-48	4	--	3	--	129	1,954
All species	496,475	289,642	247,667	185,345	148,054	106,281	84,683	76,495	59,877	47,394	123,798	1,865,711

Table 57.--Net annual growth of sawtimber (Scribner rule) on National Forest timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, Scribner rule											
Douglas-fir	100,926	73,765	72,907	58,220	41,743	31,439	27,423	19,499	14,162	9,783	17,092	466,959
Ponderosa pine	6,552	10,029	9,131	9,699	7,155	6,769	8,600	8,717	9,328	8,847	37,000	121,827
Western white pine	6,923	11,040	3,954	7,448	6,606	603	-53	3,645	999	1,816	3,114	46,095
Lodgepole pine	141,431	32,718	12,274	5,798	784	-251	-140	-443	-78	-105	11	191,999
Whitebark pine	5,137	-405	835	768	428	255	316	-395	70	101	231	7,341
Western larch	17,753	13,116	10,725	4,829	3,311	4,134	185	1,277	-1,420	-1,172	815	53,553
Grand fir	58,498	49,948	41,234	32,790	33,660	23,156	12,934	16,271	14,125	9,422	27,436	319,474
Subalpine fir	46,036	17,141	15,297	7,604	5,844	1,776	757	386	999	280	-1,264	94,856
White fir	122	239	305	368	299	253	214	302	239	145	1,197	3,683
Engelmann spruce	21,267	14,990	18,145	14,668	11,126	12,193	11,194	7,278	5,385	4,362	7,132	127,740
Western hemlock	26,677	21,505	23,537	15,611	11,490	8,909	6,962	5,590	3,615	2,782	4,671	131,349
Western redcedar	10,540	12,527	11,757	7,088	9,217	5,396	6,973	5,954	5,864	5,919	12,629	93,864
Total softwoods	441,862	256,613	220,101	164,891	131,663	94,632	75,365	68,081	53,288	42,180	110,064	1,658,740
Aspen	XXXXXXX	1,161	265	37	12	--	--	--	--	--	--	1,475
Cottonwood	XXXXXXX	6	57	27	95	-43	4	--	3	--	115	264
Total hardwoods	XXXXXXX	1,167	322	64	107	-43	4	--	3	--	115	1,739
All species	441,862	257,780	220,423	164,955	131,770	94,589	75,369	68,081	53,291	42,180	110,179	1,660,479

Table 58.--Annual mortality of growing stock and sawtimber on National Forest timberland in Idaho by species, 1980

Species	Growing stock	Sawtimber	
		International ¼-inch rule	Scribner rule
	- Thousand cubic feet -	- Thousand board feet -	
Douglas-fir	16,728	85,304	75,921
Ponderosa pine	3,262	17,622	15,683
Western white pine	11,819	51,140	45,513
Lodgepole pine	16,606	67,658	60,216
Whitebark pine	727	4,002	3,562
Western larch	3,138	15,734	14,005
Grand fir	5,511	31,049	27,634
Subalpine fir	14,519	63,669	56,665
White fir	232	1,038	925
Engelmann spruce	5,340	29,950	26,656
Western hemlock	919	4,678	4,164
Western redcedar	2,155	10,694	9,518
Total softwoods	80,956	382,538	340,462
Aspen	363	559	498
Cottonwood	246	75	67
Total hardwoods	609	634	565
All species	81,565	383,172	341,027

Table 59.--Annual mortality of growing stock on National Forest timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)													
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand cubic feet													
Douglas-fir	773	925	1,094	1,167	1,374	1,141	1,532	1,742	958	1,080	1,023	703	3,216	16,728
Ponderosa pine	84	309	12	22	41	55	330	57	209	584	119	170	1,270	3,262
Western white pine	324	913	1,469	421	1,700	913	1,060	1,357	1,369	753	697	248	595	11,819
Lodgepole pine	1,553	2,306	3,755	3,423	2,615	1,355	799	365	245	132	31	27	--	16,606
Whitebark pine	23	26	23	315	70	90	39	3	5	98	1	3	31	727
Western larch	148	207	102	58	164	314	366	78	451	169	369	324	388	3,138
Grand fir	353	409	371	584	614	451	295	247	739	208	229	477	534	5,511
Subalpine fir	787	1,661	2,455	2,076	1,524	1,676	1,033	1,163	809	482	218	95	540	14,519
White fir	14	23	7	12	21	22	21	18	12	11	15	5	51	232
Engelmann spruce	109	195	300	354	271	482	677	456	307	561	732	46	850	5,340
Western hemlock	7	79	183	19	78	55	214	57	1	114	9	5	98	919
Western redcedar	168	317	--	4	--	314	48	534	--	--	34	--	736	2,155
Total softwoods	4,343	7,370	9,771	8,455	8,472	6,868	6,414	6,077	5,105	4,192	3,477	2,103	8,309	80,956
Aspen	79	75	83	64	44	12	6	--	--	--	--	--	--	363
Cottonwood	232	--	--	--	--	--	--	14	--	--	--	--	--	246
Total hardwoods	311	75	83	64	44	12	6	14	--	--	--	--	--	609
All species	4,654	7,445	9,854	8,519	8,516	6,880	6,420	6,091	5,105	4,192	3,477	2,103	8,309	81,565

Table 60.--Annual mortality of sawtimber (International ¼-inch rule) on National Forest timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, International ¼-inch rule											
Douglas-fir	4,846	6,600	7,525	5,971	8,603	9,888	5,793	6,124	6,159	4,357	19,438	85,304
Ponderosa pine	48	115	213	287	1,965	333	1,281	3,708	646	1,148	7,878	17,622
Western white pine	5,323	1,957	8,124	4,315	5,117	6,688	7,032	3,939	3,834	1,428	3,383	51,140
Lodgepole pine	18,167	19,012	14,612	7,403	4,215	1,952	1,305	691	162	139	--	67,658
Whitebark pine	74	1,841	450	561	203	15	25	659	7	17	150	4,002
Western larch	640	448	1,067	1,711	2,002	377	2,350	934	2,052	1,756	2,397	15,734
Grand fir	1,442	3,382	3,723	3,204	1,884	1,500	5,258	1,301	1,437	3,418	4,500	31,049
Subalpine fir	11,215	11,009	8,222	9,429	5,722	6,441	4,552	2,627	1,302	505	2,645	63,669
White fir	31	64	107	114	110	93	67	58	83	28	283	1,038
Engelmann spruce	1,552	2,302	1,701	2,666	3,918	2,519	1,599	3,562	4,475	250	5,406	29,950
Western hemlock	529	88	472	290	1,328	320	4	734	63	37	813	4,678
Western redcedar	--	22	--	1,680	249	3,084	--	--	290	--	5,369	10,694
Total softwoods	43,867	46,840	46,216	37,631	35,316	33,210	29,266	24,337	20,510	13,083	52,262	382,538
Aspen	XXXXXXX	286	195	52	26	--	--	--	--	--	--	559
Cottonwood	XXXXXXX	--	--	--	--	75	--	--	--	--	--	75
Total hardwoods	XXXXXXX	286	195	52	26	75	--	--	--	--	--	634
All species	43,867	47,126	46,411	37,683	35,342	33,285	29,266	24,337	20,510	13,083	52,262	383,172

Table 61.--Annual mortality of sawtimber (Scribner rule) on National Forest timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, Scribner rule											
Douglas-fir	4,313	5,874	6,697	5,314	7,657	8,800	5,156	5,450	5,482	3,878	17,300	75,921
Ponderosa pine	43	102	190	255	1,749	296	1,140	3,300	575	1,022	7,011	15,683
Western white pine	4,737	1,742	7,230	3,840	4,554	5,952	6,258	3,506	3,412	1,271	3,011	45,513
Lodgepole pine	16,169	16,921	13,005	6,589	3,751	1,737	1,161	615	144	124	--	60,216
Whitebark pine	66	1,638	401	499	181	13	22	587	6	15	134	3,562
Western larch	570	399	950	1,523	1,782	336	2,092	831	1,826	1,563	2,133	14,005
Grand fir	1,283	3,010	3,313	2,852	1,677	1,335	4,680	1,158	1,279	3,042	4,005	27,634
Subalpine fir	9,981	9,798	7,318	8,392	5,093	5,732	4,051	2,338	1,159	449	2,354	56,665
White fir	28	57	95	101	98	83	60	52	74	25	252	925
Engelmann spruce	1,381	2,049	1,514	2,373	3,487	2,242	1,423	3,170	3,983	223	4,811	26,656
Western hemlock	471	78	420	258	1,182	285	4	653	56	33	724	4,164
Western redcedar	--	20	--	1,495	222	2,745	--	--	258	--	4,778	9,518
Total softwoods	39,042	41,688	41,133	33,491	31,433	29,556	26,047	21,660	18,254	11,645	46,513	340,462
Aspen	XXXXXX	255	174	46	23	--	--	--	--	--	--	498
Cottonwood	XXXXXX	--	--	--	--	67	--	--	--	--	--	67
Total hardwoods	XXXXXX	255	174	46	23	67	--	--	--	--	--	565
All species	39,042	41,943	41,307	33,537	31,456	29,623	26,047	21,660	18,254	11,645	46,513	341,027

Table 62.--Annual mortality of growing stock on National Forest timberland in Idaho by cause of death and species, 1980

Species	Cause of Death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand cubic feet								
Douglas-fir	1,927	4,936	143	--	5,930	127	--	3,665	16,728
Ponderosa pine	1,777	660	--	--	340	51	21	413	3,262
Western white pine	1,875	9,361	--	--	--	--	107	476	11,819
Lodgepole pine	5,062	5,718	--	--	177	3,667	--	1,982	16,606
White bark pine	--	--	--	--	--	--	--	727	727
Western larch	1,329	728	--	--	306	26	32	717	3,138
Grand fir	1,970	2,716	--	--	327	17	82	399	5,511
Subalpine fir	211	725	--	--	543	--	--	13,040	14,519
White fir	--	--	--	--	--	--	--	232	232
Engelmann spruce	--	493	--	--	2,962	--	359	1,526	5,340
Western hemlock	--	--	--	--	107	--	268	544	919
Western redcedar	--	433	--	--	1,271	--	451	--	2,155
Total softwoods	14,151	25,770	143	--	11,963	3,888	1,320	23,721	80,956
Aspen	--	272	--	--	--	3	4	84	363
Cottonwood	--	--	--	--	--	--	--	246	246
Total hardwoods	--	272	--	--	--	3	4	330	609
All species	14,151	26,042	143	--	11,963	3,891	1,324	24,051	81,565

Table 63.--Annual mortality of sawtimber (International ¼-inch rule) on National Forest timberland in Idaho by cause of death and species, 1980

Species	Cause of Death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand board feet, International ¼-inch rule								
Douglas-fir	12,765	21,667	1,064	--	37,862	115	--	11,831	85,304
Ponderosa pine	9,880	4,062	--	--	1,794	--	108	1,778	17,622
Western white pine	10,093	38,053	--	--	--	--	--	2,994	51,140
Lodgepole pine	23,794	36,384	--	--	1,122	--	--	6,358	67,658
White bark pine	--	--	--	--	--	--	--	4,002	4,002
Western larch	7,877	1,610	--	--	551	--	--	5,696	15,734
Grand fir	11,247	16,158	--	--	1,178	--	--	2,466	31,049
Subalpine fir	1,164	3,944	--	--	2,871	--	--	55,690	63,669
White fir	--	--	--	--	--	--	--	1,038	1,038
Engelmann spruce	--	2,586	--	--	17,235	--	1,913	8,216	29,950
Western hemlock	--	--	--	--	474	--	1,257	2,947	4,678
Western redcedar	--	2,843	--	--	7,851	--	--	--	10,694
Total softwoods	76,820	127,307	1,064	--	70,938	115	3,278	103,016	382,538
Aspen	--	--	--	--	--	--	559	--	559
Cottonwood	--	--	--	--	--	--	--	75	75
Total hardwoods	--	--	--	--	--	--	559	75	634
All species	76,820	127,307	1,064	--	70,938	115	3,837	103,091	383,172

Table 64.--Annual mortality of sawtimber (Scribner rule) on National Forest timberland in Idaho by cause of death and species, 1980

Species	Cause of Death								Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	
	Thousand board feet, Scribner rule								
Douglas-fir	11,389	19,294	997	--	34,212	72	--	9,957	75,921
Ponderosa pine	8,948	3,677	--	--	1,589	--	90	1,379	15,683
Western white pine	9,091	33,821	--	--	--	--	--	2,601	45,513
Lodgepole pine	21,755	32,012	--	--	954	--	--	5,495	60,216
White bark pine	--	--	--	--	--	--	--	3,562	3,562
Western larch	7,193	1,414	--	--	507	--	--	4,891	14,005
Grand fir	10,043	14,411	--	--	1,051	--	--	2,129	27,634
Subalpine fir	974	3,594	--	--	2,603	--	--	49,494	56,665
White fir	--	--	--	--	--	--	--	925	925
Engelmann spruce	--	2,169	--	--	15,475	--	1,744	7,268	26,656
Western hemlock	--	--	--	--	425	--	1,057	2,682	4,164
Western redcedar	--	2,390	--	--	7,128	--	--	--	9,518
Total softwoods	69,393	112,782	997	--	63,944	72	2,891	90,383	340,462
Aspen	--	--	--	--	--	--	498	--	498
Cottonwood	--	--	--	--	--	--	--	67	67
Total hardwoods	--	--	--	--	--	--	498	67	565
All species	69,393	112,782	997	--	63,944	72	3,389	90,450	341,027

Table 65.--Area of other public and privately owned forest land in Idaho with percent standard error, 1981

Item	Softwoods		Hardwoods		All types	
	Thousand acres	Percent standard error	Thousand acres	Percent standard error	Thousand acres	Percent standard error
Timberland	4,463.6	±1.0	389.5	± 7.7	4,853.1	±0.9
Woodland	610.8	±2.9	207.6	±12.8	818.4	±3.2
Reserved forest land:[1]						
Timberland	34.5		--		34.5	
Woodland	--		--		--	
Total forest land	5,108.9		597.1		5,706.0	

[1]Reserved land areas are estimated from aerial photos without field verification; therefore, standard errors are not calculated.

Table 66.--Net volume, net annual growth, and annual mortality of growing stock and sawtimber on other public and privately owned timberland in Idaho with percent standard error

Item	Softwoods		Hardwoods		All species	
	Volume	Percent standard error	Volume	Percent standard error	Volume	Percent standard error
Net volume, 1981:						
Growing stock (Million cubic feet)	8,597.2	±2.5	333.4	±10.5	8,930.6	±2.4
Sawtimber[1] (Million board feet)	37,666.0	±2.7	674.8	±17.6	38,340.8	±2.7
Sawtimber[2] (Million board feet)	31,849.9	±2.7	580.1	±17.9	32,430.0	±2.7
Net annual growth, 1980:						
Growing stock (Thousand cubic feet)	249,478	±3.7	16,020	±14.7	265,498	±3.6
Sawtimber[1] (Thousand board feet)	1,043,069	±3.5	27,036	±22.0	1,070,105	±3.5
Sawtimber[2] (Thousand board feet)	933,180	±3.5	22,887	±21.0	956,067	±3.4
Annual mortality, 1980:						
Growing stock (Thousand cubic feet)	31,047	±10.3	2,384	±38.2	33,431	±9.9
Sawtimber[1] (Thousand board feet)	126,057	±10.7	3,709	±73.9	129,766	±10.6
Sawtimber[2] (Thousand board feet)	106,848	±10.8	3,207	±73.8	110,055	±10.6

[1]International ¼-inch rule.
[2]Scribner rule.

Table 67.--Total land area on other public and private ownerships in Idaho by forest type and land class, 1981

Item	Land class		
	Reserved	Nonreserved	Total
	- - - - - - - Thousand acres - - - - - - - -		
Forest land			
Forest type:			
Timberland:			
Douglas-fir	0.7	1,488.3	1,489.0
Hemlock	--	153.3	153.3
Ponderosa pine	0.5	749.9	750.4
Western white pine	--	108.0	108.0
Lodgepole pine	33.3	375.9	409.2
Western larch	--	128.1	128.1
Western redcedar	--	364.0	364.0
Grand fir	--	844.8	844.8
Engelmann spruce-fir	--	251.4	251.4
Aspen	--	310.6	310.6
Cottonwood	--	78.8	78.8
Total timberland	34.5	4,853.1	4,887.6
Woodland:			
Pinyon-juniper	--	80.7	80.7
Juniper	--	368.7	368.7
Western juniper	--	161.4	161.4
Oak	--	([1])	([1])
Mountain brush	--	42.3	42.3
Riparian	--	69.9	69.9
Other hardwoods	--	95.4	95.4
Total woodland	--	818.4	818.4
Total forest land	34.5	5,671.5	5,706.0
Nonforest land			26,762.2
Total land area			32,468.2

[1]Less than 50 acres.

Table 68.--Cubic feet of net volume, net annual growth, and annual mortality in trees on other public and privately owned forest land in Idaho by species

Species	Net Volume 1981	Net annual growth 1980	Annual Mortality 1980
	- Million cubic feet -	- Thousand cubic feet -	
Douglas-fir	2,616.4	74,418	7,507
Ponderosa pine	944.1	29,806	3,384
Western white pine	420.5	4,949	5,193
Lodgepole pine	786.4	20,254	2,631
Whitebark pine	7.0	316	5
Limber pine	6.1	59	14
Western larch	644.0	13,869	2,887
Grand fir	1,653.4	55,258	6,676
Subalpine fir	211.7	9,346	962
Engelmann spruce	208.7	4,341	238
Western hemlock	325.5	9,719	734
Western redcedar	778.9	27,310	817
Aspen	225.7	13,162	1,642
Cottonwood	108.5	2,884	742
Total timberland species	8,936.9	265,691	33,432
Pinyon/juniper	298.2	5,100	99
Woodland hardwoods	113.3	2,560	140
Total woodland species	411.5	7,660	239
Total all species	9,348.4	273,351	33,671

Table 69.--Area of other public and privately owned timberland in Idaho by forest type and stand-size class, 1981

Forest type	Stand-size class				
	Sawtimber	Poletimber	Sapling and seedling	Nonstocked	Total
	- - - - - - - - - - - - Thousand acres - - - - - - - - - - - -				
Douglas-fir	1,054.1	123.5	127.8	182.9	1,488.3
Hemlock	122.6	16.4	9.7	4.6	153.3
Ponderosa pine	489.4	48.1	54.1	158.3	749.9
Western white pine	79.3	13.0	4.7	11.0	108.0
Lodgepole pine	178.8	117.7	52.8	26.6	375.9
Western larch	82.5	39.8	3.0	2.8	128.1
Western redcedar	248.5	18.4	75.2	21.9	364.0
Grand fir	680.4	28.5	103.8	32.1	844.8
Engelmann spruce-fir	169.1	27.6	38.8	15.9	251.4
Aspen	21.6	122.2	159.5	7.3	310.6
Cottonwood	47.5	8.8	--	22.5	78.8
All types	3,173.8	564.0	629.4	485.9	4,853.1

Table 70.--Area of other public and privately owned timberland in Idaho by stand volume and ownership class, 1981

Stand volume per acre[1]	Ownership class			
	Other public	Forest industry	Nonindustrial private	Total
	- - - - - - - - - - Thousand acres - - - - - - - - - -			
Less than 1,500 board feet	453.5	216.3	570.9	1,240.7
1,500 to 4,999 board feet	345.0	281.0	458.0	1,084.0
5,000 to 9,999 board feet	309.7	326.9	513.8	1,150.4
10,000 board feet or more	526.8	353.9	497.3	1,378.0
All classes	1,635.0	1,178.1	2,040.0	4,853.1

[1]International ¼-inch rule.

Table 71.--Area of other public and privately owned timberland in Idaho by forest type and area condition class, 1981

Forest type	Area condition class									Nonstocked	All classes
	10	20	30	40	50	60	70	80	90		
	Thousand acres										
Douglas-fir	1.3	2.0	77.9	104.6	122.1	403.1	406.0	71.9	116.5	182.9	1,488.3
Hemlock	--	--	14.5	0.5	41.9	25.1	9.6	13.2	43.9	4.6	153.3
Ponderosa pine	--	--	--	6.0	51.5	199.5	296.8	3.0	34.8	158.3	749.9
Western white pine	--	--	--	2.2	29.8	18.9	14.0	--	32.1	11.0	108.0
Lodgepole pine	7.0	0.6	1.0	55.2	131.4	84.4	46.6	--	23.1	26.6	375.9
Western larch	2.0	11.7	--	9.6	45.0	22.4	3.8	6.1	24.7	2.8	128.1
Western redcedar	--	--	15.2	17.0	77.7	56.5	84.1	13.7	77.9	21.9	364.0
Grand fir	24.1	53.3	14.1	151.9	219.2	123.8	102.7	30.1	93.5	32.1	844.8
Engelmann spruce-fir	--	2.0	7.1	30.5	28.4	45.0	35.4	40.3	46.8	15.9	251.4
Aspen	--	--	--	10.2	138.9	69.6	79.7	--	4.9	7.3	310.6
Cottonwood	--	--	--	--	7.9	24.8	23.6	--	--	22.5	78.8
All types	34.4	69.6	129.8	387.7	893.8	1,073.1	1,102.3	178.3	498.2	485.9	4,853.1

Table 72.--Number of growing-stock trees on other public and privately owned timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)															All classes
	1.0-2.9	3.0-4.9	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand trees															
Douglas-fir	74,820	60,396	51,801	36,786	31,262	20,006	14,319	8,830	5,710	3,596	1,692	1,132	659	305	450	311,764
Ponderosa pine	10,529	17,451	14,528	10,711	7,209	7,309	4,255	3,484	1,784	1,699	881	610	335	179	384	81,348
Western white pine	10,376	2,902	2,927	1,075	1,986	1,491	1,318	576	646	402	239	169	153	64	208	24,532
Lodgepole pine	43,230	19,873	29,734	23,083	11,212	6,667	1,940	664	137	100	41	3	--	--	1	136,685
Whitebark pine	1,353	737	524	175	184	67	32	10	18	5	3	2	--	2	1	3,113
Limber pine	1,078	85	64	249	128	21	62	3	2	6	3	--	1	2	--	1,704
Western larch	11,657	16,367	18,737	12,207	6,972	4,032	2,625	1,581	798	473	268	173	93	67	103	76,153
Grand fir	130,413	77,519	39,509	21,390	16,014	9,133	6,467	4,093	2,311	1,408	655	494	397	232	567	310,602
Subalpine fir	15,178	9,498	7,806	5,846	2,401	2,500	1,016	583	196	146	73	22	56	8	5	45,334
White fir	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Engelmann spruce	10,512	5,069	3,167	2,114	1,234	800	575	411	253	168	254	150	90	58	105	24,960
Western hemlock	43,950	18,609	10,706	4,976	3,213	2,341	1,402	793	600	359	208	109	84	60	73	87,483
Western redcedar	104,297	32,253	19,449	10,706	8,136	4,413	3,228	2,502	1,406	1,039	811	400	256	239	808	189,943
Total softwoods	457,393	260,759	198,952	129,318	89,951	58,780	37,239	23,530	13,861	9,401	5,128	3,264	2,124	1,216	2,705	1,293,621
Aspen	55,823	33,534	35,542	12,153	3,473	1,395	248	134	65	40	19	2	--	1	--	142,429
Cottonwood	2,560	879	1,056	240	630	808	561	426	365	150	178	146	51	29	122	8,201
Total hardwoods	58,383	34,413	36,598	12,393	4,103	2,203	809	560	430	190	197	148	51	30	122	150,630
All species	515,776	295,172	235,550	141,711	94,054	60,983	38,048	24,090	14,291	9,591	5,325	3,412	2,175	1,246	2,827	1,444,251

Table 73.--Number of cull and salvable dead trees on other public and privately owned timberland in Idaho by ownership class, and softwoods and hardwoods, 1981

Ownership class and species group	Cull trees			Salvable dead trees	All dead trees
	Sound	Rotten	Total		
	- - - - - - - - - - - - Thousand trees - - - - - - - - - - - -				
Other public:					
Softwoods	6,215	2,634	8,849	3,030	11,879
Hardwoods	30	2,315	2,345	698	3,043
Total	6,245	4,949	11,194	3,728	14,922
Forest industry:					
Softwoods	359	2,881	3,240	16,181	19,421
Hardwoods	--	--	--	47	47
Total	359	2,881	3,240	16,228	19,468
Nonindustrial private:					
Softwoods	--	2,526	2,526	18,412	20,938
Hardwoods	--	2,483	2,483	6,384	8,867
Total	--	5,009	5,009	24,796	29,805
Total:					
Softwoods	6,574	8,041	14,615	37,623	52,238
Hardwoods	30	4,798	4,828	7,129	11,957
Total	6,604	12,839	19,443	44,752	64,195

Table 74.--Net volume of growing stock on other public and privately owned timberland in Idaho by ownership class, forest type, and stand-size class, 1981

Ownership class	Forest type	Stand-size class				
		Sawtimber	Poletimber	Sapling/seedling	Nonstocked	All classes
		Million cubic feet				
Other public:						
	Douglas-fir	713.6	82.9	13.7	5.0	815.2
	Hemlock	172.1	6.0	3.2	0.1	181.4
	Ponderosa pine	323.7	20.4	7.0	9.0	360.1
	Western white pine	349.8	10.3	2.9	0.9	363.9
	Lodgepole pine	138.5	115.2	6.4	1.0	261.1
	Western larch	71.1	59.4	5.0	0.5	136.0
	Western redcedar	290.0	11.0	8.0	2.2	311.2
	Grand fir	556.2	7.8	4.0	3.1	571.1
	Engelmann spruce-fir	198.1	28.7	4.1	1.0	231.9
	Aspen	31.6	69.2	22.5	1.1	124.4
	Cottonwood	6.4	1.1	--	1.0	8.5
	All types	2,851.1	412.0	76.8	24.9	3,364.8
Forest industry:						
	Douglas-fir	453.7	53.5	9.5	2.1	518.8
	Hemlock	129.3	11.2	--	--	140.5
	Ponderosa pine	66.0	10.2	15.1	1.7	93.0
	Western white pine	--	--	--	--	--
	Lodgepole pine	90.6	51.6	--	--	142.2
	Western larch	110.2	--	--	--	110.2
	Western redcedar	326.8	6.1	38.5	--	371.4
	Grand fir	714.5	1.8	11.6	--	727.9
	Engelmann spruce-fir	124.4	13.3	18.6	([1])	156.3
	Aspen	--	([1])	([1])	--	([1])
	Cottonwood	24.2	([1])	--	([1])	24.2
	All types	2,039.7	147.7	93.3	3.8	2,284.5
Nonindustrial private:						
	Douglas-fir	1,134.6	76.9	40.3	4.1	1,255.9
	Hemlock	17.3	5.3	1.5	--	24.1
	Ponderosa pine	458.2	12.6	8.9	15.6	495.3
	Western white pine	62.3	0.5	--	--	62.8
	Lodgepole pine	196.8	154.7	22.0	1.2	374.7
	Western larch	105.1	44.8	--	--	149.9
	Western redcedar	247.2	--	--	--	247.2
	Grand fir	398.1	20.6	9.8	--	428.5
	Engelmann spruce-fir	70.1	3.3	--	3.0	76.4
	Aspen	--	73.7	21.2	--	94.9
	Cottonwood	63.4	2.5	--	5.7	71.6
	All types	2,753.1	394.9	103.7	29.6	3,281.3
Total:						
	Douglas-fir	2,301.9	213.3	63.5	11.2	2,589.9
	Hemlock	318.7	22.5	4.7	0.1	346.0
	Ponderosa pine	847.9	43.2	31.0	26.3	948.4
	Western white pine	412.1	10.8	2.9	0.9	426.7
	Lodgepole pine	425.9	321.5	28.4	2.2	778.0
	Western larch	286.4	104.2	5.0	0.5	396.1
	Western redcedar	864.0	17.1	46.5	2.2	929.8
	Grand fir	1,668.8	30.2	25.4	3.1	1,727.5
	Engelmann spruce-fir	392.6	45.3	22.7	4.0	464.6
	Aspen	31.6	142.9	43.7	1.1	219.3
	Cottonwood	94.0	3.6	--	6.7	104.3
	All types	7,643.9	954.6	273.8	58.3	8,930.6

[1]Less than 0.05 million cubic feet.

Table 75.--Net volume of sawtimber (International ¼-inch rule) on other public and privately owned timberland in Idaho by ownership class, forest type, and stand-size class, 1981

Ownership class	Forest type	Stand-size class				
		Sawtimber	Poletimber	Sapling/seedling	Nonstocked	All classes
		- - - - - Million board feet, International ¼-inch rule - - - - -				
Other public:						
	Douglas-fir	3,228.1	129.3	49.4	23.8	3,430.6
	Hemlock	879.5	12.6	11.8	--	903.9
	Ponderosa pine	1,761.2	29.9	31.3	54.6	1,877.0
	Western white pine	2,013.5	18.9	6.6	6.3	2,045.3
	Lodgepole pine	571.0	156.3	13.3	6.0	746.6
	Western larch	370.5	91.6	11.6	2.7	476.4
	Western redcedar	1,508.9	17.4	12.2	9.1	1,547.6
	Grand fir	2,910.1	9.2	14.4	4.7	2,938.4
	Engelmann spruce-fir	959.5	54.7	9.4	5.7	1,029.3
	Aspen	140.2	71.5	39.5	6.7	257.9
	Cottonwood	31.3	1.4	--	4.7	37.4
	All types	14,373.8	592.8	199.5	124.3	15,290.4
Forest industry:						
	Douglas-fir	2,220.0	118.1	27.3	6.7	2,372.1
	Hemlock	493.1	27.7	--	--	520.8
	Ponderosa pine	306.2	23.7	59.4	4.9	394.2
	Western white pine	--	--	--	--	--
	Lodgepole pine	304.9	65.5	--	--	370.4
	Western larch	522.6	--	--	--	522.6
	Western redcedar	1,540.9	--	130.2	--	1,671.1
	Grand fir	3,051.0	--	30.1	--	3,081.1
	Engelmann spruce-fir	611.5	28.3	69.9	([1])	709.7
	Aspen	--	--	--	--	--
	Cottonwood	130.6	([1])	--	0.1	130.7
	All types	9,180.8	263.3	316.9	11.7	9,772.7
Nonindustrial private:						
	Douglas-fir	5,032.9	163.0	153.9	14.0	5,363.8
	Hemlock	72.1	6.1	--	--	78.2
	Ponderosa pine	2,227.9	22.4	40.2	78.0	2,368.5
	Western white pine	340.5	--	--	--	340.5
	Lodgepole pine	705.4	232.9	87.6	--	1,025.9
	Western larch	535.6	84.2	--	--	619.8
	Western redcedar	1,046.0	--	--	--	1,046.0
	Grand fir	1,655.8	36.0	26.0	--	1,717.8
	Engelmann spruce-fir	276.1	3.0	--	15.7	294.8
	Aspen	--	41.5	43.3	--	84.8
	Cottonwood	307.6	3.2	--	26.8	337.6
	All types	12,199.9	592.3	351.0	134.5	13,277.7
Total:						
	Douglas-fir	10,481.0	410.4	230.6	44.5	11,166.5
	Hemlock	1,444.7	46.4	11.8	--	1,502.9
	Ponderosa pine	4,295.3	76.0	130.9	137.5	4,639.7
	Western white pine	2,354.0	18.9	6.6	6.3	2,385.8
	Lodgepole pine	1,581.3	454.7	100.9	6.0	2,142.9
	Western larch	1,428.7	175.8	11.6	2.7	1,618.8
	Western redcedar	4,095.8	17.4	142.4	9.1	4,264.7
	Grand fir	7,616.9	45.2	70.5	4.7	7,737.3
	Engelmann spruce-fir	1,847.1	86.0	79.3	21.4	2,033.8
	Aspen	140.2	113.0	82.8	6.7	342.7
	Cottonwood	469.5	4.6	--	31.6	505.7
	All types	35,754.5	1,448.4	867.4	270.5	38,340.8

[1]Less than 0.05 million board feet.

Table 76.--Net volume of sawtimber (Scribner rule) on other public and privately owned timberland in Idaho by ownership class, forest type, and stand-size class, 1981

Ownership class	Forest type	Stand-size class				
		Sawtimber	Poletimber	Sapling/seedling	Nonstocked	All classes
		- - - - - - - - Million board feet, Scribner rule - - - - - - - -				
Other public:						
	Douglas-fir	2,719.6	104.4	41.6	19.4	2,885.0
	Hemlock	758.1	10.6	10.1	--	778.8
	Ponderosa pine	1,492.4	24.0	26.2	46.8	1,589.4
	Western white pine	1,753.8	16.0	5.0	5.6	1,780.4
	Lodgepole pine	480.7	131.0	11.4	5.3	628.4
	Western larch	308.5	73.0	9.1	1.9	392.5
	Western redcedar	1,290.6	14.3	10.2	7.5	1,322.6
	Grand fir	2,513.1	7.4	12.1	3.8	2,536.4
	Engelmann spruce-fir	822.1	45.7	7.7	4.9	880.4
	Aspen	117.8	58.7	31.8	6.0	214.3
	Cottonwood	27.1	1.2	--	4.2	32.5
	All types	12,283.8	486.3	165.2	105.4	13,040.7
Forest industry:						
	Douglas-fir	1,886.1	92.8	23.4	5.4	2,007.7
	Hemlock	415.6	22.9	--	--	438.5
	Ponderosa pine	253.8	17.9	46.8	3.8	322.3
	Western white pine	--	--	--	--	--
	Lodgepole pine	255.2	54.2	--	--	309.4
	Western larch	429.6	--	--	--	429.6
	Western redcedar	1,316.7	--	107.4	--	1,424.1
	Grand fir	2,603.2	--	23.9	--	2,627.1
	Engelmann spruce-fir	525.9	23.1	58.0	([1])	607.0
	Aspen	--	--	--	--	--
	Cottonwood	115.1	([1])	--	0.1	115.2
	All types	7,801.2	210.9	259.5	9.3	8,280.9
Nonindustrial private:						
	Douglas-fir	4,232.8	133.4	126.4	10.3	4,502.9
	Hemlock	57.4	4.3	--	--	61.7
	Ponderosa pine	1,833.3	17.3	33.3	63.8	1,947.7
	Western white pine	290.5	--	--	--	290.5
	Lodgepole pine	584.0	196.4	71.8	--	852.2
	Western larch	447.4	68.7	--	--	516.1
	Western redcedar	870.1	--	--	--	870.1
	Grand fir	1,403.0	29.3	20.2	--	1,452.5
	Engelmann spruce-fir	236.5	2.7	--	13.4	252.6
	Aspen	--	33.2	37.7	--	70.9
	Cottonwood	265.2	2.6	--	23.4	291.2
	All types	10,220.2	487.9	289.4	110.9	11,108.4
Total:						
	Douglas-fir	8,838.5	330.6	191.4	35.1	9,395.6
	Hemlock	1,231.1	37.8	10.1	--	1,279.0
	Ponderosa pine	3,579.5	59.2	106.3	114.4	3,859.4
	Western white pine	2,044.3	16.0	5.0	5.6	2,070.9
	Lodgepole pine	1,319.9	381.6	83.2	5.3	1,790.0
	Western larch	1,185.5	141.7	9.1	1.9	1,338.2
	Western redcedar	3,477.4	14.3	117.6	7.5	3,616.8
	Grand fir	6,519.3	36.7	56.2	3.8	6,616.0
	Engelmann spruce-fir	1,584.5	71.5	65.7	18.3	1,740.0
	Aspen	117.8	91.9	69.5	6.0	285.2
	Cottonwood	407.4	3.8	--	27.7	438.9
	All types	30,305.2	1,185.1	714.1	225.6	32,430.0

[1]Less than 0.05 million board feet.

Table 77.--Net volume of timber on other public and privately owned timberland in Idaho by class of timber, and softwoods and hardwoods, 1981

Class of timber	Softwoods	Hardwoods	All classes
	- - - - - - - -	Million cubic feet	- - - - - - - -
Sawtimber trees:			
Saw-log portion	6,301.8	107.1	6,408.9
Upper-stem portion	768.4	30.3	798.7
Total	7,070.2	137.4	7,207.6
Poletimber trees	1,527.0	196.0	1,723.0
All growing stock trees	8,597.2	333.4	8,930.6
Sound cull trees	46.3	0.1	46.4
Rotten cull trees	58.3	7.9	66.2
Salvable dead trees	351.8	21.8	373.6
All timber	9,053.6	363.2	9,416.8

Table 78.--Net volume of growing stock on other public and privately owned timberland in Idaho by forest type and species, 1981

Forest type	Species								
	Douglas-fir	Ponderosa pine	Western white pine	Lodgepole pine	Whitebark pine	Limber pine	Western larch	Grand fir	Subalpine fir
	Million cubic feet								
Douglas-fir	1,862.2	194.4	28.7	64.0	0.5	1.0	126.4	177.4	17.5
Hemlock	24.0	1.2	15.7	4.7	--	--	28.7	25.7	3.7
Ponderosa pine	171.0	667.8	6.2	34.9	--	--	27.3	26.5	0.4
Western white pine	31.5	2.0	192.3	10.2	--	0.2	30.1	88.0	2.1
Lodgepole pine	79.8	21.7	4.5	583.2	0.8	0.1	40.8	18.5	2.9
Western larch	46.1	8.9	26.6	10.5	--	0.1	227.0	26.3	1.3
Western redcedar	67.4	4.2	58.3	24.6	--	--	69.0	206.0	2.4
Grand fir	231.2	27.9	81.4	27.7	--	--	75.8	1,073.8	8.2
Engelmann spruce-fir	50.3	0.4	6.8	21.0	5.7	4.7	18.9	11.2	172.7
Aspen	45.5	4.7	--	5.6	--	--	--	([1])	0.5
Cottonwood	2.3	10.9	--	--	--	--	--	--	--
All types	2,611.3	944.1	420.5	786.4	7.0	6.1	644.0	1,653.4	211.7

(con.)

Table 78 (con.)

Forest type	Species							All species
	Engelmann spruce	Western hemlock	Western redcedar	Total Softwoods	Aspen	Cottonwood	Total hardwoods	
	Million cubic feet							
Douglas-fir	8.0	9.0	63.9	2,553.0	31.9	5.0	36.9	2,589.9
Hemlock	7.4	181.3	50.2	342.6	1.9	1.5	3.4	346.0
Ponderosa pine	2.6	1.3	4.2	942.2	5.1	1.1	6.2	948.4
Western white pine	7.3	5.3	55.6	424.6	2.1	--	2.1	426.7
Lodgepole pine	5.9	2.6	10.8	771.6	6.4	--	6.4	778.0
Western larch	5.3	10.4	28.0	390.5	0.4	5.2	5.6	396.1
Western redcedar	8.4	55.4	426.1	921.8	2.5	5.5	8.0	929.8
Grand fir	17.2	42.3	133.3	1,718.8	2.0	6.7	8.7	1,727.5
Engelmann spruce-fir	146.2	17.9	6.2	462.0	2.6	--	2.6	464.6
Aspen	0.4	--	0.2	56.9	162.4	--	162.4	219.3
Cottonwood	--	--	--	13.2	8.2	82.9	91.1	104.3
All types	208.7	325.5	778.5	8,597.2	225.5	107.9	333.4	8,930.6

[1]Less than 0.05 million cubic feet.

Table 79.--Net volume of sawtimber (International ¼-inch rule) on other public and privately owned timberland in Idaho by forest type and species, 1981

Forest type	Species								
	Douglas-fir	Ponderosa pine	Western white pine	Lodgepole pine	Whitebark pine	Limber pine	Western larch	Grand fir	Subalpine fir
	Million board feet, International ¼-inch rule								
Douglas-fir	8,209.8	1,040.2	148.3	217.6	2.0	3.3	464.3	746.0	42.3
Hemlock	97.1	6.5	83.9	22.6	--	--	131.4	93.3	18.6
Ponderosa pine	787.0	3,424.4	33.4	146.6	--	--	92.6	117.3	0.5
Western white pine	169.1	12.2	1,101.5	53.4	--	1.1	184.4	497.5	10.7
Lodgepole pine	315.2	98.4	17.8	1,411.8	1.6	--	191.9	39.1	7.2
Western larch	205.3	52.6	150.4	30.6	--	0.2	923.5	90.0	5.3
Western redcedar	321.7	23.6	342.7	116.6	--	--	362.5	922.1	12.6
Grand fir	1,095.9	140.5	415.9	96.4	--	--	357.9	4,769.6	30.9
Engelmann spruce-fir	263.4	2.7	36.3	82.1	18.7	13.3	113.5	51.8	602.6
Aspen	184.4	28.8	--	28.2	--	--	--	0.1	1.6
Cottonwood	12.8	67.5	--	--	--	--	--	--	--
All types	11,661.7	4,897.4	2,330.2	2,205.9	22.3	17.9	2,822.0	7,326.8	732.3

(con.)

Table 79 (con.)

Forest type	Species							All species
	Engelmann spruce	Western hemlock	Western redcedar	Total Softwoods	Aspen	Cottonwood	Total hardwoods	
	Million board feet, International ¼-inch rule							
Douglas-fir	37.8	13.3	217.5	11,142.4	13.2	10.9	24.1	11,166.5
Hemlock	43.0	787.6	210.7	1,494.7	1.3	6.9	8.2	1,502.9
Ponderosa pine	11.3	6.2	20.4	4,639.7	--	--	--	4,639.7
Western white pine	40.6	22.5	284.9	2,377.8	7.9	--	7.9	2,385.8
Lodgepole pine	14.2	9.5	22.1	2,128.9	14.1	--	14.1	2,142.9
Western larch	28.5	44.8	67.1	1,598.3	1.6	18.9	20.5	1,618.8
Western redcedar	43.2	242.2	1,846.0	4,233.2	5.5	26.0	31.5	4,264.7
Grand fir	88.8	194.3	507.4	7,697.6	6.6	33.1	39.7	7,737.3
Engelmann spruce-fir	729.3	84.6	28.8	2,027.1	6.7	--	6.7	2,033.8
Aspen	1.9	--	1.0	246.0	96.7	--	96.7	342.7
Cottonwood	--	--	--	80.3	42.3	383.1	425.4	505.7
All types	1,038.6	1,405.0	3,205.9	37,666.0	195.9	478.9	674.8	38,340.8

Table 80.--Net volume of sawtimber (Scribner rule) on other public and privately owned timberland in Idaho by forest type and species, 1981

Forest type	Species								
	Douglas-fir	Ponderosa pine	Western white pine	Lodgepole pine	Whitebark pine	Limber pine	Western larch	Grand fir	Subalpine fir
	Million board feet, Scribner rule								
Douglas-fir	6,924.0	881.6	128.6	183.2	1.7	2.7	364.5	639.1	35.7
Hemlock	82.9	5.6	72.5	19.3	--	--	106.7	80.9	15.4
Ponderosa pine	667.5	2,836.8	28.3	124.4	--	--	71.3	98.8	0.4
Western white pine	147.1	10.3	964.8	45.3	--	1.0	155.2	437.3	9.1
Lodgepole pine	264.7	80.6	15.1	1,184.0	1.2	--	154.4	33.9	6.1
Western larch	173.5	44.8	129.7	25.6	--	0.2	749.0	76.6	4.4
Western redcedar	276.5	19.5	303.8	99.2	--	--	299.1	806.2	10.9
Grand fir	937.1	115.4	363.3	83.5	--	--	298.9	4,105.7	24.8
Engelmann spruce-fir	225.9	2.4	32.0	70.1	15.3	11.4	95.7	44.9	506.7
Aspen	154.2	25.1	--	24.7	--	--	--	0.1	1.3
Cottonwood	11.0	59.3	--	--	--	--	--	--	--
All types	9,864.4	4,081.4	2,038.1	1,859.3	18.2	15.3	2,294.8	6,323.5	614.8

(con.)

Table 80 (con.)

Forest type	Species							All species
	Engelmann spruce	Western hemlock	Western redcedar	Total Softwoods	Aspen	Cottonwood	Total hardwoods	
	Million board feet, Scribner rule							
Douglas-fir	32.5	11.0	170.1	9,374.7	11.1	9.8	20.9	9,395.6
Hemlock	37.8	680.9	169.8	1,271.8	1.1	6.1	7.2	1,279.0
Ponderosa pine	9.9	4.8	17.2	3,859.4	--	--	--	3,859.4
Western white pine	35.2	19.7	239.0	2,064.0	6.9	--	6.9	2,070.9
Lodgepole pine	12.2	7.4	17.9	1,777.5	12.5	--	12.5	1,790.0
Western larch	24.8	38.0	53.5	1,320.1	1.4	16.7	18.1	1,338.2
Western redcedar	37.6	210.3	1,525.9	3,589.0	4.9	22.9	27.8	3,616.8
Grand fir	75.9	166.1	410.4	6,581.1	5.8	29.1	34.9	6,616.0
Engelmann spruce-fir	636.1	70.9	22.9	1,734.3	5.7	--	5.7	1,740.0
Aspen	1.6	--	0.7	207.7	77.5	--	77.5	285.2
Cottonwood	--	--	--	70.3	36.2	332.4	368.6	438.9
All types	903.6	1,209.1	2,627.4	31,849.9	163.1	417.0	580.1	32,430.0

Table 81.--Net volume of growing stock and sawtimber on other public and privately owned timberland in Idaho by species, 1981

Species	Growing stock	Sawtimber	
		International ¼-inch rule	Scribner rule
	- Million cubic feet -	- Million board feet -	
Douglas-fir	2,611.3	11,661.7	9,864.4
Ponderosa pine	944.1	4,897.4	4,081.4
Western white pine	420.5	2,330.2	2,038.1
Lodgepole pine	786.4	2,205.9	1,859.3
Whitebark pine	7.0	22.3	18.2
Limber pine	6.1	17.9	15.3
Western larch	644.0	2,822.0	2,294.8
Grand fir	1,653.4	7,326.8	6,323.5
Subalpine fir	211.7	732.3	614.8
Engelmann spruce	208.7	1,038.6	903.6
Western hemlock	325.5	1,405.0	1,209.1
Western redcedar	778.5	3,205.9	2,627.4
Total softwoods	8,597.2	37,666.0	31,849.9
Aspen	225.5	195.9	163.1
Cottonwood	107.9	478.9	417.0
Total hardwoods	333.4	674.8	580.1
All species	8,930.6	38,340.8	32,430.0

Table 82.--Net volume of growing stock on other public and privately owned timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)													
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Million cubic feet													
Douglas-fir	156.9	228.3	330.1	346.9	364.8	306.6	257.6	203.4	120.7	97.9	70.1	38.3	89.7	2,611.3
Ponderosa pine	20.9	47.3	61.7	114.9	103.9	116.2	86.2	99.6	67.7	60.6	40.8	28.8	95.5	944.1
Western white pine	13.0	7.4	30.3	37.5	48.4	30.5	44.6	36.8	26.9	23.0	25.1	12.9	84.1	420.5
Lodgepole pine	152.3	211.8	165.8	151.2	59.0	29.7	6.8	6.2	3.2	0.2	--	--	0.2	786.4
Whitebark pine	1.5	1.0	1.6	0.9	0.6	0.3	0.5	0.2	0.1	0.1	--	0.1	0.1	7.0
Limber pine	0.2	2.1	1.4	0.2	1.6	0.1	0.1	0.2	0.1	--	([1])	0.1	--	6.1
Western larch	64.6	89.5	94.0	86.6	79.1	65.1	45.0	35.3	21.8	18.2	12.1	9.7	23.0	644.0
Grand fir	109.0	139.6	202.5	195.0	211.3	178.9	139.3	110.3	65.4	53.5	55.7	39.7	153.2	1,653.4
Subalpine fir	29.1	40.5	26.1	43.7	23.5	20.4	8.0	7.7	4.7	1.7	4.9	0.8	0.6	211.7
Engelmann spruce	10.9	14.3	16.0	16.5	17.9	16.5	15.5	13.2	24.7	16.7	12.8	9.7	24.0	208.7
Western hemlock	23.4	33.9	39.6	46.2	40.4	31.6	31.5	23.1	17.2	9.4	9.0	8.2	12.0	325.5
Western redcedar	64.1	65.4	83.8	65.7	67.7	68.0	50.1	45.3	41.9	24.2	19.2	21.4	161.7	778.5
Total softwoods	645.9	881.1	1,052.9	1,105.3	1,018.2	863.9	685.2	581.3	394.4	305.5	249.7	169.7	644.1	8,597.2
Aspen	84.2	68.9	34.7	20.2	5.5	5.1	3.0	1.9	1.5	0.2	--	0.3	--	225.5
Cottonwood	1.6	0.5	6.1	13.4	12.5	13.2	13.7	6.8	10.0	8.7	3.3	3.3	14.8	107.9
Total hardwoods	85.8	69.4	40.8	33.6	18.0	18.3	16.7	8.7	11.5	8.9	3.3	3.6	14.8	333.4
All species	731.7	950.5	1,093.7	1,138.9	1,036.2	882.2	701.9	590.0	405.9	314.4	253.0	173.3	658.9	8,930.6

[1]Less than 0.05 million cubic feet

Table 83.--Net volume of sawtimber (International ¼-inch rule) on other public and privately owned timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Million board feet, International ¼-inch rule											
Douglas-fir	1,229.2	1,731.5	1,945.5	1,691.1	1,449.3	1,158.7	697.6	571.4	414.6	229.7	543.1	11,661.7
Ponderosa pine	205.3	522.3	548.7	653.9	508.6	595.7	412.8	370.9	252.6	185.0	641.6	4,897.4
Western white pine	130.0	210.5	278.7	178.2	255.4	218.2	164.5	140.0	152.3	82.0	520.4	2,330.2
Lodgepole pine	724.8	879.3	341.2	168.7	38.3	33.7	17.6	1.2	--	--	1.1	2,205.9
Whitebark pine	6.5	5.1	3.3	1.4	2.9	1.0	0.5	0.5	--	0.7	0.4	22.3
Limber pine	3.9	1.2	9.2	0.4	0.3	1.6	0.5	--	0.3	0.5	--	17.9
Western larch	406.1	519.2	476.1	393.6	271.7	215.3	135.2	116.0	77.8	62.7	148.3	2,822.0
Grand fir	781.8	1,037.4	1,161.7	984.6	752.4	594.1	352.2	282.2	298.9	233.4	848.1	7,326.8
Subalpine for	104.8	231.1	126.4	110.6	43.4	42.6	26.9	10.1	28.1	4.4	3.9	732.3
Engelmann spruce	66.1	90.9	100.2	92.4	86.8	73.8	137.0	97.4	77.5	61.2	155.3	1,038.6
Western hemlock	154.6	230.9	213.5	174.0	174.3	128.5	100.4	54.1	53.3	49.4	72.0	1,405.0
Western redcedar	317.8	331.4	346.7	347.7	255.4	230.1	210.5	123.9	102.1	115.2	825.1	3,205.9
Total softwoods	4,130.9	5,790.8	5,551.2	4,796.6	3,838.8	3,293.3	2,255.7	1,767.7	1,457.5	1,024.2	3,759.3	37,666.0
Aspen	XXXXXXX	104.9	29.5	26.2	15.6	9.4	7.4	1.3	--	1.6	--	195.9
Cottonwood	XXXXXXX	69.0	63.6	65.6	66.0	31.9	45.8	39.0	14.5	15.0	68.5	478.9
Total hardwoods	XXXXXXX	173.9	93.1	91.8	81.6	41.3	53.2	40.3	14.5	16.6	68.5	674.8
All species	4,130.9	5,964.7	5,644.3	4,888.4	3,920.4	3,334.6	2,308.9	1,808.0	1,472.0	1,040.8	3,827.8	38,340.8

Table 84.--Net volume of sawtimber (Scribner rule) on other public and privately owned timberland in Idaho by species and diameter class, 1981

Species	Diameter class (inches at breast height)											All classes
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Million board feet, Scribner rule											
Douglas-fir	956.4	1,382.0	1,625.8	1,445.7	1,255.8	1,012.5	620.9	508.5	369.0	204.4	483.4	9,864.4
Ponderosa pine	135.2	391.5	441.9	541.8	430.1	507.7	354.5	322.0	221.5	164.3	570.9	4,081.4
Western white pine	106.7	174.1	238.9	156.1	226.1	194.2	145.7	124.6	135.6	73.0	463.1	2,038.1
Lodgepole pine	604.0	732.5	292.2	149.0	34.0	30.0	15.6	1.0	--	--	1.0	1,859.3
Whitebark pine	5.2	3.9	2.7	1.1	2.4	0.9	0.4	0.5	--	0.7	0.4	18.2
Limber pine	3.5	0.9	7.8	0.3	0.3	1.4	0.5	--	0.2	0.4	--	15.3
Western larch	302.3	385.5	378.7	327.2	233.3	188.6	119.2	103.1	69.2	55.8	131.9	2,294.8
Grand fir	633.3	852.2	994.7	858.2	664.2	527.7	313.4	251.1	266.1	207.7	754.9	6,323.5
Subalpine fir	85.6	187.2	105.9	95.6	37.8	37.5	23.9	9.0	25.0	3.9	3.4	614.8
Engelmann spruce	54.2	74.4	84.7	79.4	75.7	64.9	121.9	86.7	69.0	54.5	138.2	903.6
Western hemlock	122.0	188.1	183.7	153.8	155.1	114.4	88.5	48.0	47.5	43.9	64.1	1,209.1
Western redcedar	256.3	253.7	268.9	271.1	201.0	184.2	172.5	103.7	86.8	99.2	730.0	2,627.4
Total softwoods	3,264.7	4,626.0	4,625.9	4,079.3	3,315.8	2,864.0	1,977.0	1,558.2	1,289.9	907.8	3,341.3	31,849.9
Aspen	XXXXXXX	83.7	24.9	23.1	13.9	8.3	6.6	1.2	--	1.4	--	163.1
Cottonwood	XXXXXXX	57.2	54.2	57.0	57.9	28.2	40.6	34.7	12.9	13.4	60.9	417.0
Total hardwoods	XXXXXXX	140.9	79.1	80.1	71.8	36.5	47.2	35.9	12.9	14.8	60.9	580.1
All species	3,264.7	4,766.9	4,705.0	4,159.4	3,387.6	2,900.5	2,024.2	1,594.1	1,302.8	922.6	3,402.2	32,430.0

Table 85.--Net annual growth of growing stock and sawtimber on other public and privately owned timberland in Idaho by species, 1980

Species	Growing stock	Sawtimber	
		International ¼-inch rule	Scribner rule
	- Thousand cubic feet -	- Thousand board feet -	
Douglas-fir	74,272	360,233	323,628
Ponderosa pine	29,806	155,831	134,443
Western white pine	4,949	37,608	34,851
Lodgepole pine	20,254	67,247	61,693
Whitebark pine	316	152	142
Limber pine	58	284	259
Western larch	13,869	45,282	41,596
Grand fir	55,258	234,474	210,408
Subalpine fir	9,346	15,930	14,882
Engelmann spruce	4,341	18,451	16,596
Western hemlock	9,719	37,426	34,328
Western redcedar	27,290	70,151	60,354
Total softwoods	249,478	1,043,069	933,180
Aspen	13,158	16,728	13,278
Cottonwood	2,862	10,308	9,609
Total hardwoods	16,020	27,036	22,887
All species	265,498	1,070,105	956,067

Table 86.--Net annual growth of growing stock on other public and privately owned timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)													All classes
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand cubic feet													
Douglas-fir	11,765	8,717	11,641	11,167	10,243	7,904	5,247	3,552	1,824	944	706	324	238	74,272
Ponderosa pine	3,993	2,678	2,896	4,074	3,716	2,939	2,359	2,479	1,723	782	822	391	954	29,806
Western white pine	114	-545	1,410	801	741	577	800	376	360	138	81	-316	412	4,949
Lodgepole pine	6,244	5,727	3,974	3,453	435	462	-172	112	33	2	-18	--	2	20,254
Whitebark pine	273	12	12	8	2	1	5	1	([1])	1	--	1	([1])	316
Limber pine	2	41	14	1	8	-13	([1])	3	1	--	([1])	1	--	58
Western larch	4,748	2,341	1,892	1,803	1,625	659	551	333	220	-511	106	-1	103	13,869
Grand fir	13,458	6,436	7,846	6,612	6,882	4,537	2,973	1,988	1,152	600	828	460	1,486	55,258
Subalpine fir	6,104	1,058	494	493	544	369	95	121	8	-2	48	7	7	9,346
Engelmann spruce	635	565	570	528	435	359	199	235	215	155	137	103	205	4,341
Western hemlock	2,050	1,583	1,346	1,303	1,152	684	626	426	275	123	110	60	-19	9,719
Western redcedar	13,605	2,124	2,912	1,666	1,804	1,562	830	645	425	110	186	245	1,176	27,290
Total softwoods	62,991	30,737	35,007	31,909	27,587	20,040	13,513	10,271	6,236	2,342	3,006	1,275	4,564	249,478
Aspen	9,269	1,921	1,030	476	157	155	69	31	43	4	--	3	--	13,158
Cottonwood	270	71	250	642	411	-127	442	-16	233	252	83	50	301	2,862
Total hardwoods	9,539	1,992	1,280	1,118	568	28	511	15	276	256	83	53	301	16,020
All species	72,530	32,729	36,287	33,027	28,155	20,068	14,024	10,286	6,512	2,598	3,089	1,328	4,865	265,498

[1]Less than 0.05 thousand cubic feet

Table 87.--Net annual growth of sawtimber (International ¼-inch rule) on other public and privately owned timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, International ¼-inch rule											
Douglas-fir	102,862	68,796	62,781	47,725	31,687	21,268	10,982	5,962	4,472	2,039	1,659	360,233
Ponderosa pine	21,246	27,498	25,035	20,163	15,369	15,820	10,868	4,869	5,170	2,830	6,963	155,831
Western white pine	13,523	5,312	4,534	3,314	4,327	2,275	2,292	855	495	-1,848	2,529	37,608
Lodgepole pine	42,627	20,050	2,343	2,465	-960	612	192	14	-105	--	9	67,247
Whitebark pine	50	47	8	8	24	6	2	3	--	3	1	152
Limber pine	279	6	41	-75	2	20	5	--	2	4	--	284
Western larch	14,993	11,117	9,890	4,024	3,352	2,278	1,445	-3,134	666	-23	674	45,282
Grand fir	81,940	40,914	38,952	24,066	14,195	10,128	5,877	3,125	4,356	2,725	8,196	234,474
Subalpine for	6,225	2,909	3,024	2,022	535	724	99	-2	309	43	42	15,930
Engelmann spruce	3,082	2,930	2,415	1,947	1,084	1,347	1,438	1,103	973	721	1,411	18,451
Western hemlock	8,996	8,198	6,730	4,007	3,623	2,479	1,688	751	686	384	-116	37,426
Western redcedar	25,697	9,085	9,330	7,680	4,142	3,101	2,062	632	1,004	1,321	6,097	70,151
Total softwoods	321,520	196,862	165,083	117,346	77,380	60,058	36,950	14,178	18,028	8,199	27,465	1,043,069
Aspen	XXXXXXX	14,394	849	770	342	135	200	22	--	16	--	16,728
Cottonwood	XXXXXXX	3,279	1,979	-829	1,867	-181	1,003	1,114	383	242	1,451	10,308
Total hardwoods	XXXXXXX	17,673	2,828	-59	2,209	-46	1,203	1,136	383	258	1,451	27,036
All species	321,520	214,535	167,911	117,287	79,589	60,012	38,153	15,314	18,411	8,457	28,916	1,070,105

Table 88.--Net annual growth of sawtimber (Scribner rule) on other public and privately owned timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, Scribner rule											
Douglas-fir	90,836	62,280	57,058	43,184	28,719	19,200	9,774	5,307	3,980	1,814	1,476	323,628
Ponderosa pine	14,797	24,113	22,134	18,003	13,553	13,899	9,664	4,636	4,813	2,540	6,291	134,443
Western white pine	12,178	5,206	4,424	3,089	3,992	2,047	2,101	767	441	-1,645	2,251	34,851
Lodgepole pine	38,553	18,537	2,444	2,328	-812	545	170	13	-93	--	8	61,693
Whitebark pine	45	44	10	7	23	5	2	2	--	3	1	142
Limber pine	249	5	38	-63	2	18	5	--	1	4	--	259
Western larch	13,136	10,247	9,242	3,973	3,136	2,121	1,341	-2,773	593	-20	600	41,596
Grand fir	70,245	38,021	35,932	22,247	13,165	9,184	5,235	2,784	3,876	2,425	7,294	210,408
Subalpine fir	5,760	2,862	2,790	1,867	497	664	92	-1	275	39	37	14,882
Engelmann spruce	2,763	2,662	2,186	1,764	986	1,210	1,280	981	866	642	1,256	16,596
Western hemlock	8,028	7,591	6,445	3,721	3,228	2,206	1,575	686	610	341	-103	34,328
Western redcedar	22,774	7,542	7,422	6,074	3,417	2,855	1,987	664	916	1,203	5,500	60,354
Total softwoods	279,364	179,110	150,125	106,194	69,906	53,954	33,226	13,066	16,278	7,346	24,611	933,180
Aspen	XXXXXXX	11,122	789	717	318	121	178	19	--	14	--	13,278
Cottonwood	XXXXXXX	3,014	1,824	-606	1,736	-107	904	996	341	216	1,291	9,609
Total hardwoods	XXXXXXX	14,136	2,613	111	2,054	14	1,082	1,015	341	230	1,291	22,887
All species	279,364	193,246	152,738	106,305	71,960	53,968	34,308	14,081	16,619	7,576	25,902	956,067

Table 89.--Annual mortality of growing stock and sawtimber on other public and privately owned timberland in Idaho by species, 1980

Species	Growing stock	Sawtimber	
		International ¼-inch rule	Scribner rule
	- Thousand cubic feet -	- Thousand board feet -	
Douglas-fir	7,507	29,670	25,125
Ponderosa pine	3,384	16,852	13,780
Western white pine	5,193	20,019	17,393
Lodgepole pine	2,631	9,705	8,207
Whitebark pine	5	29	24
Limber pine	14	77	64
Western larch	2,887	10,449	9,013
Grand fir	6,676	26,956	23,038
Subalpine fir	962	4,213	3,548
Engelmann spruce	238	1,378	1,192
Western hemlock	733	3,595	2,919
Western redcedar	817	3,114	2,545
Total softwoods	31,047	126,057	106,848
Aspen	1,642	101	89
Cottonwood	742	3,608	3,118
Total hardwoods	2,384	3,709	3,207
All species	33,431	129,766	110,055

Table 90.--Annual mortality of growing stock on other public and privately owned timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)													All classes
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	
	Thousand cubic feet													
Douglas-fir	740	996	1,040	658	1,255	562	760	239	155	467	131	85	419	7,507
Ponderosa pine	165	80	213	642	438	1,060	289	--	--	365	--	--	132	3,384
Western white pine	731	1,076	53	629	913	189	288	372	--	162	181	424	175	5,193
Lodgepole pine	354	562	539	175	653	39	291	--	--	--	18	--	--	2,631
Whitebark pine	--	--	--	--	5	--	--	--	--	--	--	--	--	5
Limber pine	--	--	--	--	--	14	--	--	--	--	--	--	--	14
Western larch	487	405	602	86	53	478	61	31	14	615	--	55	--	2,887
Grand fir	399	861	995	1,223	698	859	951	306	35	323	--	--	26	6,676
Subalpine fir	4	36	329	379	40	58	37	19	29	12	19	--	--	962
Engelmann spruce	--	--	--	36	22	49	83	--	17	31	--	--	--	238
Western hemlock	--	6	342	214	--	25	--	--	--	--	--	29	117	733
Western redcedar	--	171	--	164	--	--	--	21	237	224	--	--	--	817
Total softwoods	2,880	4,193	4,113	4,206	4,077	3,333	2,760	988	487	2,199	349	593	869	31,047
Aspen	541	946	137	18	--	--	--	--	--	--	--	--	--	1,642
Cottonwood	--	--	--	--	--	551	--	191	--	--	--	--	--	742
Total hardwoods	541	946	137	18	--	551	--	191	--	--	--	--	--	2,384
All species	3,421	5,139	4,250	4,224	4,077	3,884	2,760	1,179	487	2,199	349	593	869	33,431

[1]Less than 500 cubic feet

Table 91.--Annual mortality of sawtimber (International ¼-inch rule) on other public and privately owned timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, International ¼-inch rule											
Douglas-fir	3,714	3,323	6,649	3,057	4,244	1,371	896	2,704	772	523	2,417	29,670
Ponderosa pine	656	2,831	2,482	6,058	1,725	--	--	2,207	--	--	893	16,852
Western white pine	248	3,501	5,280	1,115	1,743	2,306	--	1,024	1,150	2,536	1,116	20,019
Lodgepole pine	3,019	1,014	3,755	216	1,596	--	--	--	105	--	--	9,705
Whitebark pine	--	--	29	--	--	--	--	--	--	--	--	29
Limber pine	--	--	--	77	--	--	--	--	--	--	--	77
Western larch	1,860	519	322	2,890	364	188	87	3,853	--	366	--	10,449
Grand fir	3,755	6,483	3,775	4,558	4,923	1,513	227	1,552	--	--	170	26,956
Subalpine fir	1,063	2,013	210	307	192	100	153	69	106	--	--	4,213
Engelmann spruce	--	198	118	288	477	--	88	209	--	--	--	1,378
Western hemlock	1,615	966	--	132	--	--	--	--	--	167	715	3,595
Western redcedar	--	828	--	--	--	118	1,117	1,051	--	--	--	3,114
Total softwoods	15,930	21,676	22,620	18,698	15,264	5,596	2,568	12,669	2,133	3,592	5,311	126,057
Aspen	XXXXXXX	101	--	--	--	--	--	--	--	--	--	101
Cottonwood	XXXXXXX	--	--	2,714	--	894	--	--	--	--	--	3,608
Total hardwoods	XXXXXXX	101	--	2,714	--	894	--	--	--	--	--	3,709
All species	15,930	21,777	22,620	21,412	15,264	6,490	2,568	12,669	2,133	3,592	5,311	129,766

Table 92.--Annual mortality of sawtimber (Scribner rule) on other public and privately owned timberland in Idaho by species and diameter class, 1980

Species	Diameter class (inches at breast height)											
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-22.9	23.0-24.9	25.0-26.9	27.0-28.9	29.0+	All classes
	Thousand board feet, Scribner rule											
Douglas-fir	2,921	2,678	5,547	2,603	3,669	1,200	797	2,407	687	465	2,151	25,125
Ponderosa pine	415	2,083	2,060	5,052	1,469	--	--	1,906	--	--	795	13,780
Western white pine	197	2,867	4,576	972	1,546	2,051	--	911	1,023	2,257	993	17,393
Lodgepole pine	2,451	843	3,220	186	1,414	--	--	--	93	--	--	8,207
Whitebark pine	--	--	24	--	--	--	--	--	--	--	--	24
Limber pine	--	--	--	64	--	--	--	--	--	--	--	64
Western larch	1,620	385	256	2,450	313	164	76	3,423	--	326	--	9,013
Grand fir	3,128	5,350	3,206	3,969	4,324	1,326	202	1,381	--	--	152	23,038
Subalpine fir	916	1,648	174	264	167	87	135	62	95	--	--	3,548
Engelmann spruce	--	162	97	250	418	--	79	186	--	--	--	1,192
Western hemlock	1,278	741	--	115	--	--	--	--	--	149	636	2,919
Western redcedar	--	639	--	--	--	95	933	878	--	--	--	2,545
Total softwoods	12,926	17,396	19,160	15,925	13,320	4,923	2,222	11,154	1,898	3,197	4,727	106,848
Aspen	XXXXXXX	89	--	--	--	--	--	--	--	--	--	89
Cottonwood	XXXXXXX	--	--	2,338	--	780	--	--	--	--	--	3,118
Total hardwoods	XXXXXXX	89	--	2,338	--	780	--	--	--	--	--	3,207
All species	12,926	17,485	19,160	18,263	13,320	5,703	2,222	11,154	1,898	3,197	4,727	110,055

Table 93.--Annual mortality of growing stock on other public and privately owned timberland in Idaho by cause of death and species, 1980

Species	Cause of Death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand cubic feet								
Douglas-fir	865	2,215	64	--	2,661	57	--	1,645	7,507
Ponderosa pine	1,843	685	--	--	353	53	22	428	3,384
Western white pine	824	4,113	--	--	--	--	47	209	5,193
Lodgepole pine	802	906	--	--	28	581	--	314	2,631
White bark pine	--	--	--	--	--	--	--	5	5
Limber pine	--	14	--	--	--	--	--	--	14
Western larch	1,223	670	--	--	281	24	29	660	2,887
Grand fir	2,386	3,290	--	--	396	20	100	484	6,676
Subalpine fir	14	48	--	--	36	--	--	864	962
Engelmann spruce	--	22	--	--	132	--	16	68	238
Western hemlock	--	--	--	--	85	--	214	434	733
Western redcedar	--	164	--	--	482	--	171	--	817
Total softwoods	7,957	12,127	64	--	4,454	735	599	5,111	31,047
Aspen	--	1,230	--	--	--	14	18	380	1,642
Cottonwood	--	--	--	--	--	--	--	742	742
Total hardwoods	--	1,230	--	--	--	14	18	1,122	2,384
All species	7,957	13,357	64	--	4,454	749	617	6,233	33,431

Table 94.--Annual mortality of sawtimber (International ¼-inch rule) on other public and privately owned timberland in Idaho by cause of death and species, 1980

Species	Cause of Death								
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	Total
	Thousand board feet, International ¼-inch rule								
Douglas-fir	4,440	7,536	370	--	13,169	40	--	4,115	29,670
Ponderosa pine	9,448	3,885	--	--	1,716	--	103	1,700	16,852
Western white pine	3,951	14,896	--	--	--	--	--	1,172	20,019
Lodgepole pine	3,413	5,219	--	--	161	--	--	912	9,705
White bark pine	--	--	--	--	--	--	--	29	29
Limber pine	--	77	--	--	--	--	--	--	77
Western larch	5,231	1,069	--	--	366	--	--	3,783	10,449
Grand fir	9,764	14,028	--	--	1,023	--	--	2,141	26,956
Subalpine fir	77	261	--	--	190	--	--	3,685	4,213
Engelmann spruce	--	119	--	--	793	--	88	378	1,378
Western hemlock	--	--	--	--	364	--	966	2,265	3,595
Western redcedar	--	828	--	--	2,286	--	--	--	3,114
Total softwoods	36,324	47,918	370	--	20,068	40	1,157	20,180	126,057
Aspen	--	--	--	--	--	--	101	--	101
Cottonwood	--	--	--	--	--	--	--	3,608	3,608
Total hardwoods	--	--	--	--	--	--	101	3,608	3,709
All species	36,324	47,918	370	--	20,068	40	1,258	23,788	129,766

Table 95.--Annual mortality of sawtimber (Scribner rule) on other public and privately owned timberland in Idaho by cause of death and species, 1980

Species	Cause of Death								Total
	Insects	Disease	Fire	Animal	Weather	Suppression	Logging	Unknown	
	Thousand board feet, Scribner rule								
Douglas-fir	3,769	6,385	330	--	11,322	24	--	3,295	25,125
Ponderosa pine	7,862	3,231	--	--	1,396	--	79	1,212	13,780
Western white pine	3,474	12,925	--	--	--	--	--	994	17,393
Lodgepole pine	2,965	4,363	--	--	130	--	--	749	8,207
White bark pine	--	--	--	--	--	--	--	24	24
Limber pine	--	64	--	--	--	--	--	--	64
Western larch	4,629	910	--	--	326	--	--	3,148	9,013
Grand fir	8,373	12,014	--	--	876	--	--	1,775	23,038
Subalpine fir	61	225	--	--	163	--	--	3,099	3,548
Engelmann spruce	--	97	--	--	692	--	78	325	1,192
Western hemlock	--	--	--	--	298	--	741	1,880	2,919
Western redcedar	--	639	--	--	1,906	--	--	--	2,545
Total softwoods	31,133	40,853	330	--	17,109	24	898	16,501	106,848
Aspen	--	--	--	--	--	--	89	--	89
Cottonwood	--	--	--	--	--	--	--	3,118	3,118
Total hardwoods	--	--	--	--	--	--	89	3,118	3,207
All species	31,133	40,853	330	--	17,109	24	987	19,619	110,055

Table 96.--Area of other public and privately owned woodland in Idaho by forest type and ownership class, 1981

Forest type	Ownership class			Total
	Other public	Forest industry	Nonindustrial private	
	WOODLAND			
	Thousand acres			
Pinyon-juniper	42.1	--	38.6	80.7
Juniper	306.3	0.2	62.2	368.7
Western juniper	132.9	--	28.5	161.4
Total woodland softwoods	481.3	0.2	129.3	610.8
Oak	([1])	--	--	([1])
Mountain brush	22.8	0.4	19.1	42.3
Riparian	12.4	0.8	56.7	69.9
Other hardwoods	43.3	8.8	43.3	95.4
Total woodland hardwoods	78.5	10.0	119.1	207.6
All types	559.8	10.2	248.4	818.4

[1]Less than 50 acres.

Table 97.--Net volume, net annual growth and annual mortality of other public and privately owned woodland in Idaho by species and ownership class

Species	Ownership class			
	Other public	Forest industry	Nonindustrial private	Total
	WOODLAND			
	Thousand cubic feet			
Net volume, 1981:				
Douglas-fir	2,477	--	2,634	5,111
Western redcedar	55	--	348	403
Aspen	103	--	--	103
Cottonwood	85	--	530	615
Pinyon/juniper	226,205	29	71,038	297,272
Woodland hardwoods	31,640	522	23,952	56,114
Total	260,565	551	98,502	359,618
Net annual growth, 1980:				
Douglas-fir	64	--	82	146
Western redcedar	3	--	18	21
Aspen	4	--	--	4
Cottonwood	3	--	19	22
Pinyon/juniper	3,875	2	1,198	5,075
Woodland hardwoods	533	28	987	1,548
Total	4,482	30	2,304	6,816
Annual mortality, 1980:				
Douglas-fir	--	--	--	--
Western redcedar	--	--	--	--
Aspen	--	--	--	--
Cottonwood	--	--	--	--
Pinyon/juniper	99	--	--	99
Woodland hardwoods	13	1	26	40
Total	112	1	26	139

APPENDIX IV: TREE SPECIES NATIVE TO IDAHO

Coniferous

Grand fir	*Abies grandis*
Subalpine fir	*A. lasiocarpa*
Western juniper	*Juniperus occidentalis*
Utah juniper	*J. osteosperma*
Rocky Mountain juniper	*J. scopulorum*
Subalpine larch	*Larix lyallii*
Western larch	*L. occidentalis*
Engelmann spruce	*Picea engelmannii*
Blue spruce	*P. pungens*
Whitebark pine	*Pinus albicaulis*
Lodgepole pine	*P. contorta*
Limber pine	*P. flexilis*
Western white pine	*P. monticola*
Ponderosa pine	*P. ponderosa*
Douglas-fir	*Pseudotsuga menziesii* var. *glauca*
Western redcedar	*Thuja plicata*
Western hemlock	*Tsuga heterophylla*
Mountain hemlock	*T. mertensiana*

Deciduous

Boxelder	*Acer negundo*
Red alder	*Alnus rubra*
Paper birch	*Betula papyrifera*
Green ash	*Fraxinus pennsylvanica*
Balsam poplar	*Populus balsamifera*
Black cottonwood	*P. trichocarpa*
Quaking aspen	*P. tremuloides*
Cascara buckthorn	*Rhamnus purshiana*
Peachleaf willow	*Salix amygdaloides*

Benson, Robert E.; Green, Alan W.; Van Hooser, Dwane D. Idaho's forest resources. Resource Bulletin INT-39. Ogden, UT: U.S. Department of Agriculture, Forest Service, Intermountain Research Station; 1987. 114 p.

Presents highlights of the forest resources of Idaho as of 1981. Describes the forest resources, their extent, condition, and location, and discusses levels of some nontimber use of forest lands. Includes statistical tables: area by land classes, ownership, growing-stock and sawtimber volumes, growth, mortality, roundwood products output, utilization, and residues.

KEYWORDS: timberland, forest inventory, timber volume, timber mortality, timber removals

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