United States
Department of
Agriculture

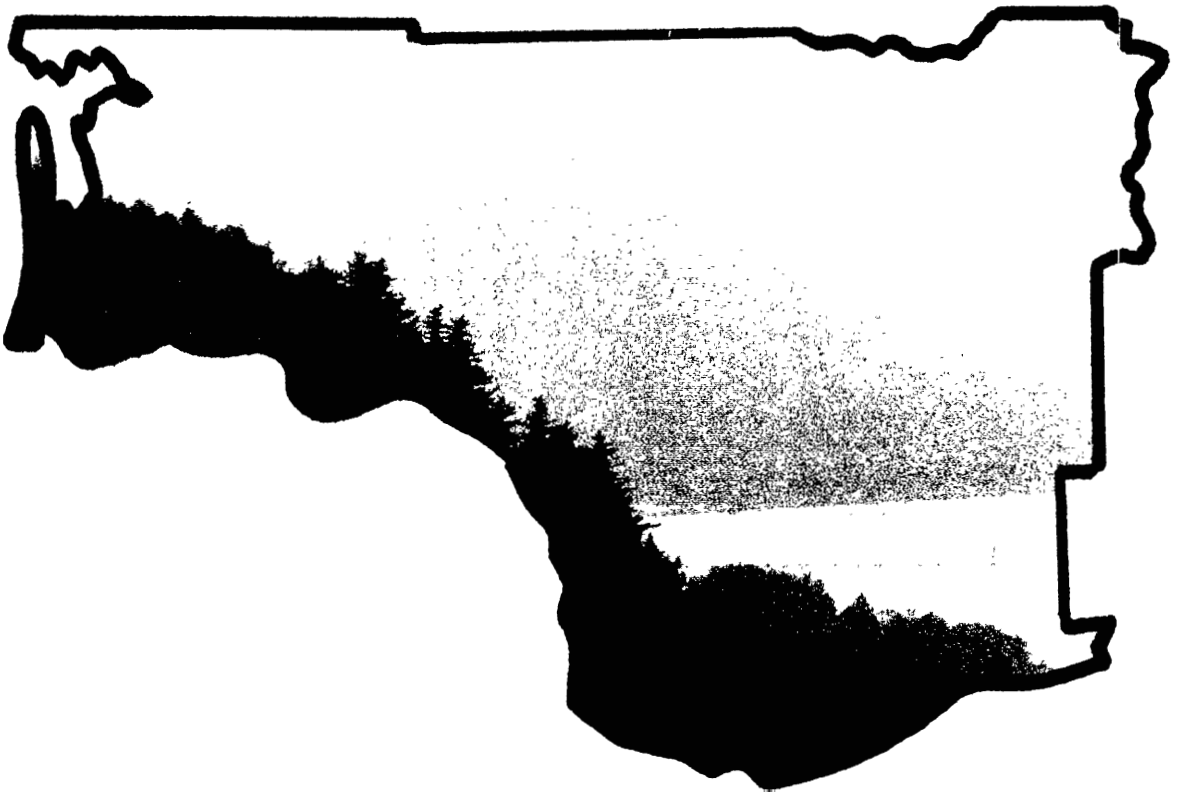
Forest Service

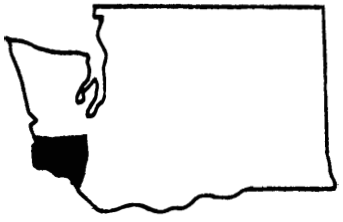
Pacific Northwest
Research Station

Resource Bulletin
PNW-RB-177
August 1991

Preliminary Timber Resource Statistics for Southwest Washington

Colin D. MacLean, Janet L. Ohmann, and Patricia M. Bassett





Authors

COLIN D. MacLEAN is a mensurationist, JANET L. OHMANN is a research forester, and PATRICIA M. BASSETT is a programmer/analyst, Forestry Sciences Laboratory, P.O. Box 3890, Portland, Oregon 97208-3890.

Abstract

MacLean, Colfn D.; Ohmann, Janet L.; Bassett, Patrlcla M. 1991. Preliminary timber resource statistics for southwest Washington. Resour. Bull. PNW-RB-177. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 46 p.

This report summarizes a 1988 timber inventory of six counties in southwest Washington: Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

Keywords: Forest surveys, forest inventory, statistics (forest), timber resources, resources (forest), southwest Washington, Washington (southwest).

Summary

The southwest Washington resource area (Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum Counties) totals 4,551,000 acres, of which an estimated 3,749,000 acres are forested and an estimated 3,432,000 acres are classified as timberland. The area has 14.6 billion cubic feet of standing timber with 55 percent of this volume in public ownership.

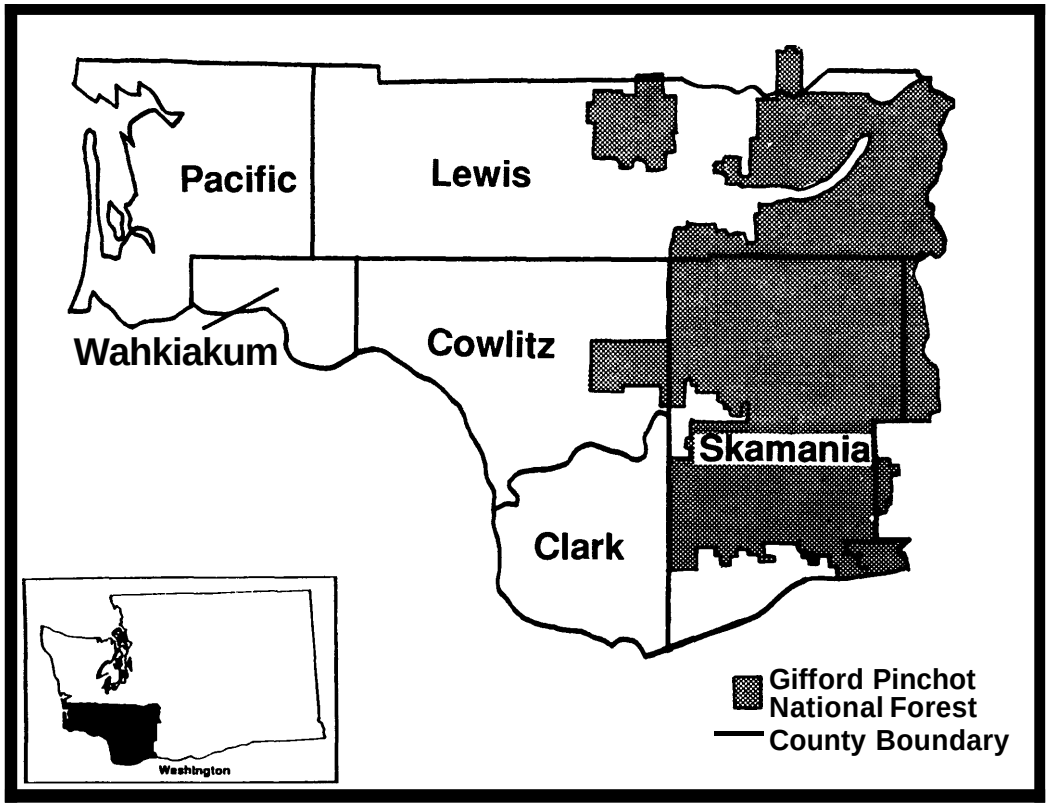
Preface

Forest Inventory and Analysis is a nationwide project of the USDA Forest Service authorized by the Forest and Rangeland Renewable Resources Research Act of 1978. Work units of the project, located at Forest Service research and experiment stations, conduct forest resource inventories throughout the 50 States. The Pacific Northwest Research Station at Portland, Oregon, is responsible for inventories in Alaska, California, Hawaii, Oregon, and Washington.

Contents

Tables

Map of Southwest Washington Counties



Introduction

This report presents statistics from the latest inventory of the timber resources of six counties (Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum) in southwest Washington. Southwest Washington was first inventoried in 1931-32; subsequent inventories were taken in 1938-40, 1948-50, 1963, and 1978.

Field data for all private land and all public land except for National Forests were collected in summer 1988 by the Forest Inventory and Analysis Work Unit (FIA) of the Pacific Northwest Research Station. Inventory data for National Forest land were collected by personnel of the Gifford Pinchot National Forest.

The statistical tables presented in this report differ in format from those in earlier jnventory reports (Bassett and Oswald 1981, Hazard 1965). The western core tables (tables 1-22) are standard tables designed to provide consistent resource data for all Western States and will be included in statistical reports prepared by the FIA work units in Anchorage, AK; Ogden, UT; and Portland, OR. The supplemental tables (tables 23-33) include both information previously reported by the Portland FIA unit but not included in the core tables and new information not previously reported but requested by users of our inventory data. With minor exceptions, all the resource statistics provided by Bassett and Oswald (1981) have been updated to January 1, 1989, and appear in this report.[1]

Scientific names of trees (Little 1979) are given on page 9 of this report. See "Terminology" for definitions of terms used in this report.

Inventory Procedures

All Lands Other Than National Forests

For lands other than National Forests, the sampling design was double sampling for stratification (Cochran 1977). The primary sample was a grid of 6,790 photo points established in 1978 and reexamined in 1988. At each photo point, owner group and major land class (timberland, other forest, nonforest) were identified and, on forested points, stage of development, major type, and broad stocking class were determined. The secondary sample was a grid of 435 field plots that subsampled the primary grid at about every 16th photo point. During the 1963 inventory, permanent plots were established at every timberland location on the field plot grid. Each of these plots consisted of 10 variable-radius points distributed over 1 acre. In 1978, these 10-point plots were replaced with 5-point plots that sampled about 8 acres (MacLean 1980). In 1988, the 5-point plots were remeasured and the data combined with new classifications on the 6,790 photo points to provide current estimates of timber volume, growth, mortality, removals, and area attributes such as forest type, site class, and stand-size class.

---

[1] An electronic version of tables in this report is available in Lotus 1-2-3 spreadsheet format. Send computer disk and a self-addressed mailing envelop to Forest Inventory and Analysis, P.O. Box 3890, Portland, OR 97208-3890. (Mention of a commercial or proprietary product does not constitute endorsement by the USDA.)

Gifford Pinchot National Forest

The design for the **1981** inventory of the Gifford Pinchot National Forest was a stratified random sample with optimum allocation of field plots (Cochran **1977**).[2] Strata, based on management criteria, were delineated on aerial photographs and a total of **355** field plots were allocated to the various strata in proportion to their estimated stratum variance in Scribner board-foot volume. Recent clearcuts and young plantations were excluded from the inventory as were areas not qualifying as timberland. Data for excluded areas have been added'to the inventory data based on stand examination records and other ancillary data. All area statistics have been updated to reflect conditions as of January **1, 1989,** but volume statistics are as of **1981,** adjusted for timber harvest. Further information can be obtained from the USDA Forest Service, Pacific Northwest Region, Division of Timber Management. P.O. Box **3623,** Portland, OR **97208-3623.**

Changes Since the Previous Inventory

The eruption of Mount St. Helens in May **1980** had a substantial effect on the timber resources of southwest Washington. Shortly after the eruption, inventory data were combined with aerial maps of the blast zone to develop estimates of damage to forest resources. Estimates of losses in the Gifford Pinchot National Forest were provided by the Forest; estimates of losses from other lands were based on FIA inventory data. About **146** thousand acres **of** forest land were estimated to have been denuded or heavily damaged by the blast—61 thousand acres on the Gifford Pinchot National Forest, **14** thousand acres on State land, and **71** thousand acres on private land. The total timber loss was estimated to be **1.6** billion board feet.

In **1982,** the Congress established the Mount St. Helens National Volcanic Monument, encompassing **110,000** acres of the blast area. To create the new monument, National Forest, State, and private lands were exchanged, and timberland was reserved from harvest. Land exchanges also occured in **1986** as a result of the establishment of the Columbia River Gorge National Scenic Area, and **85,000** acres of new dedicated wilderness were created within the Gifford Pinchot National Forest by the passage of **1984** wilderness act. Many of the changes in inventory statistics since the **1978** inventory (Bassett and Oswald **1978)** are a direct result of either the effects of the eruption or the land exchanges and timber withdrawals that have occurred since then.

Tables **30, 31,** and **32** present information on the changes in area and volume that have occurred outside the Gifford Pinchot National Forest since the **1978** inventory. Detailed information on changes on these lands will be presented in a later publication. Change information for National Forest land is not available now. Comparisons of statistics from this report with those presented by Bassett and Oswald **(1978)** are unreliable estimators of change for the following reasons:

1. The accuracy of the current inventory statistics was improved by new photo interpretation on the latest available aerial photographs. To make use of this new information, new stratum weights were calculated to expand the field plots. Thus,

---

[2] **Teply, John. 1981. Gifford Pinchot National Forest summary tables for timber resource inventory. Unpublished report. On file with: U.S. Department of Agriculture, Forest** Service, **Pacific Northwest Region, P.O. Box 3623, Portland, OR 97208-3623.**

even though the same photo points and field plots were used for each inventory, any given field plot in the current inventory represents a slightly different number of acres than it did in the earlier inventory.

2. We try constantly to improve the data base. On some plots, better site tree were obtained, thus improving our estimate of site capability. For hemlock sites, the availability of new site curves (Wiley 1978) permitted improved estimates of site. After careful examination, ownership or land class was revised on a few plots. These changes reflect new information or reevaluation, not resource change.

3. Ownership classifications have been revised since the last inventory. In 1978, forest industry lands were defined as lands belonging to companies or individuals operating wood-using plants. Because this definition no longer identifies most industrial timber growers, we have broadened the definition to include all companies holding land for timber production.

Reliability of Inventory Data

National Forest area statistics are based on maps and therefore are without sampling error. Confidence intervals are unavailable for estimates of volume and growth of National Forest timber.

All area and volume statistics for areas outside National Forests are based on sampling and are subject to sampling error. Confidence intervals (68-percent probability) for the estimated timberland area, cubic-foot volume, and net annual cubic-foot growth by owner class are as follows:

Owner	Timberland area	Net volume	Net annual growth
	Thousand acres	*Million cubic feet*	
National Forest	939± 0	5,812±NA	57±NA
Other public	436±17	2,207±184	85f 7
Forest industry	1,541+24	4,943±309	250±13
Other private	514±16	1,635±152	64k 6
All owners, other than National Forest	2,491±25	8,785±382	400±16
All owners	3,431+25	14,597±NA	457±NA

Confidence intervals are quantitative expressions of the reliability of the timberland area, volume, and growth statistics. The above tabulation indicates, for instance, a two-in-three (68-percent) chance that the timberland area for all owners other than National Forest is within the range of 2,466,000 to 2,516,000 acres.

Confidence intervals vary by both size of the estimate and variance of the item being estimated. If variance is assumed constant, confidence intervals can be approximated for estimates of various sizes. The confidence interval guides that follow are based on the assumption that an average relation exists between variance and the size of the estimates, and thus they provide only an approximation of the reliability of individual estimates.

The following tabulations approximate confidence bounds for table cells of various sizes in this report:

Timberland area	Confidence interval	
	By owner	By type or class
	Thousand acres	
1,000	f20	+55
800	+18	±51
600	f16	k45
400	f14	k38
200	±11	f29
100	±8	±22
50	±6	f17
25	f5	f13
15	±4	±11
10	±3	±9

Growing stock volume	Confidence interval		Net growth	Confidence interval	
	By species	By type		By species	By type
	Million cubic feet			*Thousand cubic feet*	
6,000	f338	±338	200,000	±11,500	±18,600
4,000	±273	k308	100,000	±7,800	±12,600
2,000	±190	±242	50,000	±5,200	±8,600
1,000	±132	f219	25,000	±3,500	±5,900
800	f117	±197	15,000	±2,600	±4,400
600	f102	f171	10,000	±2,100	53,600
400	+82	f141	5,000	±1,400	±2,400
200	+56	±101	1,000	±600	±1,000
100	+35	f72	500	±400	±500
50	+20	k36	100	±100	±100
25	f12	+21	10	±10	±10
15	±8	+15			
10	±6	±10			
5	±3	±5			

Actual confidence intervals have been calculated for the tabular data in this report and are available on request from the Forest Inventory and Analysis Research Work Unit, Forestry Sciences Laboratory, P.O. Box 3890, Portland, Oregon 97208-3890.

Terminology

Class of timber—A classification of trees as growing stock, cull, and salvable dead. Growing-stock trees are divided into poletimber and sawtimber trees.

County and municipal lands—Lands owned by county and other local public agencies.

Cull trees – Live trees of noncommercial species, or live trees of commercial species that are more than 75 percent defective.

Cull trees, **rotten**—Cull trees with defect caused primarily by rot.

Cull trees, sound—Trees of noncommercial species or cull trees of commercial species with defect caused primarily by poor form and roughness.

Diameter **class**—A classification of trees based on diameter outside the bark measured at breast height, 4-1/2 feet above the ground. D.b.h. is the common abbreviation for "diameter at breast height."

Even-aged—Stands where 70 percent or more of the stocking falls within three adjacent 10-year age classes.

Farmer owned—Lands owned by the operators of farms.

Forest industry lands—Lands owned by companies that grow timber for industrial use. Includes companies both with and without wood processing plants.

Forest land—Land at least 10 percent stocked by live trees or land formerly having such tree cover and not currently developed for nonforest use. The minimum area recognized is 1 acre.

Forest types – Stands with 70 percent or more of the stocking in live conifer trees are classed as pure softwood types; stands with 50 to 69 percent of the stocking in live conifer trees are classed as **softwood/hardwood** types. Stands with 70 percent or more of the stocking in live hardwood trees are classed as pure hardwood types; stands with 50 to 69 percent of the stocking in live hardwood trees are classed as **hardwood/softwood** types. The specific forest type reflects the individual species of live softwood or hardwood tree with the greatest total stocking.

Growing-stock trees—All live trees except cull trees.

Growing-stock volume—Net volume in cubic feet of live sawtimber and poletimber growing-stock trees from 12-inch stump to a minimum 4-inch top (of central stem) outside the bark. Net volume equals gross volume less deduction for rot and missing bole sections.

Growth, current net annual—The net increase in volume of trees during a specified year. Components of net annual growth include (a) the increment in net volume of sawtimber and poletimber trees alive at the beginning of the year and surviving to the year's end, plus (b) the net volume of trees reaching poletimber or sawtimber size during the period, minus (c) mortality—the net volume of trees that died during the year.

Growth, periodic gross – The increase in volume of trees, during a specified period, attributable to increasing tree size. Gross growth includes (a) the increment in net volume of trees alive at the beginning of the specified period and surviving to the period's end, (b) the increment in net volume of trees alive at the beginning of the specified period and harvested during the period, and (c) ingrowth—the net volume of trees reaching poletimber or sawtimber size during the period.

Hardwoods—Nonconiferous trees, usually broad-leaved.

Industrial wood—All commercial roundwood products except fuelwood.

Land area—Area reported as land by the Bureau of the Census. Total land area includes dry land and land temporarily or partially covered by water such as marshes, swamps, and river flood plains; streams, sloughs, and canals less than one-eighth mile wide; and lakes, reservoirs, and ponds less than 40 acres in area.

Land class – A classification of land by major use. The minimum area for classification is 1 acre.

Mean annual increment — A measure of the productivity of forest land in terms of the average increase in cubic-foot volume per acre per year. For a given species and site index, the average is based on the age at which the mean annual increment culminates for fully stocked stands. When productivity is calculated, nonforest inclusions of less than 1 acre are excluded.

Miscellaneous Federal lands – Federal lands other than lands administered by the Forest Service or the Bureau of Land Management.

Miscellaneous private owners – All private owners not otherwise classified.

Mortality, average annual—Annual loss of growing-stock volume from trees dying between inventories (in southwest Washington, between 1978 and 1988). Sometimes shown as periodic mortality—the loss between inventories.

National Forest lands—Federal lands that have been designated by Executive Order or statute as National Forest or purchase units and other lands under the administration of the Forest Service, U.S. Department of Agriculture, including experimental areas and Bankhead-Jones Title III lands.

Noncommercial species – A tree species not suitable for industrial wood products.

Nonforest land—Land that has never supported forests or was formerly forested and is currently developed for nonforest uses. Included are lands used for agricultural crops, Christmas tree farms, improved pasture, residential areas, city parks, constructed roads, operating railroads and their right-of-way clearings, powerline and pipeline clearings, streams more than 30 feet wide, and 1- to 40-acre areas of water classified by the Bureau of the Census, U.S. Department of Commerce, as land. If intermingled in forest areas, unimproved roads and other nonforest strips must be more than 120 feet wide, and clearings or other areas must be 1 acre or larger to qualify as nonforest land.

Nonstocked areas—Timberland less than 10 percent stocked with growing-stock trees.

Other forest land—Forest land incapable of producing 20 cubic feet per acre per year of industrialwood because of adverse site conditions such as sterile soils, dry climate, poor drainage, high elevation, steepness, or rockiness.

Other private lands—Private lands not owned by forest industry. Farmer-owned lands, Native American lands, and miscellaneous private lands are included.

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

Poletimber stands—Stands with a mean diameter (weighted by basal area) from 5.0 to 9.0 inches if softwood and from 5.0 to 11.0 inches if hardwood.

Poletimber trees—Live trees of commercial species, of good form and vigor, that are at least 5.0 inches in d.b.h. but'smaller than sawtimber size.

Removals, average annual—The annual volume of trees removed by cutting, bulldozing, girdling, or poisoning during a specified period. Includes timber removed by harvest, silvicultural activity, and land clearing. Sometimes shown as periodic removals—the removals between inventories.

Reserved timberland—Land capable of producing 20 cubic feet or more per acre per year but withdrawn from timber utilization through statute, ordinance, or administrative order.

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

Salvable dead trees—Dead trees—either standing or down—of commercial species and at least 9.0 inches in d.b.h. if softwood and at least 11.0 inches in d.b.h. if hardwood, containing 25 percent or more sound wood volume and at least one merchantable 12-foot log if softwood or one merchantable 8-foot log if hardwood.

Sapling and seedling stands—Stands with a mean diameter (weighted by basal area) less than 5.0 inches.

Sapling and seedling trees—Live trees of commercial species less than 5.0 inches in d.b.h., with no diseases, defects, or deformities likely to prevent their becoming poletimber trees.

Saw-log portion—The bole of sawtimber trees between the stump and the saw-log top.

Sawtimber stands—Stands with a mean diameter (weighted by basal area) larger than 9.0 inches if softwood and larger than 11.0 inches if hardwood.

Sawtimber trees—Live softwood trees of commercial species at least 9.0 inches in d.b.h. and live hardwood trees of commercial species at least 11.0 inches in d.b.h. At least 25 percent of the board-foot volume in a sawtimber tree must be free from defect. Softwood trees must contain at least one 12-foot saw log with a top diameter of not less than 6 inches inside bark; hardwood trees must contain at least one 8-foot saw log with a top diameter of not less than 8 inches inside bark.

Sawtimber volume—Net volume of sawtimber trees measured in board feet. Net sawtimber volume equals gross volume less deduction for rot, sweep, crook, and other defects that affect use for lumber.

Scribner rule—The common board-foot log rule used locally in determining volume of sawtimber. Scribner volume is estimated in terms of 32-foot logs for conifers and 16-foot logs for hardwoods.

Site class—A classification of the potential productivity of forest land in terms of mean annual increment.

Site index—A measure of the productivity of forest land in terms of the average height of dominant and codominant trees at a specified age.

Softwoods—Coniferous trees, usually evergreen, with needles or scalelike leaves.

Stand age—The 10-year age class that best characterizes the stand. See "even-aged" and "uneven-aged" for more detail.

Stand-size class—A classification of stands based on tree size. Stand-size classes are large sawtimber, small sawtimber, poletimber, and sapling and seedling stands.

State lands—Lands owned by States or administered by State agencies.

Timber harvest—Volume of roundwood removed from forest land for products.

Timber volume—Includes the net volume in cubic feet of poletimber and sawtimber trees and salvable dead sawtimber trees of all species, the net volume in cubic feet of cull trees of commercial species, and gross volume of noncommercial species. Volume is measured from stump to a minimum 4-inch top outside the bark.

Timberland—Forest land capable of producing 20 cubic feet or more per acre per year of industrial wood and not withdrawn from timber utilization.

Uneven-aged—Stands where less than 70 percent of the tree stocking falls in three adjacent 10-year age classes.

Upper stem portion—The bole of sawtimber trees above the saw-log top—7.0 inches outside the bark for softwoods and 9.0 inches outside the bark for hardwoods-to a minimum top diameter of 4.0 inches outside the bark, or to the point where the central stem breaks into limbs.

Names Of Trees

Common names	Scientific name
Softwoods:	
Alaska-cedar	***Chamaecyparis nootkatensis*** (D. Don) Spach
Douglas-fir	***Pseudotsuga menziesii*** (Mirb.) Franco
Engelmann spruce	***Picea engelmannii*** Parry ex Engelm.
Grand fir	***Abies grandis*** (Dougl. ex D. Don.) Lindl.
Lodgepole pine	***Pinus conforta*** Dougl. ex Loud.
Mountain hemlock	***Tsuga mertensiana*** (Bong.) Carr.
Noble fir	***Abies procera*** Rehd.
Pacific silver fir	***Abies amabilis*** Dougl. ex Forbes
Ponderosa pine	***Pinus ponderosa*** Dougl. ex Laws.
Sitka spruce	***Picea sitchensis*** (Bong.) Carr.
Subalpine fir	***Abies lasiocarpa*** (Hook.) Nutt.
Western hemlock	***Tsuga heterophylla*** (Raf.) Sarg.
Western larch	***Larix occidentalis*** Nutt.
Western redcedar	***Thuja plicata*** Donn ex D. Don
Western white pine	***Pinus monticola*** Dougl. ex D. Don
Whitebark pine	***Pinus afbicaulis*** Engelm.
Hardwoods:	
Bigleaf maple	***Acer macrophyllum*** Pursh
Bitter cherry	***Prunus emarginata*** Dougl. ex Eaton
Black cottonwood	***Populus trichocarpa*** Torr. & Gray
Oregon ash	***Fraxinus lafifolia*** Benth.
Oregon white oak	***Quercus garryana*** Dougl. ex Hook.
Pacific madrone	***Arbutus menziesii*** Pursh
Quaking aspen	***Populus tremuloides*** Michx.
Red alder	***Alnus rubra*** Bong.
Willow	***Salix*** spp.

TABLE 1--AREA BY COUNTY AND LAND CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a b]

COUNTY	FOREST LAND					NONFOREST LAND[c]	ALL LAND[d]
	TIMBERLAND	RESERVED TIMBERLAND	OTHER FOREST	RESERVED OTHER FOREST	TOTAL		
	THOUSAND ACRES						
CLARK	215	2	6	--	223	178	401
COWLITZ	585	14	9	--	607	114	721
LEWIS	1,137	93	25	26	1,281	270	1,550
PACIFIC	514	2	10	--	526	63	589
SKAMANIA	809	81	18	19	926	140	1,066
WAHKIAKUM	141	--	2	--	143	24	167
OTHER COUNTIES~	31	5	2	5	43	14	57
ALL COUNTIES	3,431	197	72	50	3,749	803	4,551

-- = none found or less than 500 acres.

[a]Totals may be off because of rounding.

[b]Subject to sampling error.

[C]Includes cropland, pasture and range, swampland, industrial and urban areas, powerline clearings, railroads, and all improved roads and highways; and water as classified by Forest Inventory and Analysis standards but defined by the Bureau of the Census as land.

[d]Source: U.S. Department of Commerce 1983.

[e]Includes Gifford Pinchot National Forest land in Klickitat, Yakima, Pierce, and Thurston Counties.

TABLE 2--AREA OF RESERVED TIMBERLAND AND OTHER FOREST LAND BY FOREST TYPE, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

FOREST TYPE	RESERVED TIMBERLAND	OTHER FOREST		TOTAL
		AVAILABLE	RESERVED	
	THOUSAND ACRES			
DOUGLAS-FIR	68	11	--	79
WESTERN WHITE PINE	4	--	--	4
FIR-SPRUCE	63	1	3	67
HEMLOCK-SITKA SPRUCE	16	18	--	34
LODGEPOLE PINE	2	--	--	2
TOTAL	153	30	3	186
WESTERN HARDWOOD TYPES	1	22	13	36
UNCLASSIFIED~	41	20	34	95
ALL TYPES	197	72	50	317

-- = none found or less than 500 acres.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Information on forest type unavailable.

TABLE 3--AREA OF TIMBERLAND BY COUNTY AND OWNER, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

COUNTY	PUBLIC					PRIVATE				
		OTHER PUBLIC					OTHER PRIVATE			
	NATIONAL FOREST	MISCELLANEOUS FEDERAL	STATE	COUNTY AND MUNICIPAL	TOTAL PUBLIC	FOREST INDUSTRY	FARMER	MISCEL-LANEOUS	TOTAL PRIVATE	ALL OWNERS
	THOUSAND ACRES									
CLARK	1	3	52	2	58	45	9	103	157	215
COWLITZ	8	--	68	--	76	410	8	90	508	585
LEWIS	288	--	116	7	411	547	89	89	725	1,137
PACIFIC	--	4	68	2	74	377	45	18	439	514
SKAMANIA	611	1	75	2	689	73	--	47	120	809
WAHKIAKUM	--	--	34	2	36	88	11	6	105	141
OTHER COUNTIES	31	--	--	--	31	--	--	--	--	31
ALL COUNTIES'	939	8	413	14	1,375	1,541	162	353	2,054	3,431

-- - none found or less than 500 acres.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

'Includes Gifford Pinchot National Forest land in Klickitat, Yakima, Pierce, and Thurston Counties.

TABLE 4--AREA OF TIMBERLAND BY FOREST TYPE AND OWNER, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	THOUSAND ACRES				
DOUGLAS-FIR:					
DOUGLAS-FIR	531	233	699	141	1,603
DOUGLAS-FIR/RED ALDER	--	36	107	28	171
DOUGLAS-FIR/OTHER HARDWOOD	--	--	15	15	30
TOTAL	531	268	821	185	1,805
PONDEROSA PINE	3	--	--	--	3
WESTERN WHITE PINE	2	--	--	--	2
FIR-SPRUCE:					
GRAND FIR	14	5	7	--	26
NOBLE FIR	21	--	34	--	55
PACIFIC SILVER FIR	116	a	14	6	144
SUBALPINE FIR	2	--	--	--	2
ENGELMANN SPRUCE	2	--	--	--	2
MOUNTAIN HEMLOCK	3	--	--	--	3
TOTAL	157	13	55	6	231
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	87	67	325	21	501
WESTERN HEMLOCK/RED ALDER	--	--	23	--	23
SITKA SPRUCE	--	--	--	13	13
TOTAL	87	67	348	35	537
LODGEPOLE PINE	8	--	--	--	8
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	3	10	6	--	20
WESTERN REDCEDAR/RED ALDER	--	--	--	15	15
TOTAL	3	lo	6	15	35
ALL SOFTWOOD TYPES	790	359	1,230	241	2,621
WESTERN HARDWOOD TYPES:					
RED ALDER	4	69	98	125	297
RED ALDER/CONIFER	--	5	116	18	139
BIGLEAF MAPLE	--	--	--	49	49
BIGLEAF MAPLE/CONIFER	--	3	16	33	52
BLACK COTTONWOOD	--	--	20	--	20
OREGON WHITE OAK/CONIFER	--	--	--	6	6
OREGON ASH	--	--	--	21	21
BITTER CHERRY/CONIFER	--	--	7	--	7
TOTAL	4	77	257	254	592
NONSTOCKED[c]	--	--	55	19	73
UNCLASSIFIED[d]	145	--	--	--	145
ALL TYPES	939	436	1,541	514	3,431

-- - none found or less than 500 acres.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

[d] Information on forest type unavailable.

TABLE 5--AREA OF TIMBERLAND BY OWNER AND STAND-SIZE CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

OWNER	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING-SAPLING	NONSTOCKED[c]	ALL CLASSES
	THOUSAND ACRES				
NATIONAL FOREST	648	71	138	81	939
OTHER PUBLIC	318	50	68	--	436
FOREST INDUSTRY	698	209	580	55	1,541
OTHER PRIVATE	308	81	106	19	514
ALL OWNERS	1,972	412	891	154	3,431

-- = none found or less than 500 acres.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 6--AREA OF TIMBERLAND BY OWNER AND SITE CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

OWNER	SITE CLASS[c] ≥225	165-224	120-164	85-119	50-84	20-49	ALL CLASSES
	THOUSAND ACRES						
NATIONAL FOREST	--	78	289	236	294	[d]42	939
OTHER PUBLIC	51	182	152	16	33	--	433
FOREST INDUSTRY	276	706	390	78	70	14	1,533
OTHER PRIVATE	19	170	202	87	34	--	512
ALL OWNERS	346	1,136	1,032	417	430	56	3,417

-- = none found or less than 500 acres.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Mean annual cubic-foot growth per acre at culmination, in fully stocked natural stands. The areas shown here exclude 13,000 acres of nonforest inclusions on land classed as timberland.

[d] Includes 18,000 acres of land in site class 0-19.

TABLE 7--AREA OF TIMBERLAND BY FOREST TYPE AND STAND-SIZE CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a b]

FOREST TYPE	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING-SAPLING	NONSTOCKED[c]	ALL CLASSES
	THOUSAND ACRES				
DOUGLAS-FIR:					
DOUGLAS-FIR	951	128	523	1	1.603
DOUGLAS-FIR/RED ALDER	58	51	92	--	i71
DOUGLAS-FIR/OTHER HARDWOOD	15	--	16	--	30
TOTAL	1.023	149	630	1	1.805
PONDEROSA PINE	2	--	1	--	3
WESTERN WHITE PINE	1	,	1	--	2
FIR-SPRUCE:					
GRAND FIR	24	1	--	--	26
NOBLE FIR	3	--	51	--	55
PACIFIC SILVER FIR	99	10	34	--	144
SUBALPINE FIR	2	--	--	--	2
ENGELMANN SPRUCE	1	--	1	--	2
MOUNTAIN HEMLOCK	2	1	--	--	3
TOTAL	132	12	87	--	231
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	326	91	83	--	501
WESTERN HEMLOCK/RED ALDER	23	--	--	--	23
SITKA SPRUCE	--	--	13	--	13
TOTAL	350	91	97	--	537
LODGEPOLE PINE	1	6	2	--	8
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	19	--	--	--	20
WESTERN REDCEDAR/RED ALDER	6	--	9	--	15
TOTAL	25	--	9		35
ALL SOFTWOOD TYPES	1.533	259	827	1	2.621
WESTERN HARDWOOD TYPES:					
RED ALDER	175	87	36	--	297
RED ALDER/CONIFER	86	31	21	--	139
BIGLEAF MAPLE	38	11	--	--	49
BIGLEAF MAPLE/CONIFER	43	6	3	--	52
BLACK COTTONWOOD	15	--	4	--	20
OREGON WHITE OAK/CONIFER	6	--	--	--	6
OREGON ASH	11	il	--	--	21
BITTER CHERRY/CONIFER	--		--	--	7
TOTAL	375	i53	64	--	592
NONSTOCKED[c]	--	--	--	73	73
UNCLASSIFIED[d]	65	--	--	79	145
ALL TYPES	1.972	412	891	154	3,431

-- - none found or less than 500 acres.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

[d] Information on forest type unavailable.

TABLE 8--NUMBER OF LIVE TREES ON PRIVATE AND OTHER PUBLIC TIMBERLAND[a] BY SPECIES AND DIAMETER CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[b c]

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)															
	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+	ALL CLASSES
	THOUSAND TREES															
SOFTWOODS:																
DOUGLAS-FIR	87,869	58,265	34,256	26,317	19,579	17.276	12,340	8.951	6,762	5.653	3,691	2,402	1,734	895	1,742	287,731
WESTERN HEMLOCK	68,882	42,726	26,602	24,569	17.638	14.960	9,170	4.468	3,123	1,957	1,356	913	274	107	483	217,228
PACIFIC SILVER FIR	7,631	8,235	1,340	903	518	153	569	13	174	180	74	33	18	23	25	19.889
WESTERN REDCEDAR	6,194	4,643	1,572	1,142	1,078	874	398	795	253	322	146	266	114	111	428	18,335
NOBLE FIR	1.381	738	530	417	--	--	76	169	--	--	29	--	24	--	--	3,363
GRAND FIR	--	--	922	344	521	222	44	48	68	68	90	84	46	12	26	2,495
SITKA SPRUCE	732	2,195	1,043	1,008	475	299	247	75	103	--	37	28	30	--	139	6.411
LODGEPOLE PINE	--	--	--	--	--	--	41	--	--	--	--	--	--	--	--	41
TOTAL SOFTWOODS	172,688	116.802	66,265	54,700	39,808	33,784	22,887	14,518	10.483	8,179	5,423	3,725	2,239	1.148	2,843	555,492
HARDWOODS:																
RED ALDER	39,422	16,886	13,707	14,193	12,392	9,849	6,689	3,549	1.882	920	422	139	82	130	24	120,288
BIGLEAF MAPLE	7.536	3,772	5,382	2.987	3,450	1,685	835	787	647	388	289	222	125	46	250	28,402
BITTER CHERRY	6,450	3,781	1,298	619	320	--	54	--	--	--	--	--	--	--	--	12,521
BLACK COTTONWOOD	690	690	717	--	91	197	--	36	--	86	28	15	40	73	57	2.721
OREGON ASH	2,155	710	1,447	1,072	671	263	43	250	166	146	89	--	--	--	--	7.013
OREGON WHITE OAK	--	--	252	--	221	--	--	--	--	18	--	--	--	--	--	491
PACIFIC DOGWOOD	--	--	827	252	--	--	--	--	--	--	--	--	--	--	--	1,080
OTHER HARDWOODS	--	1.010	153	382	293	--	--	44	23	--	--	--	--	--	--	1,905
TOTAL HARDWOODS	56.252	26,850	23,783	19.505	17,439	11.994	7,622	4.667	2,718	1,558	829	377	247	249	332	174.422
ALL SPECIES	228.940	143.652	90.048	74,205	57,247	45.778	30,509	19,185	13.201	9.737	6.252	4,102	2,486	1.397	3.175	729.914

-- - none found or less than 500 trees.

[a] The number of trees on National Forest timberland is unavailable.

[b] Totals may be off because of rounding.

'Subject to sampling error.

TABLE 9--NUMBER OF GROWING-STOCK TREES ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT) 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	21.0-28.9	29.0+	ALL CLASSES
	THOUSAND TREES												
SOFTWOODS:													
DOUGLAS-FIR	90,516	62,046	42,853	36,060	29,803	24,969	19,346	13,867	11,616	9,261	16,838	5,715	362,891
WESTERN HEMLOCK	71,661	48,087	35,055	30,250	20,343	18,454	11,276	6,547	4,536	3,124	5,182	1,783	256,297
PACIFIC SILVER FIR	25,590	21,373	12,405	7,270	6,145	4,125	3,051	1,792	1.705	1,375	1,956	825	87,611
WESTERN REDCEDAR	8,789	6,081	3,375	2,003	1,652	1,633	968	1,217	678	639	1,318	831	29,182
NOBLE FIR	2,521	604	880	722	245	104	287	329	77	86	235	84	6.171
MOUNTAIN HEMLOCK	793	400	741	1,023	487	404	323	217	304	184	315	95	5,288
GRAND FIR	4,247	1,216	1.500	696	945	584	413	236	308	181	438	61	10,825
SITKA SPRUCE	732	1,464	742	835	475	299	247	75	103	--	94	139	5,206
SUBALPINE FIR	1,306	914	940	504	445	421	101	73	26	46	7	6	4,788
WESTERN WHITE PINE	914	39	258	89	28	41	25	--	7	--	12	8	1,422
LODGEPOLE PINE	49	17	210	116	243	154	165	64	81	16	22	--	1,138
PONDEROSA PINE	408	47	--	--	--	--	13	6	--	--	13	31	519
ENGELMANN SPRUCE	36	--	142	144	155	66	57	79	53	56	200	29	1,016
WESTERN LARCH	--	--	1	--	--	--	12	--	13	--	5	9	40
ALASKA-CEDAR	191	512	262	178	23	59	47	17	37	10	--	18	1,355
TOTAL SOFTWOODS	207,753	142,800	99,363	79,890	60,988	51,313	36,334	24,517	19,544	14,977	26,637	9,634	773,749
HARDWOODS:													
RED ALDER	38,650	16,320	13,430	13.693	12,571	9,908	6,754	3,594	1,873	920	699	18	118,431
BIGLEAF MAPLE	6,975	3,871	5,154	3,187	3,593	1,729	840	721	618	389	609	225	27,911
BITTER CHERRY	6,450	3.781	1,125	404	320	--	54	--	--	--	--	--	12,133
BLACK COTTONWOOD	--	--	717	--	91	197	--	55	31	86	194	96	1,467
OREGON ASH	2,155	710	1,194	1,072	510	180	43	196	166	42	89	--	6,358
OREGON WHITE OAK	--	--	252	--	221	--	--	--	--	18	--	--	491
TOTAL HARDWOODS	54,230	24,683	21,873	18,355	17,307	12,013	7,690	4,566	2,687	1,455	1,592	340	166,792
ALL SPECIES	261.982	167,483	121,237	98,246	78,296	63,327	44,023	29,083	22.232	16,431	28,229	9,973	940,541

-- - none found or less than 500 trees.

"Totals may be off because of rounding.

[b] Subject to sampling error.

TABLE 10--NET VOLUME OF GROWING STOCK ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

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	21.0-28.9	29.0+	ALL CLASSES
	MILLION CUBIC FEET										
SOFTWOODS:											
DOUGLAS-FIR	104	251	387	548	643	633	707	723	2,022	1,674	7,693
WESTERN HEMLOCK	96	228	298	423	392	295	272	236	544	411	3,196
PACIFIC SILVER FIR	27	40	64	71	80	63	81	86	194	180	885
WESTERN REDCEDAR	8	13	19	26	21	37	28	33	111	172	468
NOBLE FIR	2	5	2	2	7	12	4	5	25	20	84
MOUNTAIN HEMLOCK	1	5	4	5	6	6	11	8	22	15	84
GRAND FIR	3	6	12	14	12	11	18	13	51	15	152
SITKA SPRUCE	2	5	7	5	6	3	4	--	6	77	115
SUBALPINE FIR	2	3	4	6	2	2	1	2	1	1	23
WESTERN WHITE PINE	1	--	--	1	1	--	--	--	1	2	6
LODGEPOLE PINE	1	1	3	3	4	2	4	1	2	--	20
PONDEROSA PINE	--	--	--	--	--	--	--	--	2	8	10
ENGELMANN SPRUCE	--	1	2	1	2	3	3	4	20	6	42
WESTERN LARCH	--	--	--	--	--	--	1	--	1	1	3
ALASKA-CEDAR	1	1	--	1	1	1	2	1	--	3	9
TOTAL SOFTWOODS	246	558	803	1,105	1,177	1,067	1,135	1,114	3,001	2,586	12,792
HARDWOODS:											
RED ALDER	49	127	204	260	254	180	116	67	69	4	1,330
BIGLEAF MAPLE	13	23	49	41	28	35	34	25	48	31	329
BITTER CHERRY	4	3	5	--	1	--	--	--	--	--	13
BLACK COTTONWOOD	2	--	1	6	--	2	1	6	29	23	73
OREGON ASH	4	9	8	5	2	9	10	4	7	--	58
OREGON WHITE OAK	1	--	2	--	--	--	--	1	--	--	4
TOTAL HARDWOODS	74	162	269	312	285	226	161	103	155	58	1,806
ALL SPECIES	321	720	1,073	1,417	1.462	1,294	1,296	1,216	3,155	2,644	14,597

-- = none found or less than 500,000 cubic feet.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

TABLE 11--NET VOLUME OF SAWTIMBER ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

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	21.0-28.9	29.0+	ALL CLASSES
	MILLION BOARD FEET, SCRIBNER RULE								
SOFTWOODS:									
DOUGLAS-FIR	1,041	1,861	2,508	2,698	3,234	3,450	10,510	10,074	35,376
WESTERN HEMLOCK	834	1,503	1,575	1,301	1,288	1,179	2,956	2,615	13,250
PACIFIC SILVER FIR	187	266	321	279	384	436	1,062	1,126	4,060
WESTERN REDCEDAR	45	71	64	124	100	126	465	816	1,811
NOBLE FIR	7	7	25	45	16	26	131	120	376
MOUNTAIN HEMLOCK	10	18	26	24	51	41	122	91	382
GRAND FIR	33	50	46	45	83	61	251	91	659
SITKA SPRUCE	20	11	16	11	12	--	24	415	511
SUBALPINE FIR	9	17	8	9	4	9	3	5	63
WESTERN WHITE PINE	1	2	2	--	1	--	7	15	28
LODGEPOLE PINE	8	10	13	8	15	4	9	--	67
PONDEROSA PINE	--	--	1	1	--	--	9	48	59
ENGELMANN SPRUCE	5	4	6	13	16	21	104	34	203
WESTERN LARCH	--	--	1	--	3	--	4	8	16
ALASKA-CEDAR	--	2	3	2	6	2	--	16	31
TOTAL SOFTWOODS	2,199	3,821	4,615	4,560	5,213	5,354	15,655	15,473	56,891
HARDWOODS:									
RED ALDER	4	1,004	1,178	911	608	352	377	21	4,454
BIGLEAF MAPLE	6	153	128	178	179	132	258	165	1,199
BITTER CHERRY	--	--	4	--	--	--	--	--	4
BLACK COTTONWOOD	--	27	--	12	7	34	176	139	395
OREGON ASH	--	20	10	43	49	22	40	--	184
OREGON WHITE OAK	--	--	--	--	--	4	--	--	4
TOTAL HARDWOODS	10	1,204	1,321	1,144	843	544	851	325	6,241
ALL SPECIES	2,208	5,025	5,936	5,704	6,056	5,898	16,506	15,798	63,132

-- = none found or less than 500,000 board feet

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

TABLE 12--NET VOLUME OF GROWING STOCK ON TIMBERLAND BY SPECIES AND OWNER, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b] [c]

SPECIES	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	MILLION CUBIC FEET				
SOFTWOODS:					
DOUGLAS-FIR	3,460	1,383	2,114	736	7,693
WESTERN HEMLOCK	938	413	1,689	156	3,196
PACIFIC SILVER FIR	797	17	59	12	885
WESTERN REDCEDAR	232	36	117	84	468
NOBLE FIR	65	7	12	--	84
MOUNTAIN HEMLOCK	84	--	--	--	84
GRAND FIR	90	10	23	29	152
SITKA SPRUCE	--	3	108	3	115
SUBALPINE FIR	23	--	--	--	23
WESTERN WHITE PINE	6	--	--	--	6
LODGEPOLE PINE	19	--	--	1	20
PONDEROSA PINE	10	--	--	--	10
ENGELMANN SPRUCE	42				42
WESTERN LARCH	3				3
ALASKA-CEDAR	9	--	--	--	9
TOTAL SOFTWOODS	5,779	1,870	4,123	1,020	12,792
HARDWOODS:					
RED ALDER	12	292	681	345	1,330
BIGLEAF MAPLE	8	44	79	199	329
BITTER CHERRY	--	2	9	1	13
BLACK COTTONWOOD	14	--	43	16	73
OREGON ASH	--	--	8	50	58
OREGON WHITE OAK	--	--	--	4	4
TOTAL HARDWOODS	33	337	820	615	1,806
ALL SPECIES	5,812	2,207	4,943	1,635	14,597

-- = none found or less than 500,000 cubic feet

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Includes trees 5 inches in d.b.h. and larger.

TABLE 13--NET VOLUME OF SAWTIMBER ON TIMBERLAND BY SPECIES AND OWNER, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b] [c]

SPECIES	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	MILLION BOARD FEET, SCRIBNER RULE				
SOFTWOODS:					
DOUGLAS-FIR	17,874	5,872	8,442	3,187	35,376
WESTERN HEMLOCK	5,096	1,506	5,937	711	13,250
PACIFIC SILVER FIR	3,710	62	257	32	4,060
WESTERN REDCEDAR	935	130	425	322	1,811
NOBLE FIR	313	35	28	--	376
MOUNTAIN HEMLOCK	382	--	--	--	382
GRAND FIR	405	32	82	141	659
SITKA SPRUCE	--	8	492	11	511
SUBALPINE FIR	63	--	--	--	63
WESTERN WHITE PINE	28	--	--	--	28
LODGEPOLE PINE	65	--	--	2	67
PONDEROSA PINE	59	--	--	--	59
ENGELMANN SPRUCE	203	--	--	--	203
WESTERN LARCH	16	--	--	--	16
ALASKA-CEDAR	31	--	--	--	31
TOTAL SOFTWOODS	29,179	7,644	15,662	4,405	56,891
HARDWOODS:					
RED ALDER	32	1,064	2,265	1,094	4,454
BIGLEAF MAPLE	13	131	234	821	1,199
BITTER CHERRY	--	--	4	--	4
BLACK COTTONWOOD	80	--	227	88	395
OREGON ASH	--	--	22	162	184
OREGON WHITE OAK	--	--	--	4	4
TOTAL HARDWOODS	125	1,195	2,751	2,170	6,241
ALL SPECIES	29,304	8,839	18,413	6,575	63,132

-- = none found or less than 500,000 board feet.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Includes softwood trees 9.0 inches in d.b.h. and larger and hardwood trees 11.0 inches in d.b.h. and larger.

TABLE 14--NET VOLUME OF GROWING STOCK ON PRIVATE AND OTHER PUBLIC TIMBERLAND,[a] BY FOREST TYPE AND STAND-SIZE CLASS, SOUTHWEST WASHINGTON, JANUARY 1. 1989[b c]

FOREST TYPE	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING-SAPLING	NONSTOCKED[d]	All CLASSES
	MILLION CUBIC FEET				
DOUGLAS-FIR:					
DOUGLAS-FIR	3,594	86	21	--	3,702
DOUGLAS-FIR/RED ALDER	374	26	2	--	402
DOUGLAS-FIR/OTHER HARDWOOD	108	--	--	--	108
TOTAL	4,076	113	24	--	4,212
PONDEROSA PINE	--	--	--	--	--
WESTERN WHITE PINE	--	--	--	--	--
FIR-SPRUCE:					
GRAND FIR	27	--	--	--	27
NOBLE FIR	--	--	--	--	--
PACIFIC SILVER FIR	15	--	5	--	20
SUBALPINE FIR	--	--	--	--	--
ENGELMANN SPRUCE				--	--
MOUNTAIN HEMLOCK				--	--
TOTAL	43	--	5	--	47
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	1,751	234	9	--	1,995
WESTERN HEMLOCK/RED ALDER	102	--	--	--	102
SITKA SPRUCE	--	--	--	--	--
TOTAL	1,854	234	9	--	2,097
LODQEPOLE PINE	--	--	--	--	--
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	82	--	--	--	82
WESTERN REDCEDAR/RED ALDER	6	--	4	--	lo
TOTAL	88	--	4	--	92
All SOFTWOOD TYPES	6,060	347	42	--	6.449
WESTERN HARDWOOD TYPES:					
RED ALDER	815	357	31	--	1,203
RED ALDER/CONIFER	537	66	1	--	604
BIGLEAF MAPLE	144	14	--	--	158
BIGLEAF MAPLE/CONIFER	247	8	--	--	255
BLACK COTTONWOOD	46	--	--	--	46
OREGON WHITE OAK/CONIFER	lo	--	--	--	10
OREGON ASH	26	22	--	--	47
BITTER CHERRY/CONIFER	--	13	--	--	13
TOTAL	1,826	479	32	--	2.337
NONSTOCKED[d]	--	--	--	--	--
UNCLASSIFIED[e]	--	--	--	--	--
ALL TYPES	7,886	826	74	--	8,785

-- = none found or less than 500,000 cubic feet.

[a] Growing-stock volume by forest type not available for National Forest.

[b] Totals may be off because of rounding.

'Subject to sampling error.

[d] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are Included.

[e] Information on volume by unclassified forest type unavailable.

TABLE 15--NET VOLUME OF SAWTIMBER ON PRIVATE AND OTHER PUBLIC TIMBERLAND,[a] BY FOREST TYPE AND STAND-SIZE CLASS. SOUTHWEST WASHINGTON, JANUARY 1, 1989[b c]

FOREST TYPE	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING-SAPLING	NONSTOCKED[d]	ALL CLASSES
	MILLION BOARD FEET, SCRIBNER RULE				
DOUGLAS-FIR:					
DOUGLAS-FIR	14,748	70	36	--	14,854
DOUGLAS-FIR/RED ALDER	1,525	39	--	--	1,564
DOUGLAS-FIR/OTHER HARDWOOD	500	--	--	--	500
TOTAL	16,773	109	36	--	16,918
PONDEROSA PINE	--	--	--	--	--
WESTERN WHITE PINE	--	--	--	--	--
FIR-SPRUCE:					
GRAND FIR	102	--	--	--	102
NOBLE FIR	--	--	--	--	--
PACIFIC SILVER FIR	39	--	1	--	41
SUBALPINE FIR	--	--	--	--	--
ENGELMANN SPRUCE	--	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--	--
TOTAL	142	--	1	--	143
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	6,648	382	--	--	7,030
WESTERN HEMLOCK/RED ALDER	398	--	--	--	398
SITKA SPRUCE	--	--	--	--	--
TOTAL	7,046	382	--	--	7,428
LODGEPOLE PINE	--	--	--	--	--
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	379	--	--	--	379
WESTERN REDCEDAR/RED ALDER	17	--	12	--	29
TOTAL	396	--	12	--	408
ALL SOFTWOOD TYPES	24,358	492	49	--	24,898
WESTERN HARDWOOD TYPES:					
RED ALDER	3,461	1.019	70	--	4,549
RED ALDER/CONIFER	2,298	140	7	--	2,445
BIGLEAF MAPLE	657	5	--	--	662
BIGLEAF MAPLE/CONIFER	859	23	--	--	883
BLACK COTTONWOOD	169	--	--	--	169
OREGON WHITE OAK/CONIFER	27	--	--	--	27
OREGON ASH	116	58	--	--	174
BITTER CHERRY/CONIFER	--	21	--	--	21
TOTAL	7,587	1,266	77	--	8,930
NONSTOCKED[d]	--	--	--	--	--
UNCLASSIFIED~	--	--	--	--	--
ALL TYPES	31,945	1,757	125	--	33,828

-- - none found or less than 500,000 board feet.

[a] Sawtimber volume by forest type not available for National Forest.

[b] Totals may be off because of rounding.

'Subject to sampling error.

[d] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

[e] Information on volume by unclassified forest type unavailable.

TABLE 16--NET VOLUME OF GROWING STOCK ON PRIVATE AND OTHER PUBLIC TIMBERLAND,[a] BY FOREST TYPE AND OWNER. SOUTHWEST WASHINGTON, JANUARY 1, 1989[b c]

FOREST TYPE	OWNER			
	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	MILLION CUBIC FEET			
DOUGLAS-FIR:				
DOUGLAS-FIR	1,271	1,896	535	3,702
DOUGLAS-FIR/RED ALDER	140	174	88	402
DOUGLAS-FIR/OTHER HARDWOOD	--	91	17	108
TOTAL	1,411	2,162	639	4.212
PONDEROSA PINE	--	--	--	--
WESTERN WHITE PINE	--	--	--	--
FIR-SPRUCE:				
GRAND FIR	18	10	--	27
NOBLE FIR	--	--	--	--
PACIFIC SILVER FIR	5	--	15	20
SUBALPINE FIR	--	--	--	--
ENGELMANN SPRUCE	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--
TOTAL	22	10	15	47
HEMLOCK-SITKA SPRUCE:				
WESTERN HEMLOCK	388	1,451	156	1,995
WESTERN HEMLOCK/RED ALDER	--	102	--	102
SITKA SPRUCE	--	--	--	--
TOTAL	388	1,553	156	2,097
LODGEPOLE PINE	--	--	--	--
OTHER SOFTWOOD TYPES:				
WESTERN REDCEDAR	33	49	--	82
WESTERN REDCEDAR/RED ALDER	--	--	10	10
TOTAL	33	49	lo	92
ALL SOFTWOOD TYPES	1,854	3,773	821	6.449
WESTERN HARDWOOD TYPES:				
RED ALDER	326	465	412	1,203
RED ALDER/CONIFER	27	524	53	604
BIGLEAF MAPLE	--	--	158	158
BIGLEAF MAPLE/CONIFER	--	121	133	255
BLACK COTTONWOOD	--	46	--	46
OREGON WHITE OAK/CONIFER	--	--	lo	10
OREGON ASH	--	--	47	47
BITTER CHERRY/CONIFER	--	13	--	13
TOTAL	353	1,170	814	2,337
NONSTOCKED[d]	--	--	--	--
UNCLASSIFIED~	--	--	--	--
ALL TYPES	2,207	4,943	1,635	8,785

.. = none found or less than 500.000 cubic feet.

'Growing stock volume by forest type not available for National Forest.

[b] Totals may be off because of rounding.

[c] Subject to sampling error.

[d] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled €or planting are included.

'Information on volume by unclassified forest type unavailable.

TABLE 17--NET VOLUME OF SAWTIMBER ON PRIVATE AND OTHER PUBLIC TIMBERLAND,[a] BY FOREST TYPE AND OWNER, SOUTHWEST WASHINGTON, JANUARY 1, 1989[b c]

FOREST TYPE	OWNER			
	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	MILLION BOARD FEET, SCRIBNER RULE			
DOUGLAS-FIR:				
DOUGLAS-FIR	5,270	7,232	2,352	14,854
DOUGLAS-FIR/RED ALDER	600	630	334	1,564
DOUGLAS-FIR/OTHER HARDWOOD	--	426	74	500
TOTAL	5,870	8,289	2,759	16,918
PONDEROSA PINE	--	--	--	--
WESTERN WHITE PINE	--	--	--	--
FIR-SPRUCE:				
GRAND FIR	65	37	--	102
NOBLE FIR	--	--	--	--
PACIFIC SILVER FIR	1	--	39	41
SUBALPINE FIR	--	--	--	--
ENGELMANN SPRUCE	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--
TOTAL	66	37	39	143
HEMLOCK-SITKA SPRUCE:				
WESTERN HEMLOCK	1,406	4,940	685	7,030
WESTERN HEMLOCK/RED ALDER	--	398	--	398
SITKA SPRUCE	--	--	--	--
TOTAL	1,406	5,338	685	7,428
LODGEPOLE PINE	--	--	--	--
OTHER SOFTWOOD TYPES:				
WESTERN REDCEDAR	140	239	--	379
WESTERN REDCEDAR/RED ALDER	--	--	29	29
TOTAL	140	239	29	408
ALL SOFTWOOD TYPES	7,482	13,903	3,513	24,898
WESTERN HARDWOOD TYPES:				
RED ALDER	1.273	1,719	1,558	4,549
RED ALDER/CONIFER	84	2,249	111	2,445
BIGLEAF MAPLE	--	--	662	662
BIGLEAF MAPLE/CONIFER	--	352	530	883
BLACK COTTONWOOD	--	169	--	169
OREGON WHITE OAK/CONIFER	--	--	27	27
OREGON ASH	--	--	174	174
BITTER CHERRY/CONIFER	--	21	--	21
TOTAL	1,357	4,510	3,063	8,930
NONSTOCKED[d]	--	--	--	--
UNCLASSIFIED[e]	--	--	--	--
ALL TYPES	8,839	18,413	6.575	33.828

-- = none found or less than 500,000 board feet.

[a] Sawtimber volume by forest type not available for National Forest.

[b] Totals may be off because of rounding.

[c] Subject to sampling error.

[d] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

[e] Information on volume by unclassified forest type unavailable.

TABLE 18--NET VOLUME OF TIMBER ON TIMBERLAND BY CLASS OF TIMBER AND SPECIES GROUP, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

CLASS OF TIMBER	SPECIES GROUP		
	SOFTWOODS	HARDWOODS	ALL SPECIES
	MILLION CUBIC FEET		
SAWTIMBER TREES:			
SAW-LOG PORTION	11,605	1,156	12,761
UPPER-STEM PORTION	382	148	530
TOTAL SAWTIMBER	11,988	1,304	13,292
POLETIMBER TREES	804	502	1,307
ALL GROWING-STOCK TREES	12,792	1,806	14,597
SOUND CULL TREES	1	31	32
ROTTEN CULL TREES	27	4	31
TOTAL CULL TREES	28	35	63
SALVABLE DEAD TREES	507	3	510
ALL TIMBER	13,327	1,844	15,170

·· = none found or less than 500,000 cubic feet.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

TABLE 19--CURRENT NET ANNUAL GROWTH OF GROWING STOCK ON PRIVATE AND OTHER PUBLIC TIMBERLAND BY FOREST TYPE AND OWNER. SOUTHWEST WASHINGTON, 1988[a] [b] [c]

FOREST TYPE	OWNER			
	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS[d]
	THOUSAND CUBIC FEET			
DOUGLAS-FIR:				
DOUGLAS-FIR	45.130	104.245	20,898	170,273
DOUGLAS-FIR/RED ALDER	3,969	9,003	3,971	16.943
DOUGLAS-FIR/OTHER HARDWOOD	--	2.836	874	3,710
TOTAL	49,099	116.084	25,743	190,926
PONDEROSA PINE	--	--	--	--
WESTERN WHITE PINE	--	--	--	--
FIR-SPRUCE:				
GRAND FIR	611	794	--	1,405
NOBLE FIR	--	--	--	--
PACIFIC SILVER FIR	614	--	1,061	1,674
SUBALPINE FIR	--	--	--	--
ENGELMANN SPRUCE	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--
TOTAL	1,225	794	1,061	3,079
HEMLOCK-SITKA SPRUCE:				
WESTERN HEMLOCK	19,834	86,194	6,092	112,120
WESTERN HEMLOCK/RED ALDER	--	4.777	--	4,777
SITKA SPRUCE	--	--	--	--
TOTAL	19,834	90.971	6,092	116.897
LOGDEPOLE PINE	--	--	--	--
OTHER SOFTWOOD TYPES:				
WESTERN REDCEDAR	1,412	1,040	--	2,452
WESTERN REDCEDAR/RED ALDER	--	--	427	427
TOTAL	1,412	1,040	427	2,879
All SOFTWOOD TYPES	71,570	208,889	33.323	313.781
WESTERN HARDWOOD TYPES:				
RED ALDER	12,124	15.623	17,437	45,183
RED ALDER/CONIFER	1.540	17.625	2,803	21,968
BIGLEAF MAPLE	--	--	4,729	4,729
BIGLEAF MAPLE/CONIFER	--	5,408	4,197	9,605
BLACK COTTONWOOD	--	1,622	--	1,622
OREGON WHITE OAK/CONIFER	--	--	396	396
OREGON ASH	--	--	1,401	1,401
BITTER CHERRY/CONIFER	--	1,163	--	1,163
TOTAL	13,664	41,441	30,963	86,067
NONSTOCKED[e]	--	--	--	--
UNCLASSIFIED~	--	--	--	--
ALL TYPES	85,234	250,330	64,286	399.848

-- : none found or less than 500 cubic feet.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

'Current net annual growth on growing stock by forest type not available for National Forest. (Shown by species in Table 28.)

[d] Current net annual growth on growing stock by forest type not available for all owners.

[e] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

[f] Information on volume by unclassified forest type unavailable.

TABLE 20--CURRENT NET ANNUAL GROWTH OF SAWTIMBER ON PRIVATE AND OTHER PUBLIC TIMBERLAND BY FOREST TYPE AND OWNER, SOUTHWEST WASHINGTON, 1988[a b c]

FOREST TYPE	OWNER: OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	All OWNERS[d]
	THOUSAND BOARD PEET, SCRIBNER RULE			
DOUGLAS-FIR:				
DOUGLAS-FIR	240,009	456,745	115,492	812,246
DOUGLAS-FIR/RED ALDER	19,012	36,966	16,040	72,018
DOUGLAS-FIR/OTHER HARDWOOD	--	16,404	4,321	20,725
TOTAL	259,021	510.115	135,853	904,989
PONDEROSA PINE	--	--	--	--
WESTERN WHITE PINE	--	--	--	--
FIR-SPRUCE:				
GRAND FIR	2,208	3,538	--	5,746
NOBLE FIR	--	--	--	--
PACIFIC SILVER FIR	211	--	4,822	5,033
SUBALPINE FIR	--	--	--	--
ENGELMANN SPRUCE	--	--	--	--
MOUNTAIN SPRUCE	--	--	--	--
TOTAL	2,419	3.538	4,822	10,779
HEMLOCK-SITKA SPRUCE:				
WESTERN HEMLOCK	92,067	353,658	32,546	478,271
WESTERN HEMLOCK/RED ALDER	--	23,464	--	23,464
SITKA SPRUCE	--	--	--	--
TOTAL	92,067	377,122	32,546	501,735
LODGEPOLE PINE	--	--	--	--
OTHER SOFTWOOD TYPES:				
WESTERN REDCEDAR	7,377	5.559	--	12,935
WESTERN REDCEDAR/RED ALDER	--	--	1,023	1,023
TOTAL	7.377	5,559	1,023	13,959
All SOFTWOOD TYPES	360,884	896,334	174,244	1,431,462
WESTERN HARDWOOD TYPES:				
RED ALDER	71,310	83,398	76,854	231,562
RED ALDER/CONIFER	5,836	95,285	8,207	109.328
BIGLEAF MAPLE	--	--	23,404	23,404
BIGLEAF MAPLE/CONIFER	--	22.276	25,194	47,470
BLACK COTTONWOOD	--	9,037	--	9,037
OREGON WHITE OAK/CONIFER	--	--	1.362	1,362
OREGON ASH	--	--	4,686	4,686
BITTER CHERRY/CONIFER	--	2,659	--	2,659
TOTAL	77,146	212.655	139,707	429,508
NONSTOCKED[e]	--	--	--	--
UNCLASSIFIED~	--	--	--	--
ALL TYPES	438,030	1,108,989	313,951	1,860,970

-- = none found or less than 500 board feet

[a]Totals may be off because of rounding.

[b]Subject to sampling error.

'Current net annual growth on sawtimber by forest type not available for National Forest. (Shown by species in table 29.)

[d]Current net annual growth on sawtimber by forest type not available for all owners.

[e]Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 21--AVERAGE ANNUAL MORTALITY OF GROWING STOCK ON PRIVATE AND OTHER PUBLIC TIMBERLAND BY FOREST TYPE AND OWNER, SOUTHWEST WASBINQTON, 1988[a] [b] [c]

FOREST TYPE	OWNER			
	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS[d]
	THOUSAND CUBIC FEET			
DOUGLAS-FIR:				
DOUGLAS-FIR	3.411	4,109	947	8,467
DOUGLAS-FIR/RED ALDER	2,075	521	375	2,971
DOUGLAS-FIR/OTHER HARDWOOD	--	146	--	146
TOTAL	5,487	4,775	1,322	11,584
PONDEROSA PINE	--	--	--	--
WESTERN WHITE PINE	--	--	--	--
FIR-SPRUCE:				
GRAND FIR	98	--	--	98
NOBLE FIR	--	--	--	--
PACIFIC SILVER FIR	--	--	--	--
SUBALPINE FIR	--	--	--	--
ENGELMANN SPRUCE	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--
TOTAL	98	--	--	98
HEMLOCK-SITKA SPRUCE:				
WESTERN HEMLOCK	723	3,275	569	4,567
WESTERN HEMLOCK/RED ALDER	--	336	--	336
SITKA SPRUCE	--	--	--	--
TOTAL	723	3.610	569	4,902
LODGEPOLE PINE	--	--	--	--
OTHER SOFTWOOD TYPES:				
WESTERN REDCEDAR	--	--	--	--
WESTERN REDCEDAR/RED ALDER	--	--	--	--
TOTAL	--	--	--	--
All SOFTWOOD TYPES	6,308	8,386	1,891	16,584
WESTERN HARDWOOD TYPES:				
RED ALDER	1,338	1,561	1,317	4,216
RED ALDER/CONIFER	--	807	151	958
BIGLEAF MAPLE	--	--	567	567
BIGLEAF MAPLE/CONIFER	--	458	529	987
BLACK COTTONWOOD	--	549	--	549
OREGON WHITE OAK/CONIFER	--	--	--	--
OREGON ASH	--	--	162	162
BITTER CHERRY/CONIFER	--	33	--	33
TOTAL	1,338	3,409	2,726	7,472
NONSTOCKED[e]	--	--	--	--
UNCLASSIFIED~	--	--	--	--
ALL TYPES	7,646	11,794	4,617	24,057

-- = none found or less than 500 cubic feet.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

'Annual average mortality of growing stock by forest type not available for National Forest. (Shown by species in table 28.)

[d] Annual average mortality of growingstock by forest type not available for all owners.

[e] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

[f] Information on volume by unclasslfled forest type unavailable.

TABLE 22--AVERAGE ANNUAL MORTALITY OF SAWTIMBER ON PRIVATE AND OTHER PUBLIC TIMBERLAND BY FOREST TYPE AND OWNER. SOUTHWEST WASHINQTON, 1988[abc]

FOREST TYPE	OWNER			
	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS[d]
	THOUSAND BOARD FEET. SCRIBNER RULE			
DOUGLAS-FIR:				
DOUQLAS-FIR	8.558	6,900	1.960	17,418
DOUGLAS-FIR/RED ALDER	9,783	965	511	11,259
DOUGLAS-FIR/OTHER HARDWOOD	--	462	--	462
TOTAL	18,341	8,327	2,470	29,139
PONDEROSA PINE	--	--	--	--
WESTERN WHITE PINE	--	--	--	--
FIR-SPRUCE:				
GRAND FIR	425	--	--	425
NOBLE FIR	--	--	--	--
PACIFIC SILVER FIR	--	--	--	--
SUBALPINE FIR	--	--	--	--
ENGELMANN SPRUCE	--	--	--	--
MOUNTAIN SPRUCE	--	--	--	--
TOTAL	425	--	--	425
HEMLOCK-SITKA SPRUCE:				
WESTERN HEMLOCK	1.059	6,446	2.271	9,776
WESTERN HEMLOCK/RED ALDER	--	--	--	--
SITKA SPRUCE	--	--	--	--
TOTAL	1,059	6,446	2.271	9,776
LODGEPOLE PINE	--	--	--	--
OTHER SOFTWOOD TYPES:				
WESTERN REDCEDAR	--	--	--	--
WESTERN REDCEDAR/RED ALDER	--	--	--	--
TOTAL	--	--	--	--
ALL SOFTWOOD TYPES	19.826	14,773	4.741	39.340
WESTERN HARDWOOD TYPES:				
RED ALDER	4.827	2,732	2.802	10,361
RED ALDER/CONIFER	--	1,313	--	1.313
BIQLEAF MAPLE	--	--	2.348	2.348
BIQLEAF MAPLE/CONIFER	--	868	1.486	2,354
BLACK COTTONWOOD	--	793	--	793
OREGON WHITE OAK/CONIFER	--	--	--	--
OREGON ASH				
BITTER CHERRY/CONIFER				
TOTAL	4,827	5,706	6.636	17,168
NONSTOCKED[e]	--	--	--	--
UNCLASSIFIED~	--	--	--	--
ALL TYPES	24,653	20.479	11,377	56.508

-- = none found or less than 500 board feet

[a]Totals may be off because of rounding.

[b]Subject to sampling error.

'Average annual mortality of sawtiamber by forest type not available for National Forest. (Shown by species in table 29.)

[d]Average annual mortality of sawtimber by forest type not available for all owners.

[e]Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcutm scheduled for planting are included.

[f]Information on volume bv unclassified forest tvpe unavailable.

TABLE 23--AREA BY COUNTY AND LAND CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

COUNTY	FOREST LAND					NONFOREST LAND[c]	ALL LAND[d]
	TIMBERLAND	RESERVED TIMBERLAND	OTHER FOREST	RESERVED OTHER FOREST	TOTAL		
	THOUSAND HECTARES						
CLARK	87	1	2	--	90	72	162
COWLITZ	237	6	4	--	246	46	292
LEWIS	460	38	10	10	518	109	627
PACIFIC	208	1	4	--	213	25	238
SKAMANIA	327	33	7	8	375	57	432
WAHKIAKUM	57	--	1	--	58	10	68
OTHER COUNTIES~	13	2	1	2	17	6	23
ALL COUNTIES	1,389	80	29	20	1,517	325	1,842

-- = none found or less than 500 hectares.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Includes cropland, pasture and range, swampland, industrial and urban areas, powerline clearings, railroads, and all improved roads and highways; and water as classified by Forest Inventory and Analysis standards but defined by the Bureau of the Census as land.

[d] Source: United States Department of Commerce 1983.

[e] Includes Gifford Pinchot National Forest land in Klickitat, Yakima, Pierce, and Thurston Counties.

TABLE 24--AREA OF RESERVED TIMBERLAND AND OTHER FOREST LAND BY LAND CLASS, FOREST TYPE, AND OWNER, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

LAND CLASS AND FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	THOUSAND ACRES				
RESERVED TIMBERLAND:					
DOUGLAS-FIR	48	20	--	--	68
WESTERN WHITE PINE	1	3	--	--	4
FIR-SPRUCE	57	6	--	--	63
HEMLOCK-SITKA SPRUCE	14	2	--	--	16
LODGEPOLE PINE	2	--	--	--	2
WESTERN HARDFOOD TYPES	1	--	--	--	1
UNCLASSIFIED	41	--	--	--	41
TOTAL	164	31	--	--	197
RESERVED OTHER FOREST:					
FIR-SPRUCE	3	--	--	--	3
WESTERN HARDFOOD TYPES	--	13	--	--	13
UNCLASSIFIED	34	--	--	--	34
TOTAL	37	13	--	--	50
ALL RESERVED	201	44	--	--	245
UNRESERVED OTHER FOREST:					
DOUGLAS-FIR	--	11	--	--	11
FIR-SPRUCE	1	--	--	--	1
HEMLOCK-SITKA SPRUCE	--	--	12	6	18
WESTERN HARDWOOD TYPES	--	7	15	--	22
UNCLASSIFIED~	20	--	--	--	20
ALL UNRESERVED	21	18	27	6	72

-- = none found or less than 500 acres.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Information on forest type unavailable.

TABLE 25--AREA OF TIMBERLAND BY OWNER AND STAND-SIZE CLASS, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a] [b]

OWNER	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING-SAPLING	NONSTOCKED[c]	ALL CLASSES
	THOUSAND HECTARES				
NATIONAL FOREST	262	29	56	33	380
OTHER PUBLIC	129	20	27	--	176
FOREST INDUSTRY	282	85	235	22	624
OTHER PRIVATE	125	33	43	8	208
ALL OWNERS	798	167	361	62	1,389

-- = none found or less than 500 hectares.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 26--AREA, NET VOLUME OF GROWING STOCK[a], AND NET VOLUME OF SAWTIMBER[b] ON TIMBERLAND BY STAND AGE AND OWNER. SOUTHWEST WASHINGTON, JANUARY 1, 1989[c d]

STAND AGE	NATIONAL FOREST			OTHER PUBLIC			FOREST INDUSTRY		
	AREA	GROWING-STOCK VOLUME	SAWTIMBER VOLUME SCRIBNER RULE	AREA	GROWING-STOCK VOLUME	SAWTIMBER VOLUME SCRIBNER RULE	AREA	GROWING-STOCK VOLUME	SAWTIMBER VOLUME SCRIBNER RULE
	THOUSAND ACRES	THOUSAND CUBIC FEET	THOUSAND BOARD FEET	THOUSAND ACRES	THOUSAND CUBIC FEET	THOUSAND BOARD FEET	THOUSAND ACRES	THOUSAND CUBIC FEET	THOUSAND BOARD FEET
EVEN-AGED:									
0-9	--	--	--	18	--	--	226	7,699	29,767
10-19	3	--	--	39	7,476	--	337	53,046	28,808
20-29	--	--	--	34	42,794	69,822	171	387,352	801,692
30-39	18	--	--	50	221,567	637,628	166	805,477	2,380,890
40-49	21	--	--	87	503,800	1,933,068	132	1,031,781	3,785,450
50-59	45	349,991	--	52	379,238	1,625,654	86	731,947	3,288,958
60-69	45	344,583	1,848,617	15	127,948	546,238	51	495,380	2,144,011
70-79	37	288,955	1,550,186	11	110,026	510,691	8	91,365	426,106
80-89	40	309,816	1,662,098	14	129,726	647,570	8	136,285	692,916
90-99	26	203,968	1,094,249	--	--	--	--	--	--
100-109	18	136,751	733,644	--	--	--	8	55,863	279,484
110-119	17	130,571	700,485	--	--	--	--	--	--
120-129	29	221,738	1,189,581	3	43,070	216,034	--	--	--
130-139	11	85,759	460,082	--	--	--	--	--	--
140-149	30	234,100	1,255,899	3	55,338	326,660	--	--	--
150-159	10	74,943	402,054	--	--	--	--	--	--
160-169	4	32,450	174,085	--	--	--	--	--	--
170-179	12	95,031	509,820	--	--	--	--	--	--
180-189	14	105,847	567,849	--	--	--	--	--	--
190-199	30	233,327	1,251,754	--	--	--	--	--	--
200-299	43	333,766	1,790,589	--	--	--	--	--	--
300+	55	426,479	2,287,975	--	--	--	--	--	--
UNEVEN-AGED:									
<100	44	343,038	1,840,328	22	198,616	794,355	35	198,921	809,355
100+	241	1,861,212	9,985,020	14	86,098	408,809	28	220,665	1,066,411
NO MANAGEABLE STAND[e]	--	--	--	75	301,538	1,122,289	285	727,315	2,679,469
UNCLASSIFIED[f]	145	--	--	--	--	--	--	--	--
ALL AGES	939	5,812,326	29,304,320	436	2,207,235	8,838,818	1,541	4,943,094	18,413,319

TABLE 26--(CONTINUED)

STAND AGE	OTHER PRIVATE AREA	OTHER PRIVATE GROWING-STOCK VOLUME	OTHER PRIVATE SAWTIMBER VOLUME SCRIBNER RULE	ALL OWNERSHIPS AREA	ALL OWNERSHIPS GROWING-STOCK VOLUME	ALL OWNERSHIPS SAWTIMBER VOLUME SCRIBNER RULE
	THOUSAND ACRES	THOUSAND CUBIC FEET	THOUSAND BOARD FEET	THOUSAND ACRES	THOUSAND CUBIC FEET	THOUSAND BOARD FEET
EVEN-AGED:						
0-9	35	--	--	278	7,699	29,767
10-19	42	13,364	15,693	421	73,a85	44,501
20-29	--	--	--	205	430,146	871,515
30-39	22	81,596	239,926	256	1,108,640	3,258,444
40-49	32	146,785	585,121	273	1,682,366	6,303,638
50-59	34	234,145	1,015,758	216	1,695,321	5,930,370
60-69	19	145,710	706,534	131	1,113,620	5,245,400
70-79	13	99,104	511,691	69	589,450	2,998,674
80-89	8	43,733	224,153	69	619,561	3,226,737
90-99	--	--	--	26	203,968	1,094,249
100-109	--	--	--	26	192,614	1,013,128
110-119	--	--	--	17	130,571	700,485
120-129	--	--	--	32	264,808	1,405,616
130-139	--	--	--	11	85,759	460,082
140-149	--	--	--	33	289,438	1,582,559
150-159	--	--	--	10	74,943	402,054
160-169	--	--	--	4	32,450	174,085
170-179	--	--	--	12	95,031	509,820
180-189	--	--	--	14	105,847	567,849
190-199	--	--	--	30	233,327	1,251,754
200-299	--	--	--	43	333,766	1,790,589
300+	--	--	--	55	426,479	2,287,975
UNEVEN-AGED:						
<100	34	171,251	666,968	136	911,826	4,111,007
100+	--	--	--	282	2,167,975	11,460.239
NO MANAGEABLE STAND[e]	274	699,070	2,609,650	634	1,727,923	6,411,408
UNCLASSIFIED~	--	--	--	145	--	--
ALL AGES	514	1,634.759	6,575,494	3,431	14,597,414	63,131,951

-- = none found or less than 500 acres. 500 cubic feet, or 500 board feet.

[a] Includes trees 5 Inches In d.b.h. and larger.

[b] Includes conifer trees 9 Inches In d.b.h. and larger and hardwood trees 11 inches in d.b.h. and larger.

'Totals may be off because of rounding.

[d] Subject to sampllng error.

[e] Lacks 25 percent conifer stocking on 3/5ths of sample points.

[f] Stand age unavailable for National Forest.

TABLE 27--NET VOLUME OF GROWING STOCK AND SAWTIMBER ON TIMBERLAND BY COUNTY AND OWNER, SOUTHWEST WASHINGTON, JANUARY 1, 1989[a b]

COUNTY	OWNER: NATIONAL FOREST	OTHER PUBLIC	PRIVATE	ALL OWNERS
		MILLION CUBIC FEET		
GROWING STOCK:				
CLARK	7	301	562	870
COWLITZ	52	269	1,431	1,752
LEWIS	1,784	651	2,409	4,844
PACIFIC	--	347	1,472	1,819
SKAMANIA	3,780	418	355	4,553
WAHKIAKUM	--	222	351	573
OTHER COUNTIES~	190	--	--	190
ALL COUNTIES	5,812	2,207	6,578	14,597
		MILLION BOARD FEET. SCRIBNER RULE		
SAWTIMBER:				
CLARK	34	1,213	2,211	3,458
COWLITZ	262	1,053	5,358	6,673
LEWIS	8,995	2,645	9,262	20,902
PACIFIC	--	1,332	5,451	6,783
SKAMANIA	19,058	1,709	1,349	22,116
WAHKIAKUM	--	886	1,358	2,245
OTHER COUNTIES~	955	--	--	955
ALL COUNTIES	29,304	8,839	24,988	63,132
		MILLION CUBIC METERS		
GROWING STOCK:				
CLARK	--	9	16	25
COWLITZ	1	8	40	50
LEWIS	51	18	69	137
PACIFIC	--	10	41	52
SKAMANIA	107	12	10	129
WAHKIAKUM	--	6	10	16
OTHER COUNTIES'	5	--	--	5
ALL COUNTIES	165	63	186	413

-- - none found or less than 500,000 cubic feet, 500,000 cubic meters or 500,000 board feet.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Includes Gifford Pinchot National Forest land in Klickitat, Yakima, Pierce and Thurston Counties.

TABLE 28--CURRENT NET ANNUAL GROWTH, AVERAGE ANNUAL MORTALITY, AND AVERAGE ANNUAL REMOVALS OF GROWING STOCK ON TIMBERLAND BY SPECIES AND OWNER, SOUTHWEST WASHINGTON, 1988[a b]

SPECIES	NATIONAL FOREST'		OTHER PUBLIC			FOREST INDUSTRY		
	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	AVERAGE ANNUAL REMOVALS	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	AVERAGE ANNUAL REMOVALS
	THOUSAND CUBIC FEET							
SOFTWOODS:								
DOUGLAS-FIR	33,951	4,729	51,430	3,971	5,881	115,235	3,981	126,966
WESTERN HEMLOCK	8,751	769	20,587	256	5,519	93,026	3,909	95,953
PACIFIC SILVER FIR	7,497	1,254	771	--	--	2,710	543	5,737
WESTERN REDCEDAR	2,380	97	1,213	98	--	3,515	96	8,264
NOBLE FIR	755	72	183	--	--	1,093	--	3,258
MOUNTAIN HEMLOCK	621	70	--	--	--	--	--	9.010
GRAND FIR	1,412	89	590	--	--	2,425	--	375
SITKA SPRUCE	--	--	115	77	--	4,025	343	5,261
SUBALPINE FIR	381	77	--	--	--	--	--	--
WESTERN WHITE PINE	65	343	--				--	--
LODGEPOLE PINE	186	99	--				--	--
PONDEROSA PINE	61	209	--	--	--	--	--	--
ENGELMANN SPRUCE	471	465	--	--	--	--	--	--
WESTERN LARCH	14	--	--				--	--
ALASKA-CEDAR	81	51	--				--	--
TOTAL SOFTWOODS	56,624	8,324	74,889	4,402	11,399	222,029	8,872	254,823
HARDWOODS:								
RED ALDER	410	2	8,828	2,781	2,284	23,314	2,196	39,553
BIGLEAF MAPLE	272	7	1,505	287	156	2,296	345	5,622
BITTER CHERRY	--	--	-55	176	147	554	93	988
BLACK COTTONWOOD	--	69	66	--	--	1,988	137	329
OREGON ASH	--	--	--	--	--	148	152	--
OREGON WHITE OAK	--	--	--	--	--	--	--	--
TOTAL HARDWOODS	682	78	10,344	3,244	2,588	28,300	2,923	46,493
ALL SPECIES	57,305	8,402	85,234	7,646	13,987	250,330	11,794	301,316

TABLE 28--(CONTINUED)

SPECIES	OTHER PRIVATE: CURRENT NET ANNUAL GROWTH	OTHER PRIVATE: AVERAGE ANNUAL MORTALITY	OTHER PRIVATE: AVERAGE ANNUAL REMOVALS	ALL OWNERSHIPS[d]: CURRENT NET ANNUAL GROWTH	ALL OWNERSHIPS[d]: AVERAGE ANNUAL MORTALITY
	THOUSAND CUBIC FEET[a]				
SOFTWOODS:					
DOUGLAS-FIR	31,577	1,129	14,468	232,193	13,810
WESTERN HEMLOCK	5,480	585	10,988	127,843	5,520
PACIFIC SILVER FIR	787	--	--	11,765	1,797
WESTERN REDCEDAR	2,680	165	1,807	9,789	455
NOBLE FIR	--	--	--	2,030	72
MOUNTAIN HEMLOCK	--	--	--	621	70
GRAND FIR	1,442	--	491	5,869	89
SITKA SPRUCE	-166	166	696	3,975	586
SUBALPINE FIR	--	--	--	381	77
WESTERN WHITE PINE	--	--	--	65	343
LODGEPOLE PINE	58	--	--	244	99
PONDEROSA PINE	--	--	--	61	209
ENGELMANN SPRUCE	--	--	--	471	465
WESTERN LARCH	--	--	--	14	--
ALASKA-CEDAR	--	--	--	81	51
TOTAL SOFTWOODS	41,858	2,045	28,450	395,402	23,643
HARDWOODS:					
RED ALDER	13,667	1,470	11,839	46,219	6,449
BIGLEAF MAPLE	6,735	576	2,656	10,807	1,216
BITTER CHERRY	-91	212	501	409	480
BLACK COTTONWOOD	510	--	--	2,564	206
OREGON ASH	1,453	313	--	1,601	465
OREGON WHITE OAK	155	--	--	155	--
TOTAL HARDWOODS	22,429	2,572	14,995	61,755	8,816
ALL SPECIES	64,286	4,617	43,445	457,157	32,459

-- - none found or less than 500 cubic feet.

[a] Totals may be off because of rounding.

[b] Subject to sampling error.

[c] Removals not available for National Forest.

[d] Removals not available for all ownerships.

[e] Negative net annual growth is the result of annual mortality exceeding gross annual growth.

TABLE 29--CURRENT NET ANNUAL GROWTH, AVERAGE ANNUAL MORTALITY, AND AVERAGE ANNUAL REMOVALS OF SAWTIMBER ON TIMBERLAND BY SPECIES AND OWNER, SOUTHWEST WASHINGTON, 1988[a b]

SPECLES	NATIONAL FOREST'		OTHER PUBLIC			FOREST INDUSTRY		
	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	AVERAGE ANNUAL REMOVALS	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	AVERAGE ANNUAL REMOVALS
	THOUSAND BOARD FEET, SCRIBNER RULE[e]							
SOFTWOODS:								
DOUGLAS-FIR	178,073	19,122	277,114	11,924	25,258	524,712	6,958	617,657
WESTERN HEMLOCK	43,759	5,903	93,024	--	21,470	401,581	7,218	456,439
PACIFIC SILVER FIR	35,723	6,419	1,538	--	--	15,413	1,061	27,978
WESTERN REDCEDAR	9,976	403	4,953	425	--	12,796	--	31,695
NOBLE FIR	3,427	437	1,101	--	--	2,687	--	17,796
MOUNTAIN HEMLOCK	2,800	204	--	--	--	--	--	53,841
GRAND FIR	6,797	394	1,989	--	--	7,818	--	1,576
SITKA SPRUCE	--	--	635	--	--	18,415	1,405	25,418
SUBALPINE FIR	I,162	259	--	--	--	--	--	--
WESTERN WHITE PINE	171	1,570		--	--	--	--	--
LODGEPOLE PINE	753	147	--	--	--	--	--	--
PONDEROSA PINE	356	1,036	--	--	--	--	--	--
ENGELMANN SPRUCE	2,315	2,441					--	--
WESTERN LARCH	76	--					--	--
ALASKA-CEDAR	291	67	--	--	--	--	--	--
TOTAL SOFTWOODS	285,679	38,401	380,354	12,349	46,728	983,422	16,643	1,232,400
HARDWOODS:								
RED ALDER	1,145	--	53,175	10,638	5,903	96,926	2,157	144,377
BIGLEAF MAPLE	546	--	5,125	1,042	854	15,493	887	15,663
BITTER CHERRY	--	--	-623	623	--	178	--	424
BLACK COTTONWOOD	--	376	--	--	--	12,781	--	2,033
OREGON ASH	--	--	--	--	--	189	793	--
OREGON WHITE OAK	--	--	--	--	--	--	--	--
TOTAL HARDWOODS	1,691	376	57,677	12,304	6,757	125,567	3,836	162.497
ALL SPECIES	287,370	38,777	438,030	24,653	53,485	1,108,989	20,479	1,394,897

TABLE 29--(CONTINUED)

SPECIES	OTHER PRIVATE			ALL OWNERSHIPS[d]	
	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	AVERAGE ANNUAL REMOVALS	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY
	THOUSAND BOARD FEET, SCRIBNER RULE[e]				
SOFTWOODS:					
DOUGLAS-FIR	163,346	2,942	66,780	1,143,245	40,946
WESTERN HEMLOCK	30,860	2,020	46,232	569,224	15,141
PACIFIC SILVER FIR	4,216	--	--	56,891	7,480
WESTERN REDCEDAR	12,109	538	6,672	39,033	1,366
NOBLE FIR	--	--	--	7,215	437
MOUNTAIN HEMLOCK	--	--	--	2,800	204
GRAND FIR	7,991	--	2,042	24,594	394
SITKA SPRUCE	-754	754	2,792	18,296	2,159
SUBALPINE FIR	--	--	--	1,162	259
WESTERN WHITE PINE	--	--	--	171	1,570
LODGEPOLE PINE	231	--	--	984	147
PONDEROSA PINE	--	--	--	356	1,036
ENGELMANN SPRUCE	--	--	--	2,315	2,441
WESTERN LARCH	--	--	--	76	--
ALASKA-CEDAR	--	--	--	291	67
TOTAL SOFTWOODS	217,999	6,254	124,518	1,867,452	73,646
HARDWOODS:					
RED ALDER	53,045	2,665	24,146	204,290	15,460
BIGLEAF MAPLE	34,944	2,458	11,202	56,108	4,387
BITTER CHERRY	--	--	1,933	-445	623
BLACK COTTONWOOD	3,358	--	--	16,139	376
OREGON ASH	4,537	--	--	4,726	793
OREGON WHITE OAK	70	--	--	70	--
TOTAL HARDWOODS	95,954	5,123	37,282	280,888	21,639
ALL SPECIES	313,951	11,377	161,799	2,148,340	95,285

-- = none found or less than 500 cubic feet.

[a]Totals may be off because of rounding.

[b]Subject to sampling error.

[c]Removals not available for National Forest.

[d]Removals not available for all ownerships.

[e]Negative net annual growth is the result of annual mortality exceeding gross annual growth.

TABLE 30--CHANGES IN TIMBERLAND AREA ON PRIVATE AND OTHER PUBLIC TIMBERLAND, BY OWNER, SOUTHWEST WASHINGTON, 1978-88[a]

DESCRIPTION	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
		THOUSAND ACRES[b]		
TIMBERLAND AREA IN 1978	434	1,633	508	2,577
GAINS AND LOSSES IN TIMBERLAND AREA (1978-88):				
A. CHANGES IN LAND USE--				
TIMBERLAND TO RIGHTS-OF-WAY	--	-34	--	-34
TIMBERLAND TO AGRICULTURE	--	--	-5	-5
NET LAND USE CHANGES	--	-34	-5	-39
B. CHANGES IN INVENTORY AREA--				
TO NATIONAL FOREST (LOSSES)	--	-64	--	-64
FROM NATIONAL FOREST (GAINS)	3	15	--	18
NET AREA CHANGES	3	-49	--	-46
C. CHANGES IN OWNERSHIP--				
FROM OTHER PUBLIC	-67	67	--	--
FROM FOREST INDUSTRY	66	-98	32	--
FROM OTHER PRIVATE	--	22	-22	--
NET OWNERSHIP CHANGES	-1	-9	lo	--
TIMBERLAND AREA IN 1988	436	1,541	514	2,492

-- = none found or less than 500 acres.

[a]Subject to sampling error and totals may be off because of rounding.

[b]Negative values are losses of timberland and positive values are gains of timberland. **Losses** are shown by the 1978 owner and gains are shown by the 1988 owner.

TABLE 31--CHANGES IN VOLUME OF GROWING STOCK ON PRIVATE AND OTHER PUBLIC TIMBERLAND, BY OWNER, SOUTHWEST WASHINGTON 1978-88[a]

DESCRIPTION	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
		MILLION CUBIC FEET[b]		
SOFTWOODS:				
TOTAL VOLUME IN 1978	1.382	4.577	781	6,740
VOLUME CHANGES BECAUSE OF:				
A. CHANGES IN LAND CLASS--				
TIMBERLAND TO NONFOREST	--	-189	-12	,201
B. CHANGES IN INVENTORY AREA--				
TO NATIONAL FOREST	--	-51	--	-51
FROM NATIONAL FOREST	27	33	--	60
NET CHANGE	27	-19	--	8
C. CHANGES IN OWNERSHIP--				
FROM OTHER PUBLIC	-257	257	--	--
FROM FOREST INDUSTRY	156	-260	104	--
FROM OTHER PRIVATE	--	24	-24	--
NET CHANGE	-101	21	80	--
D. GROWTH, MORTALITY AND HARVEST				
PERIODIC GROSS GROWTH	720	2,240	476	3,436
PERIODIC MORTALITY	-44	-89	-20	-153
PERIODIC REMOVALS	-114	-2,418	-285	-2,817
NET CHANGE	562	-267	171	466
TOTAL VOLUME IN 1988	1,870	4,123	1,020	7,012
HARDWOODS:				
TOTAL VOLUME IN 1978	318	950	519	1,787
VOLUME CHANGES BECAUSE OF:				
A. CHANGES IN LAND CLASS--				
TIMBERLAND TO NONFOREST	--	-21	--	-21
B. CHANGES IN INVENTORY AREA--				
TO NATIONAL FOREST	--	-22	--	-22
C. CHANGES IN OWNERSHIP--				
FROM OTHER PUBLIC	-77	77	--	--
FROM FOREST INDUSTRY	27	-62	35	--
FROM OTHER PRIVATE	--	17	-17	--
NET CHANGE	-51	33	18	--
D. GROWTH, MORTALITY AND HARVEST--				
PERIODIC GROSS GROWTH	128	365	254	747
PERIODIC MORTALITY	-32	-29	-26	-87
PERIODIC REMOVALS	-26	-456	-150	-632
NET CHANGE	70	-120	78	28
TOTAL VOLUME IN 1988	337	820	615	1,773

-- - none found or less than 500,000 cubic feet.

[a] Subject to sampling error and totals may be off because of rounding.

[b] Negative values are losses of volume and positive values are gains of volume. Losses are shown by the 1978 owner and gains are shown by the 1988 owner.

TABLE 32--CHANGES IN VOLUME OF SAWTIMBER ON PRIVATE AND OTHER PUBLIC TIMBERLAND, BY OWNER, SOUTHWEST WASHINGTON 1978-88[a]

DESCRIPTION	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	MILLION BOARD FEET, SCRIBNER[b]			
SOFTWOODS:				
TOTAL VOLUME IN 1978	5,248	18,458	3,066	26,773
VOLUME CHANGES BECAUSE OF:				
A. CHANGES IN LAND CLASS				
TIMBERLAND TO NONFOREST	--	-819	-42	-861
B. CHANGES IN INVENTORY AREA--				
TO NATIONAL FOREST	--	-174	--	-174
FROM NATIONAL FOREST	118	137	--	255
NET CHANGE	118	-37	--	81
C. CHANGES IN OWNERSHIP--				
FROM OTHER PUBLIC	-941	941	--	--
FROM FOREST INDUSTRY	478	-903	425	--
FROM OTHER PRIVATE	--	97	-97	--
NET CHANGE	-462	134	328	--
D. GROWTH, MORTALITY, AND HARVEST--				
PERIODIC GROSS GROWTH	3,330	9,773	2,361	15,464
PERIODIC MORTALITY	-123	-166	-63	-352
PERIODIC REMOVALS	-467	-11,681	-1,245	-13,393
NET CHANGE	2,740	-2,074	1,053	1,719
TOTAL VOLUME IN 1988	7,644	15,662	4,405	27,712
HARDWOODS:				
TOTAL VOLUME IN 1978	921	2,910	1,463	5,294
VOLUME CHANGES BECAUSE OF:				
A. CHANGES IN LAND CLASS				
TIMBERLAND TO NONFOREST	--	-73	--	-73
B. CHANGES IN INVENTORY AREA				
TO NATIONAL FOREST	--	-72	--	-72
C. CHANGES IN OWNERSHIP--				
FROM OTHER PUBLIC	-170	170	--	--
FROM FOREST INDUSTRY	109	245	136	--
FROM OTHER PRIVATE	--	45	-45	--
NET CHANGE	-61	-30	91	--
D. GROWTH, MORTALITY, AND HARVEST--				
PERIODIC GROSS GROWTH	525	1,647	1,041	3,213
PERIODIC MORTALITY	-123	-38	-51	-213
PERIODIC REMOVALS	-68	-1,593	-373	-2,034
NET CHANGE	334	16	617	966
TOTAL VOLUME IN 1988	1,195	2,751	2,170	6,116

-- = none found or less than 500,000 board feet.

[a] Subject to sampling error and totals may be off because of rounding.

[b] Negative values are losses of volume and positive values are gains of volume. Losses are shown by the 1978 owner and gains are shown by the 1988 owner.

TABLE 33--TIMBER HARVEST BY OWNER, SOUTHWEST WASHINGTON, 1955-88

YEAR	OWNER			
	NATIONAL FOREST	OTHER PUBLIC	PRIVATE	ALL OWNERS
	MILLION BOARD FEET, SCRIBNER RULE			
1955	237,367	144,456	1,315,483	1,697,306
1956	252,900	199,265	1,468,636	1,920,801
1957	184,621	225,571	1,053,056	1,463,248
1958	274,716	191,288	977,546	1,443,550
1959	447,581	105,760	1,115,801	1,669,142
1960	384,520	103,964	1,112,804	1,601,288
1961	393,870	131,688	1,081,660	1,607,218
1962	480,600	100,001	1,368,463	1,949,064
1963	464,200	186,926	1,325,216	1,976,342
1964	467,600	240,910	1,588,929	2,297,439
1965	523,700	264,473	1,781,444	2,569,617
1966	525,685	189,673	1,588,839	2,304,197
1967	526,500	110,401	1,504,798	2,141,699
1968	647,672	176,208	1,911,927	2,735,807
1969	530,597	203,260	1,727,551	2,461,408
1970	476,359	142,507	1,870,674	2,489,540
1971	358,356	156,003	1,933,007	2,447,366
1972	403,064	243,832	1,850,745	2,497,641
1973	496,891	269,065	2,059,011	2,824,967
1974	391,596	111,817	1,826,730	2,330,143
1975	347,292	75,912	1,914,226	2,337,430
1976	320,892	145,038	2,149,989	2,615,919
1977	299,010	161,310	1,988,193	2,448,513
1978	363,334	185,554	1,967,116	2,516,004
1979	402,397	174,938	1,883,610	2,460,945
1980	278,183	82,084	1,678,648	2,038,915
1981	244,722	103,985	1,645,530	1,994,237
1982	276,292	123,388	1,624,230	2,023,910
1983	335,692	99,292	1,536,484	1,971,468
1984	357,895	147,106	1,325,598	1,830,599
1985	329,356	158,868	1,132,580	1,620,804
1986	337,607	241,941	1,368,991	1,948,539
1987	428,571	188,064	1,431,898	2,048,533
1988	535,615	203,908	1,458,061	2,197,584

Source: **(State of Washington** 1955-88).

Acknowledgments

This inventory was completed with the cooperation and assistance of many. The Washington Department of Natural Resources provided ownership maps, aerial photography, and training for disease and insect identification. County assessors provided ownership information. Ecologists of the National Forest System trained crews in plant identification and ecosystem classification. Timber companies and many individuals allowed access to their forest lands. The Gifford Pinchot National Forest provided summarized forest resource inventory data for the Forest.

We thank Dale Baer, Perry Colclasure, Glenda Goodwyne, Jim Harrow, Jim Hildreth, Joanne Hildreth, Bruce Hiserote, Mark Hollaender, Florence Jentzsch, J.D. Lloyd, and Bob McMahon for data collection. For compilation of statistics, we also thank Barbara Beil, Tom Farrenkopf, Susan Ferneau, Mary Mei, Mary Ellen Pearce, Carolyn Pottorff, Clara Yung, and Richard Zimmerman.

Metric Equivalents

1,000 acres = **404.7** hectares
1,000 cubic feet = **28.3** cubic meters
1 cubic foot per acre = **0.07** cubic meter per hectare
1 foot = **0.3048** meter
1 inch = **2.54** centimeters
1 mile = 1.609 kilometers

Literature Cited

Bassett, Patricia M.; Oswald, Daniel D. 1981. Timber resource statistics for southwest Washington. Resour. Bull. PNW-91. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. **24** p.

Cochran, W.G. 1977. Sampling techniques. 3d ed. New York: John Wiley & Sons. **413** p.

Hazard, John W. 1965. Timber resource statistics for southwest Washington. Resour. Bull. PNW-15. Portland, OR: U.S. Department of Agariculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. **32** p.

Little, Elbert L., Ja. 1979. Checklist of United States trees (native and naturalized). Agric. Handb. **541.** Washington, DC: U.S. Department of Agriculture. **375** p.

MacLean, Colin D. 1980. A technique for identifying treatment opportunities from western Oregon and Washington forest survey plots. Gen. Tech Rep. PNW-102. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station. 16 p.

State of washington, Department of Natural Resources. 1955-88. Timber harvest report. Olympia, WA. Annual.

U.S. Department of Commerce. 1983. 1980 census of population. Volume 1: Characterestics of the population. Part 1: United States summary. Washington DC.

Wiley, Kenneth N. 1978. Site index tables for western hemlock in the Pacific Northwest. Weyerhaeuser Forestry Pap. **17.** Centralia, WA: Weyerhaeuser Company, Western Forestry Research Center. **26** p.

MacLean, Colin D.; Ohmann, Janet L.; Bassett, Patricia M. 1991. Preliminary timber resource statistics for southwest Washington. Resour. Bull. PNW-RB-177. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 46 p.

This report summarizes a 1988 timber inventory of six counties in southwest Washington: Clark, Cowlitz, Lewis, Pacific, Skamania, and Wahkiakum. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

Keywords: Forest surveys, forest inventory, statistics (forest), timber resources, resources (forest), southwest Washington, Washington (southwest).

Pacific Northwest Research Station
319 S.W. Pine St.
P.O. **Box** 3890
Portland, Oregon 97208-3890

U.S. Department of Agriculture
Pacific Northwest Research Station
319 S.W. Pine Street
P.O. Box 3890
Portland, Oregon 97208

Official Business
Penalty for Private Use, $300

BULK RATE
POSTAGE +
FEES PAID
USDA-FS
PERMIT No G-40

do NOT detach label