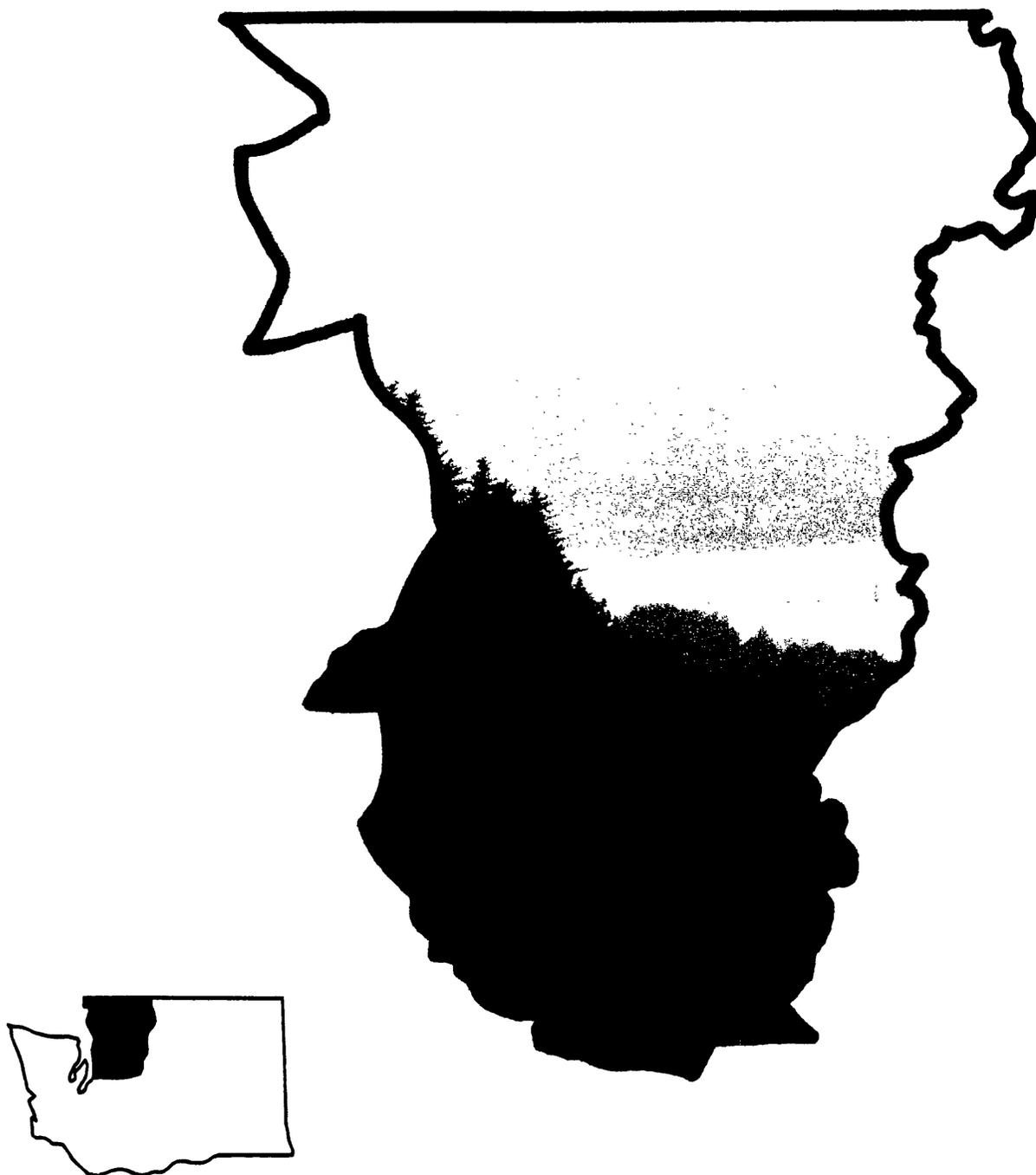




# Preliminary Timber Resource Statistics for the Puget Sound Area, Washington

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



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## Abstract

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This report summarizes a 1989 timber resource inventory of eight counties in the Puget Sound region of Washington: Island, King, Kitsap, Pierce, Skagit, San Juan, Snohomish, and Whatcom. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

Keywords: Forest surveys, forest inventory, statistics (forest), timber resources, resources (forest), Puget Sound region, Washington (Puget Sound region).

## Summary

The Puget Sound area of western Washington (Island, King, Kitsap, Pierce, Skagit, San Juan, Snohomish, and Whatcom Counties) totals 6,726,000 acres, of which an estimated 4,314,000 acres are forested and an estimated 3,224,000 acres are classified as timberland. The area has 14.2 billion cubic feet of standing timber with 54 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.

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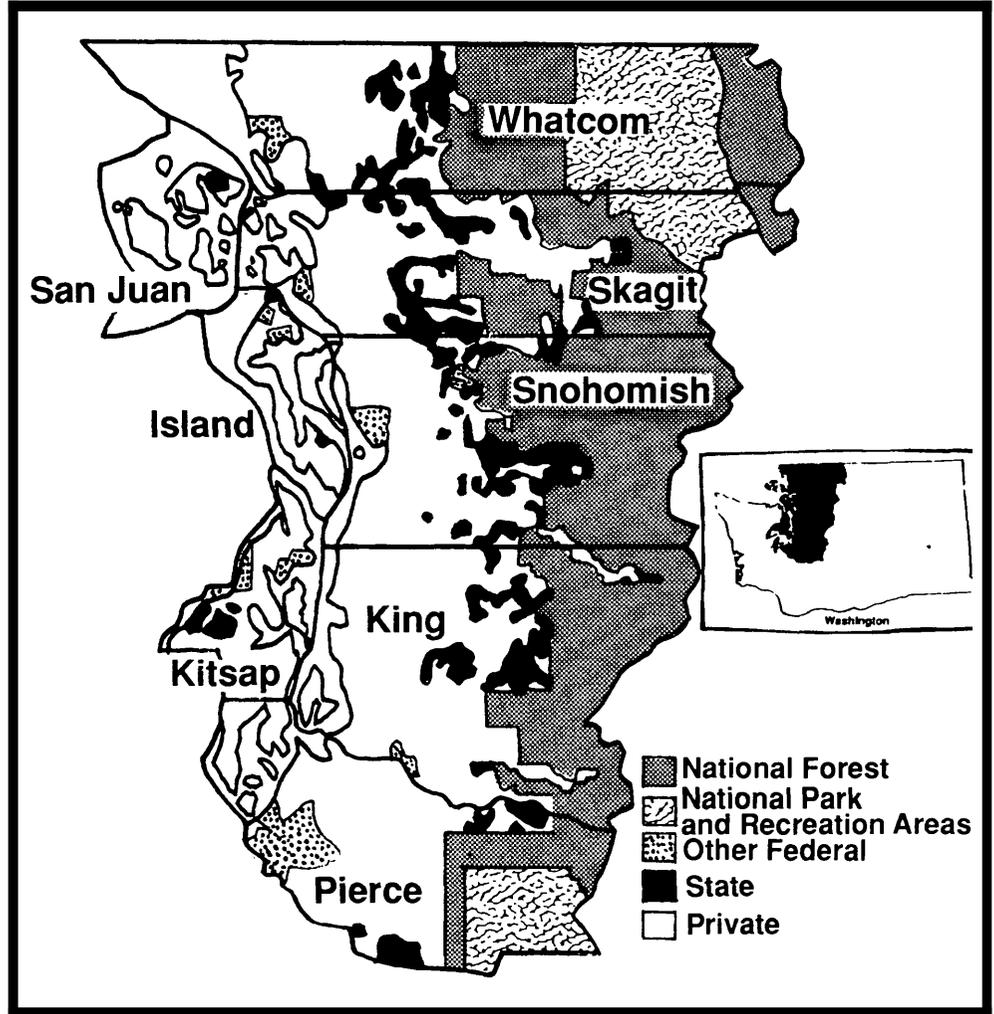
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## Introduction

This report presents statistics from the latest inventory of the timber resources of eight counties (Island, King, Kitsap, Pierce, Skagit, San Juan, Snohomish, and Whatcom Counties) in the Puget Sound area of Washington. The Puget Sound area was first inventoried in 1931-33; subsequent inventories were taken in 1938-41 (King, Kitsap, and Pierce Counties only), 1955-60, 1966-1967, and again in 1979.

Field data for all private land and all public land except for National Forests were collected in summer 1989 by the Forest Inventory and Analysis Work Unit (FIA) of the Pacific Northwest Research Station. Inventory data for National Forest land were collected in 1976 by personnel of the Mount Baker-Snoqualmie National Forest.

The statistical tables presented in this report differ in format from those in earlier inventory reports (Bassett and Oswald 1982, Bolsinger 1971). The western core tables (tables 1-22) are standard tables designed to provide consistent resource data for all Western States and will now 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 (1982) have been updated to January 1, 1990, and appear in this report.<sup>1</sup>

Scientific names of trees (Little 1979) are given on page 8 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 8,650 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 550 field plots that subsampled the primary grid at about every 16th photo point. During the 1966-67 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 1979, these 10-point plots were replaced with 5-point plots that sampled about 8 acres (MacLean 1980). In 1989, the 5-point plots were remeasured and the data combined with new classifications on the 8,650 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.

### Mount Baker-Snoqualmie National Forest

The area of timberland, other forest land, reserved forest land and nonforest land on the Mount Baker-Snoqualmie National Forest was determined from maps prepared from aerial photographs. The inventory was restricted to the timberland area where a 1.7-mile grid of 10-point field plot clusters was established. Recent clearcuts and young plantations were excluded from the inventory.

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<sup>1</sup> Electronic version of tables in this report available in Lotus 1-2-3 spreadsheet format. Send computer disk and 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.)

The inventory statistics reported here have been updated to reflect the effects of harvesting activities between 1976 and 1989. Statistics for unsampled areas and for areas harvested since 1976 were based on stand examination records and other ancillary data. 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.

### **Okanogan and Gifford Pinchot National Forests**

National Forest statistics presented in this report are for lands administered by the Mount Baker-Snoqualmie National Forest. About 197,000 acres of National Forest land in Skagit and Whatcom Counties administered by the Okanogan National Forest are included with eastern Washington statistics (Bassett and Oswald 1983). An updated report on eastern Washington is anticipated in 1992. About 10,000 acres in Pierce County that are administered by the Gifford Pinchot National Forest are reported in "Preliminary timber resource statistics for southwest Washington" (MacLean and others, in press).

### **Changes Since the Previous Inventory**

The Mount Baker-Snoqualmie National Forest and adjacent landowners exchanged about 50,000 acres during the past decade, thereby causing changes in the timberland area and volume held by each owner. In addition, new dedicated wilderness created by the passage of the 1984 Wilderness Act, reduced the available timberland area on the Mount Baker-Snoqualmie National Forest by 63,000 acres.

Tables 30 and 31 present information on the changes in area and volume that have occurred outside the Mount Baker-Snoqualmie National Forest since the 1979 inventory. Detailed information on changes on these lands will be presented in a later publication. Information is not available now about changes in timberland area and volume that have taken place within the Mount Baker-Snoqualmie National Forest. Comparisons of statistics from this report with those presented by Bassett and Oswald (1982) 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, 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 1979, 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 it to include all companies holding land for timber production. Native American lands are now classed as "other private" at the request of the owners. These lands were previously shown as in "other public" ownership.

## Reliability of Inventory Data

National Forest area statistics are based on maps and therefore are without sampling error. All other area and volume statistics 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
	<i>Thousand acres</i>	<i>--- Million cubic feet ---</i>	
National Forest	76% 0	4,385±NA	27fNA
Other public	625±16	3,308+182	106+ 6
Forest industry	961+25	3,113+221	143+ 9
Other private	870+34	3,419+220	126+ 8
All owners, other than			
National Forest	2,456+40	9,840±351	374±13
All owners	3,225±40	14,226±NA	401fNA

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 2,456,000 ± 40,000 (2,416,000 to 2,496,000) 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
	<i>Thousand acres</i>	
1,000	f20	k67
800	f18	±60
600	f16	±53
400	±14	k44
200	f11	±33
100	±8	±24
50	±6	f18
25	±5	k13
15	±4	f11
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	f310	f423	200,000	±12,270	±17,100
4,000	f247	f353	100,000	£ 7,944	±11,900
2,000	±166	±260	50,000	£ 5,142	£ 8,400
1,000	±112	±191	25,000	± 3,329	£ 5,800
800	± 99	±171	15,000	£ 2,416	£ 4,500
600	£ 84	f140	10,000	£ 1,874	£ 3,600
400	£ 97	f106	5,000	± 1,213	£ 2,500
200	£ 45	£ 66	1,000	£ 42	£ 1,000
100	£ 30	± 41	500	£ 86	± 500
50	£ 20	£ 25	100	± 100	£ 100
25	f14	£ 16	10	£ 10	£ 10
15	±10	± 11			
10	f 8	£ 8			
5	±5	£ 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 is 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) in growth—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 the Puget Sound area, between 1979 and 1989). 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.

Native American lands—Tribal and allotted lands held in trust by the Federal Government. Native American lands are grouped with farmer and miscellaneous private lands as other private.

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 industrial wood because of adverse site conditions such as sterile soils, dry climate, poor drainage, high elevation, steepness, or rockiness.

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

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

Pole timber 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.

Resewed 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 name	Scientific name
Softwoods:	
Alaska-cedar	<i>Chamaecyparis nootkatensis</i> (D. Don) Spach
Douglas-fir	<i>Pseudotsuga menziesii</i> (Mirb.) Franco
Engelmann spruce	<i>Picea engelmannii</i> Party ex Engelm.
Grand fir	<i>Abies grandis</i> (Dougl. ex D. Don.) Lindl.
Lodgepole pine	<i>Pinus contorta</i> Dougl. ex Loud.
Mountain hemlock	<i>Tsuga mertensiana</i> (Bong.) Carr.
Noble fir	<i>Abies procera</i> Rehd.
Pacific silver fir	<i>Abies amabilis</i> Dougl. ex Forbes
Pacific yew	<i>Taxus brevifolia</i> Nutt.
Sitka spruce	<i>Picea sitchensis</i> (Bong.) Carr.
Subalpine fir	<i>Abies lasiocarpa</i> (Hook.) Nutt.
Western hemlock	<i>Tsuga heterophylla</i> (Raf.) Sarg.
Western redcedar	<i>Thuja plicata</i> Donn ex D. Don
Western white pine	<i>Pinus monticola</i> Dougl. ex D. Don

Common name	Scientific name
Hardwoods:	
Bigleaf maple	<i>Acer macrophyllum</i> Pursh
Bitter cherry	<i>Prunus emarginata</i> Dougl. ex Eaton
Black cottonwood	<i>Populus trichocarpa</i> Torr. & Gray
Oregon ash	<i>Fraxinus latifolia</i> Benth.
Pacific madrone	<i>Arbutus menziesii</i> Pursh
Red alder	<i>Alnus rubra</i> Bong.
Western paper birch	<i>Betula papyrifera</i> var. <i>commutata</i> (Reg.) Fern.

## Tables

TABLE 1--AREA BY COUNTY AND LAND CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

COUNTY	FOREST LAND					TOTAL	NONFOREST LAND <sup>c</sup>	ALL LAND <sup>d</sup>
	TIMBERLAND	RESERVED TIMBERLAND	OTHER FOREST	RESERVED OTHER FOREST				
<u>THOUSAND ACRES</u>								
ISLAND	70	1	1	1	72	63	135	
KING	722	60	36	45	863	490	1,353	
KITSAP	152	1	3	--	156	97	254	
PIERCE	562	110	14	74	760	313	1,072	
SAN JUAN	59	3	--	3	66	48	114	
SKAGIT	592	82	22	56	752	361	1,113	
SNOHOMISH	660	139	56	59	914	435	1,349	
WHATCOM	407	158	21	146	731	604	1,336	
ALL COUNTIES	3,224	554	153	384	4,314	2,411	6,726	

-- = none found or less than 500 acres.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>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.

<sup>d</sup>Source: (U.S. Department of Commerce 1983).

TABLE 2--AREA OF RESERVED TIMBERLAND AND OTHER FOREST LAND BY FOREST TYPE, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

FOREST TYPE	RESERVED TIMBERLAND	OTHER FOREST		TOTAL
		AVAILABLE	RESERVED	
<u>THOUSAND ACRES</u>				
SOFTWOOD TYPES :				
DOUGLAS-FIR	164	16	30	210
FIR-SPRUCE	202	32	61	295
HEMLOCK-SITKA SPRUCE	163	29	58	251
LOGEPOLE PINE	1	--	--	1
OTHER SOFTWOOD TYPES	10	2	4	17
TOTAL	540	80	153	773
HARDWOOD TYPES	13	2	2	17
NONSTOCKED <sup>c</sup>	1	--	--	1
UNCLASSIFIED <sup>d</sup>	--	71	228	299
ALL TYPES	554	153	384	1,091

-- = none found or less than 500 acres.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

<sup>d</sup>Information on forest type unavailable.

TABLE 3--AREA OF TIMBERLAND BY COUNTY AND OWNER, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b c</sup>

COUNTY	PUBLIC						PRIVATE					
	OTHER PUBLIC						OTHER PRIVATE					
	NATIONAL FOREST	BUREAU OF LAND MANAGEMENT	MISCELLANEOUS FEDERAL	STATE	COUNTY AND MUNICIPAL	TOTAL PUBLIC	FOREST INDUSTRY	FARMER	NATIVE AMERICAN	MISCELLANEOUS	TOTAL PRIVATE	ALL OWNERS
THOUSAND ACRES												
ISLAND	--	--	2	7	1	10	3	6	--	51	60	70
KING	114	1	3	61	87	266	293	--	1	163	457	722
KITSAP	--	--	7	20	11	38	25	--	3	86	114	152
PIERCE	94	--	37	35	6	173	242	11	--	137	390	562
SAN JUAN	--	--	1	2	--	3	--	--	--	56	56	59
SKAGIT	172	--	1	129	3	304	189	16	2	82	289	592
SNOHOMISH	248	--	4	114	7	373	132	10	7	139	288	660
WHATCOM	142	--	--	84	2	229	78	13	5	83	179	407
ALL COUNTIES	769	1	55	453	116	1,396	961	56	18	797	1,833	3,225

-- = none found or less than 500 acres.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Timberland acres reported for National Forest land in this and subsequent tables may differ from the area reported in the National Forest Plans as suitable for timber harvest.

TABLE 4--AREA OF TIMBERLAND BY FOREST TYPE AND OWNER, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	<u>THOUSAND ACRES</u>				
DOUGLAS-FIR:					
DOUGLAS-FIR	188	244	271	238	941
DOUGLAS-FIR/RED ALDER	--	51	61	44	156
DOUGLAS-FIR/OTHER HARDWOOD	--	14	31	7	51
TOTAL	188	309	362	289	1,149
FIR-SPRUCE:					
PACIFIC SILVER FIR	239	65	55	7	367
MOUNTAIN HEMLOCK	26	7	17	--	50
NOBLE FIR	--	--	24	--	24
GRAND FIR	--	--	--	15	15
NOBLE FIR/RED ALDER	--	10	--	--	10
SUBALPINE FIR	8	--	--	--	8
TOTAL	273	82	96	23	473
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	261	100	275	6	641
WESTERN HEMLOCK/RED ALDER	--	14	14	--	29
WESTERN HEMLOCK/OTHER HARDWOOD	--	--	7	--	7
TOTAL	261	114	296	6	677
LODGEPOLE PINE	--	--	--	7	7
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	16	7	16	20	59
WESTERN REDCEDAR/OTHER HARDWOOD	--	--	--	14	14
WESTERN REDCEDAR/RED ALDER	--	--	10	--	10
ALASKA-CEDAR	3	--	--	--	3
TOTAL	20	7	26	33	86
ALL SOFTWOOD TYPES	742	512	779	358	2,391
WESTERN HARDWOOD TYPES:					
RED ALDER	7	37	80	246	371
RED ALDER/CONIFER	--	51	52	107	210
BIGLEAF MAPLE	10	--	--	69	79
BLACK COTTONWOOD	--	7	7	31	45
BIGLEAF MAPLE/CONIFER	--	10	21	--	30
WESTERN PAPER BIRCH			7	19	26
PACIFIC MADRONE			--	7	7
OREGON ASH			--	7	7
BITTER CHERRY/CONIFER	--	--	--	7	7
BITTER CHERRY	--	--	--	6	6
TOTAL	18	105	168	498	788
NONSTOCKED <sup>c</sup>	10	7	14	13	45
ALL TYPES	769	625	961	870	3,225

-- = none found or less than 500 acres.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 5--AREA OF TIMBERLAND BY OWNER AND STAND-SIZE CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

OWNER	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING-SAPLING	NONSTOCKED <sup>c</sup>	ALL CLASSES
	<u>THOUSAND ACRES</u>				
NATIONAL FOREST	579	27	153	10	769
OTHER PUBLIC	428	52	138	7	625
FOREST INDUSTRY	396	256	296	14	961
OTHER PRIVATE	584	140	132	13	870
ALL OWNERS	1,986	476	719	45	3,225

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>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, PUGET SOUND AREA, WASHINGTON,  
 JANUARY 1, 1990<sup>a b</sup>

OWNER	SITE CLASS'						ALL CLASSES
	≥225	165-224	120-164	85-119	50-84	20-49	
	<u>THOUSAND ACRES</u>						
NATIONAL FOREST	10	156	235	191	158	8	758
OTHER PUBLIC	17	147	294	117	19	21	615
FOREST INDUSTRY	110	330	274	125	73	40	952
OTHER PRIVATE	26	179	390	169	66	32	861
ALL OWNERS	162	812	1,194	602	316	101	3,187

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Mean annual cubic-foot growth per acre at culmination, in fully stocked natural stands. Excludes 37,000 acres for non-forest inclusions of less than 1 acre in size.

TABLE 7--AREA OF TIMBERLAND BY FOREST TYPE AND STAND-SIZE CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a</sup>

FOREST TYPE	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING-SAPLING	NONSTOCKED	ALL CLASSES
	<u>THOUSAND ACRES</u>				
DOUGLAS-FIR:					
DOUGLAS-FIR	636	149	157	--	941
DOUGLAS-FIR/RED ALDER	119	--	37	--	156
DOUGLAS-FIR/OTHER HARDWOOD	29	23	--	--	51
TOTAL	783	172	193	--	1,149
FIR-SPRUCE:					
PACIFIC SILVER FIR	181	13	172	--	367
MOUNTAIN HEMLOCK	29	10	11	--	50
NOBLE FIR	--	--	24	--	24
GRAND FIR	15	--	--	--	15
NOBLE FIR/RED ALDER	--	--	10	--	10
SUBALPINE FIR	4	3	1	--	8
TOTAL	230	26	218	--	473
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	409	83	149	--	641
WESTERN HEMLOCK/RED ALDER	29	--	--	--	29
WESTERN HEMLOCK/OTHER HARDWOOD	7	--	--	--	7
TOTAL	445	83	149	--	677
LODGEPOLE PINE	--	--	7	--	7
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	56	--	3	--	59
WESTERN REDCEDAR/OTHER HARDWOOD	14	--	--	--	14
WESTERN REDCEDAR/RED ALDER	10	--	--	--	10
ALASKA-CEDAR	2	--	1	--	3
TOTAL	82	--	4	--	86
ALL SOFTWOOD TYPES	1,539	281	571	--	2,391
WESTERN HARDWOOD TYPES:					
RED ALDER	239	83	49	--	371
RED ALDER/CONIFER	73	75	63	--	210
BIGLEAF MAPLE	62	16	1	--	79
BLACK COTTONWOOD	20	--	25	--	45
BIGLEAF MAPLE/CONIFER	30	--	--	--	30
WESTERN PAPER BIRCH	8	7	10	--	26
PACIFIC MADRONE	--	7	--	--	7
OREGON ASH	7	--	--	--	7
BITTER CHERRY/CONIFER	--	7	--	--	7
BITTER CHERRY	6	--	--	--	6
TOTAL	446	195	148	--	788
NONSTOCKED <sup>c</sup>	--	--	--	45	45
ALL TYPES	1,986	476	719	45	3,225

-- = none found or less than 500 acres.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 8-- NUMBER OF LIVE TREES ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

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+	
<u>THOUSAND TREES</u>																
SOFTWOODS:																
WESTERN HEMLOCK	165,521	103,116	51,686	42,541	25,454	15,235	10,777	7,692	4,232	2,763	1,551	968	842	475	2,453	435,308
DOUGLAS-FIR	68,993	61,800	40,218	31,678	27,649	21,487	14,069	11,183	7,706	5,711	4,090	2,612	1,914	1,285	3,057	303,451
PACIFIC SILVER FIR	81,946	38,803	13,691	9,048	5,893	3,220	2,533	1,917	1,311	1,284	882	826	743	574	1,606	164,279
WESTERN REDCEDAR	49,086	28,910	18,111	10,941	7,986	6,192	3,527	2,460	1,813	1,173	1,182	761	597	460	1,672	134,873
MOUNTAIN HEMLOCK	4,341	2,037	661	1,218	452	533	752	483	517	483	472	314	137	163	595	13,160
NOBLE FIR	3,834	3,665	498	384	207	--	54	46	65	44	29	55	37	27	78	9,024
GRAND FIR	2,313	2,168	2,056	664	252	233	243	179	196	50	41	70	28	37	56	8,585
PACIFIC YEW	3,274	1,672	735	--	188	--	20	--	--	--	--	--	--	--	--	5,890
ALASKA-CEDAR	956	958	688	436	235	309	110	162	62	51	33	29	31	34	138	4,232
SUBALPINE FIR	1,071	1,056	555	367	75	139	20	32	22	50	10	4	11	3	2	3,417
WESTERN WHITE PINE	--	1,153	222	175	145	230	282	53	--	6	7	21	--	--	4	2,298
SITKA SPRUCE	--	--	672	83	228	137	221	78	46	--	46	--	17	11	49	1,589
LODGEPOLE PINE	--	--	643	375	249	--	48	37	--	--	--	--	--	--	--	1,352
ENGELMANN SPRUCE	--	--	--	--	--	--	--	29	--	--	15	--	--	--	--	44
TOTAL SOFTWOODS	381,335	245,339	130,435	97,911	69,013	47,715	32,655	24,351	15,972	11,615	8,360	5,661	4,357	3,070	9,711	1,087,500
HARDWOODS:																
RED ALDER	68,236	34,897	19,414	15,119	16,255	15,032	8,309	5,677	2,163	1,073	562	185	100	38	66	187,125
BIGLEAF MAPLE	3,876	4,443	4,091	4,773	2,820	3,571	1,511	1,780	1,216	629	288	237	159	145	374	29,914
BITTER CHERRY	3,670	5,160	1,439	867	513	171	--	43	--	--	--	--	--	--	--	--
BLACK COTTONWOOD	2,513	1,669	823	260	634	469	287	135	478	253	230	201	191	48	181	18,862
WESTERN PAPER BIRCH	1,904	--	814	1,588	1,082	370	149	123	--	--	10	--	--	--	--	6,040
PACIFIC MADRONE	--	--	395	792	604	209	117	151	67	59	16	23	--	--	--	2,433
OREGON ASH	--	--	157	136	97	250	174	66	113	--	40	19	13	14	6	1,088
OTHER HARDWOOD TREES	1,681	1,542	783	146	140	136	53	162	--	21	27	--	--	--	--	4,691
TOTAL HARDWOODS	81,881	47,711	27,915	23,682	22,144	20,208	10,601	8,137	4,037	2,036	1,174	665	463	244	627	251,526
ALL SPECIES	463,216	293,050	158,350	121,593	91,157	67,923	43,256	32,488	20,009	13,650	9,534	6,326	4,821	3,315	10,338	1,339,026

-- = none found or less than 500 trees.

aTotals may be off because of rounding.

bSubject to sampling error.

TABLE 9-- NUMBER OF GROWING STOCK TREES ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

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+	
<u>THOUSAND TREES</u>																
SOFTWOODS:																
WESTERN HEMLOCK	146,118	94,069	46,129	39,428	24,607	14,811	10,461	7,558	4,203	2,683	1,476	945	802	462	2,289	396,040
DOUGLAS-FIR	60,938	54,601	37,283	30,791	27,200	21,090	13,705	11,085	7,636	5,711	4,048	2,588	1,869	1,278	2,988	282,811
PACIFIC SILVER FIR	74,038	40,358	12,537	8,859	5,576	3,132	2,494	1,889	1,268	1,276	860	821	732	566	1,580	155,986
WESTERN REDCEDAR	42,311	24,160	16,906	10,423	7,852	5,979	3,424	2,382	1,692	1,173	1,169	747	593	431	1,617	120,858
MOUNTAIN HEMLOCK	4,886	1,940	591	1,218	452	482	739	483	517	466	458	314	127	163	562	13,400
NOBLE FIR	3,834	3,665	498	384	207	--	54	46	65	44	29	55	32	27	78	9,018
GRAND FIR	2,313	810	762	664	252	233	243	179	196	50	41	70	28	37	56	5,934
ALASKA-CEDAR	1,221	1,088	480	436	203	309	90	162	51	51	33	29	15	34	125	4,327
SUBALPINE FIR	885	1,240	555	367	75	139	20	32	22	41	10	4	7	3	2	3,403
SITKA SPRUCE	--	--	672	83	127	137	221	78	46	--	46	--	17	11	49	1,487
LOGSPOLE PINE	--	--	643	375	249	--	48	37	--	--	--	--	--	--	--	1,352
WESTERN WHITE PINE	--	--	222	175	145	230	282	53	--	6	7	21	--	--	4	1,145
ENGELMANN SPRUCE	--	--	--	--	--	--	--	29	--	--	15	--	--	--	--	44
TOTAL SOFTWOODS	336,543	221,931	117,278	93,203	66,945	46,542	31,780	24,013	15,697	11,501	8,194	5,593	4,221	3,013	9,350	995,804
HARDWOODS:																
RED ALDER	58,316	32,972	19,088	14,664	15,705	14,842	8,140	5,604	2,115	1,053	538	156	100	38	54	173,385
BIGLEAF MAPLE	3,229	3,449	2,826	4,528	2,820	3,230	1,390	1,712	1,162	577	268	177	122	130	286	25,906
BITTER CHERRY	3,249	4,531	1,439	867	513	171	--	43	--	--	--	--	--	--	--	10,812
BLACK COTTONWOOD	2,513	1,669	612	260	571	469	226	135	478	253	230	201	183	48	181	8,029
WESTERN PAPER BIRCH	1,904	--	701	1,495	1,024	370	149	75	--	--	10	--	--	--	--	5,728
PACIFIC MADRONE	--	--	395	792	604	209	117	151	67	38	16	23	--	--	--	2,412
OREGON ASH	--	--	--	138	97	250	174	66	113	--	40	19	13	14	6	931
TOTAL HARDWOODS	69,212	42,621	25,061	22,744	21,333	19,542	10,197	7,785	3,936	1,922	1,102	576	418	229	527	227,204
ALL SPECIES	405,754	264,552	142,339	115,947	88,278	66,083	41,977	31,798	19,632	13,423	9,296	6,170	4,639	3,243	9,877	1,223,009

-- = none found or less than 500 trees.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

TABLE 10--NET VOLUME OF GROWING STOCK ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

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+	
<u>MILLION CUBIC FEET</u>														
SOFTWOODS:														
DOUGLAS-FIR	109	225	369	473	473	536	470	459	408	312	262	201	837	5,135
WESTERN HEMLOCK	133	281	366	351	367	360	260	205	127	103	100	68	556	3,278
PACIFIC SILVER FIR	33	58	69	63	79	80	80	97	84	96	101	94	461	1,395
WESTERN REDCEDAR	42	67	90	113	86	83	78	69	81	61	55	47	377	1,250
MOUNTAIN HEMLOCK	1	5	5	9	15	16	23	26	29	25	13	19	107	293
GRAND FIR	3	5	5	6	9	9	13	4	3	9	4	8	19	97
NOBLE FIR	1	2	4	--	2	2	4	4	3	7	5	5	24	61
ALASKA-CEDAR	1	2	2	5	2	5	2	3	2	2	1	3	23	53
SITKA SPRUCE	2	1	2	4	8	3	2	--	4	--	3	1	15	44
WESTERN WHITE PINE	1	3	2	5	12	3	--	--	1	3	--	--	1	31
SUBALPINE FIR	2	2	1	3	--	1	1	3	1	--	1	--	--	15
LODGEPOLE PINE	2	2	4	--	1	2	--	--	--	--	--	--	--	11
ENGELMANN SPRUCE	--	--	--	--	--	1	--	--	1	--	--	--	--	2
TOTAL SOFTWOODS	330	652	918	1,032	1,055	1,102	933	870	744	619	545	446	2,419	11,665
HARDWOODS:														
RED ALDER	64	122	252	374	295	266	127	81	48	18	13	5	9	1,673
BIGLEAF MAPLE	10	36	41	73	49	75	61	39	18	19	12	15	46	495
BLACK COTTONWOOD	1	2	9	11	11	7	36	24	27	29	27	7	41	234
WESTERN PAPER BIRCH	3	15	18	10	5	4	--	--	--	--	--	--	--	55
OREGON ASH	--	1	2	8	6	4	7	--	4	2	2	2	2	40
PACIFIC MADRONE	1	4	9	4	3	7	2	2	1	2	--	--	--	37
BITTER CHERRY	6	7	8	4	--	1	--	--	--	--	--	--	--	25
TOTAL HARDWOODS	86	188	339	485	369	363	234	145	99	70	54	30	99	2,560
ALL SPECIES	415	840	1,257	1,516	1,424	1,465	1,167	1,015	843	689	599	476	2,518	14,226

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

TABLE 11--NET VOLUME OF SAWTIMBER ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

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+	
<u>MILLION BOARD FEET, SCRIBNER RULE</u>												
SOFTWOODS:												
DOUGLAS-FIR	969	1,566	1,805	2,179	2,002	2,047	1,909	1,480	1,271	974	4,158	20,361
WESTERN HEMLOCK	1,006	1,168	1,361	1,410	1,079	885	555	491	490	356	3,664	12,466
PACIFIC SILVER FIR	160	196	294	326	364	462	417	493	534	518	2,732	6,497
WESTERN REDCEDAR	214	345	287	300	304	280	334	261	238	210	1,982	4,754
MOUNTAIN HEMLOCK	10	24	46	60	89	107	125	116	64	97	594	1,333
GRAND FIR	14	21	38	41	60	16	15	43	18	45	104	415
NOBLE FIR	12	--	8	7	18	17	15	33	24	25	135	295
ALASKA-CEDAR	3	14	5	19	5	12	9	9	7	16	122	220
SITKA SPRUCE	5	15	33	11	8	--	16	--	15	4	76	182
WESTERN WHITE PINE	7	17	47	12	--	2	3	19	--	--	8	116
SUBALPINE FIR	1	8	2	5	4	10	3	1	3	1	1	40
LODGEPOLE PINE	12	--	3	6	--	--	--	--	--	--	--	21
ENGELMANN SPRUCE	--	--	--	3	--	--	4	--	--	--	--	6
TOTAL SOFTWOODS	2,414	3,375	3,927	4,380	3,934	3,837	3,405	2,947	2,663	2,247	13,576	46,705
HARDWOODS:												
RED ALDER	29	1,419	1,352	1,325	653	429	254	98	71	29	54	5,712
BIGLEAF MAPLE	14	269	227	369	307	204	97	105	62	82	249	1,985
BLACK COTTONWOOD	--	40	53	36	198	132	159	173	158	41	246	1,236
WESTERN PAPER BIRCH	--	39	20	19	--	--	2	--	--	--	--	80
OREGON ASH	--	32	29	20	39	--	20	14	10	11	11	186
PACIFIC MADRONE	--	14	15	32	11	12	7	10	--	--	--	101
BITTER CHERRY	--	16	--	3	--	--	--	--	--	--	--	20
TOTAL HARDWOODS	43	1,830	1,695	1,804	1,208	777	539	401	301	163	560	9,319
ALL SPECIES	2,457	5,205	5,623	6,184	5,142	4,614	3,944	3,348	2,963	2,409	14,136	56,024

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

TABLE 12--NET VOLUME OF GROWING STOCK ON **TIMBERLAND** BY SPECIES AND OWNER, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b c</sup>

SPECIES	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
<u>MILLION CUBIC FEET</u>					
SOFTWOODS:					
DOUGLAS-FIR	1,152	1,730	974	1,279	5,135
WESTERN HEMLOCK	1,228	650	1,131	270	3,278
PACIFIC SILVER FIR	1,125	146	124	1	1,395
WESTERN REDCEDAR	384	242	250	375	1,250
MOUNTAIN HEMLOCK	260	28	5	-0	293
GRAND FIR	5	6	13	74	97
NOBLE FIR	57	3	1	-0	61
ALASKA-CEDAR	46	7	--	--	53
SITKA SPRUCE	1	11	18	14	44
WESTERN WHITE PINE	2	1	6	23	31
SUBALPINE FIR	15	--	--	--	15
LODGEPOLE PINE	--	--	2	9	11
ENGELMANN SPRUCE	2	--	--	--	2
TOTAL SOFTWOODS	4,277	2,822	2,523	2,044	11,665
HARDWOODS:					
RED ALDER	69	334	412	859	1,673
BIGLEAF MAPLE	25	103	79	287	495
BLACK COTTONWOOD	13	29	59	132	234
WESTERN PAPER BIRCH	--	4	34	17	55
OREGON ASH	--	--	--	40	40
PACIFIC MADRONE	--	13	--	24	37
BITTER CHERRY	--	4	6	15	25
TOTAL HARDWOODS	108	487	590	1,375	2,560
ALL SPECIES	4,385	3,308	3,113	3,419	14,226

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Includes trees 5 inches in d.b.h. and larger.

TABLE 13--NET VOLUME OF SAWTIMBER ON TIMBERLAND BY SPECIES AND OWNER, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b c</sup>

SPECIES	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
<u>MILLION BOARD FEET, SCRIBNER RULE</u>					
SOFTWOODS:					
DOUGLAS-FIR	4,457	7,456	3,667	4,781	20,361
WESTERN HEMLOCK	5,551	2,227	3,672	1,015	12,466
PACIFIC SILVER FIR	5,418	679	398	2	6,497
WESTERN REDCEDAR	1,815	772	794	1,373	4,754
MOUNTAIN HEMLOCK .	1,209	105	18	--	1,333
GRAND FIR	30	27	49	309	415
NOBLE FIR	287	8	--	--	295
ALASKA-CEDAR	197	23	--	--	220
SITKA SPRUCE	3	41	76	62	182
WESTERN WHITE PINE	13	--	26	77	116
SUBALPINE FIR	40	--	--	--	40
LOGEPOLE PINE	--	--	7	14	21
ENGELMANN SPRUCE	6	--	--	--	6
TOTAL SOFTWOODS	19,027	11,340	8,706	7,632	46,705
HARDWOODS:					
RED ALDER	209	1,215	1,391	2,896	5,712
BIGLEAF MAPLE	61	433	287	1,203	1,985
BLACK COTTONWOOD	64	153	300	719	1,236
WESTERN PAPER BIRCH	--	4	29	46	80
OREGON ASH	--	--	--	186	186
PACIFIC MADRONE	--	29	--	71	101
BITTER CHERRY	--	--	--	20	20
TOTAL HARDWOODS	334	1,836	2,008	5,141	9,319
ALL SPECIES	19,361	13,175	10,715	12,772	56,024

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>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 TIMBERLAND BY FOREST TYPE AND STAND-SIZE CLASS, PUGET SOUND AREA. WASHINGTON, JANUARY 1, 1990<sup>a, b</sup>

FOREST TYPE	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING- SAPLING	NONSTOCKED <sup>c</sup>	ALL CLASSES
	<u>MILLION CUBIC FEET</u>				
DOUGLAS-FIR:					
DOUGLAS-FIR	4,284	218	32	--	4,534
DOUGLAS-FIR/RED ALDER	781	--	4	--	785
DOUGLAS-FIR/OTHER HARDWOOD	205	37	--	--	242
TOTAL	5,271	255	35	--	5,561
FIR-SPRUCE:					
PACIFIC SILVER FIR	1,474	24	68	--	1,566
MOUNTAIN HEMLOCK	189	9	5	--	203
NOBLE FIR	--	--	3	--	3
GRAND FIR	92	--	--	--	92
NOBLE FIR/RED ALDER	--	--	24	--	24
SUBALPINE FIR	17	4	--	--	20
TOTAL	1,772	36	101	--	1,909
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	2,758	225	38	--	3,021
WESTERN HEMLOCK/RED ALDER	178	--	--	--	178
WESTERN HEMLOCK/OTHER HARDWOOD	45	--	--	--	45
TOTAL	2,981	225	38	--	3,245
LODGEPOLE PINE	--	--	28	--	28
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	442	--	--	--	442
WESTERN REDCEDAR/OTHER HARDWOOD	60	--	--	--	60
WESTERN REDCEDAR/RED ALDER	31	--	--	--	31
ALASKA-CEDAR	11	--	--	--	11
TOTAL	545	--	--	--	545
ALL SOFTWOOD TYPES	10,568	516	202	--	11,287
WESTERN HARDWOOD TYPES:					
RED ALDER	1,229	273	11	--	1,512
RED ALDER/CONIFER	437	215	10	--	662
BIGLEAF MAPLE	235	73	--	--	308
BLACK COTTONWOOD	110	--	4	--	114
BIGLEAF MAPLE/CONIFER	122	--	--	--	122
WESTERN PAPER BIRCH	40	42	12	--	94
PACIFIC MADRONE	--	12	--	--	12
OREGON ASH	37	--	--	--	37
BITTER CHERRY/CONIFER	--	20	--	--	20
BITTER CHERRY	15	--	--	--	15
TOTAL	2,224	635	37	--	2,896
NONSTOCKED <sup>c</sup>	--	--	--	43	43
ALL TYPES	12,793	1,151	239	43	14,226

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 Percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 15--NET VOLUME OF SAWTIMBER ON TIMBERLAND, BY FOREST TYPE AND STAND-SIZE CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

FOREST TYPE	STAND-SIZE CLASS				
	SAWTIMBER	POLETIMBER	SEEDLING- SAPLING	NONSTOCKED	ALL CLASSES
<u>MILLION BOARD FEET, SCRIBNER RULE</u>					
DOUGLAS-FIR:					
DOUGLAS-FIR	16,548	346	82	--	16,976
DOUGLAS-FIR/RED ALDER	3,034	--	6	--	3,040
DOUGLAS-FIR/OTHER HARDWOOD	834	55	--	--	888
TOTAL	20,415	400	88	--	20,904
FIR-SPRUCE:					
PACIFIC SILVER FIR	7,648	46	386	--	8,080
MOUNTAIN HEMLOCK	748	12	18	--	778
NOBLE FIR	--	--	3	--	3
GRAND FIR	376	--	--	--	376
NOBLE FIR/RED ALDER	--	--	96	--	96
SUBALPINE FIR	52	1	--	--	53
TOTAL	8,823	59	503	--	9,385
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	11,213	339	160	--	11,712
WESTERN HEMLOCK/RED ALDER	741	--	--	--	741
WESTERN HEMLOCK/OTHER HARDWOOD	151	--	--	--	151
TOTAL	12,105	339	160	--	12,604
LOGPOLE PINE	--	--	84	--	84
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	1,744	--	--	--	1,744
WESTERN REDCEDAR/OTHER HARDWOOD	223	--	--	--	223
WESTERN REDCEDAR/RED ALDER	66	--	--	--	66
ALASKA-CEDAR	39	--	--	--	39
TOTAL	2,072	--	--	--	2,072
ALL SOFTWOOD TYPES	43,415	798	836	--	45,049
WESTERN HARDWOOD TYPES:					
RED ALDER	4,980	746	7	--	5,733
RED ALDER/CONIFER	1,695	602	8	--	2,305
BIGLEAF MAPLE	967	206	--	--	1,173
BLACK COTTONWOOD	533	--	12	--	545
BIGLEAF MAPLE/CONIFER	485	--	--	--	485
WESTERN PAPER BIRCH	113	108	38	--	259
PACIFIC MADRONE	--	31	--	--	31
OREGON ASH	159	--	--	--	159
BITTER CHERRY/CONIFER	--	54	--	--	54
BITTER CHERRY	50	--	--	--	50
TOTAL	8,982	1,747	65	--	10,793
NONSTOCKED <sup>c</sup>	--	--	--	181	181
ALL TYPES	52,397	2,545	901	181	56,024

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 16--NET VOLUME OF GROWING STOCK ON TIMBERLAND, BY FOREST TYPE AND OWNER. PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a</sup>

FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	<u>MILLION CUBIC FEET</u>				
DOUGLAS-FIR:					
DOUGLAS-FIR	1,200	1,515	692	1,126	4,534
DOUGLAS-FIR/ — ALDER	--	393	260	133	785
DOUGLAS-FIR/OTHER HARDWOOD	--	117	94	30	242
TOTAL	1,200	2,024	1,047	1,290	5,561
FIR-SPRUCE:					
PACIFIC SILVER FIR	1,474	91	--	1	1,566
MOUNTAIN HEMLOCK	153	37	14	--	203
NOBLE FIR	--	--	3	--	3
GRAND FIR	--	--	--	92	92
NOBLE FIR/RED ALDER	--	24	--	--	24
SUBALPINE FIR	20	--	--	--	20
TOTAL	1,647	153	17	93	1,909
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	1,367	588	1,066	--	3,021
WESTERN HEMLOCK/RED ALDER	--	79	99	--	178
WESTERN HEMLOCK/OTHER HARDWOOD	--	--	45	--	45
TOTAL	1,367	667	1,210	--	3,245
LODGEPOLE PINE	--	--	--	28	28
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	90	84	149	119	442
WESTERN REDCEDAR/OTHER HARDWOOD	--	--	--	60	60
WESTERN REDCEDAR/RED ALDER	--	--	31	--	31
ALASKA-CEDAR	11	--	--	--	11
TOTAL	101	84	181	179	545
ALL SOFTWOOD TYPES	4,316	2,928	2,454	1,590	11,287
WESTERN HARDWOOD TYPES:					
RED ALDER	42	207	314	949	1,512
RED ALDER/CONIFER	--	116	185	360	662
BIGLEAF MAPLE	28	--	--	281	308
BLACK COTTONWOOD	--	31	--	82	114
BIGLEAF MAPLE/CONIFER	--	25	97	--	122
WESTERN PAPER BIRCH	--	--	42	52	94
PACIFIC MADRONE	--	--	--	12	12
OREGON ASH	--	--	--	37	37
BITTER CHERRY/CONIFER	--	--	--	20	20
BITTER CHERRY	--	--	--	15	15
TOTAL	70	380	638	1,808	2,896
NONSTOCKED <sup>c</sup>	--	--	21	22	43
ALL TYPES	4,385	3,308	3,113	3,419	14,226

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 17--NET VOLUME OF SAWTIMBER ON TIMBERLAND, BY FOREST TYPE AND OWNER, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a, b</sup>

FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
<u>MILLION BOARD FEET. SCRIBNER RULE</u>					
DOUGLAS-FIR:					
DOUGLAS-FIR	4,373	6,040	2,413	4,151	16,976
DOUGLAS-FIR/RED ALDER	--	1,534	1,004	502	3,040
DOUGLAS-FIR/OTHER HARDWOOD	--	535	236	117	888
TOTAL	4,373	8,108	3,653	4,770	20,904
FIR-SPRUCE:					
PACIFIC SILVER FIR	7,624	454	--	2	8,080
MOUNTAIN HEMLOCK	607	140	30	--	778
NOBLE FIR	--	--	3	--	3
GRAND FIR	--	--	--	376	376
NOBLE FIR/RED ALDER	--	96	--	--	96
SUBALPINE FIR	53	--	--	--	53
TOTAL	8,284	690	33	377	9,385
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	6,037	2,255	3,421	--	11,712
WESTERN HEMLOCK/RED ALDER	--	308	433	--	741
WESTERN HEMLOCK/OTHER HARDWOOD	--	--	151	--	151
TOTAL	6,037	2,562	4,005	--	12,604
LODGEPOLE PINE	--	--	--	84	84
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	372	310	543	518	1,744
WESTERN REDCEDAR/OTHER HARDWOOD	--	--	--	223	223
WESTERN REDCEDAR/RED ALDER	--	--	66	--	66
ALASKA-CEDAR	39	--	--	--	39
TOTAL	410	310	609	741	2,072
ALL SOFTWOOD TYPES	19,104	11,671	8,300	5,973	45,049
WESTERN HARDWOOD TYPES:					
RED ALDER	163	778	1,202	3,591	5,733
RED ALDER/CONIFER	--	496	633	1,177	2,305
BIGLEAF MAPLE	94	--	--	1,079	1,173
BLACK COTTONWOOD	--	129	--	416	545
BIGLEAF MAPLE/CONIFER	--	102	383	--	485
WESTERN PAPER BIRCH	--	--	108	152	260
PACIFIC MADRONE	--	--	--	31	31
OREGON ASH	--	--	--	159	159
BITTER CHERRY/CONIFER	--	--	--	54	54
BITTER CHERRY	--	--	--	50	50
TOTAL	257	1,504	2,324	6,709	10,793
NONSTOCKED <sup>c</sup>	--	--	90	91	181
ALL TYPES	19,361	13,175	10,715	12,772	56,024

-- = none found or less than 500.000 board feet.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 18--NET VOLUME OF TIMBER ON TIMBERLAND BY CLASS OF TIMBER AND SPECIES CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

CLASS OF TIMBER	SPECIES CLASS		
	SOFTWOODS	HARDWOODS	ALL SPECIES
	<u>MILLION CUBIC FEET</u>		
SAWTIMBER TREES:			
SAW-LOG PORTION <sup>c</sup>	6,365	1,658	8,024
UPPER STEM PORTION <sup>c</sup>	254	213	467
TOTAL SAWTIMBER <sup>d</sup>	10,683	1,948	12,631
POLETIMBER TREES	982	612	1,594
ALL GROWING-STOCK TREES	11,665	2,560	14,226
SOUND CULL TREES	45	61	106
ROTTEN CULL TREES	148	1	149
TOTAL CULL TREES	193	63	257
SALVABLE DEAD TREES	127	5	132
ALL TIMBER	11,985	2,628	14,615

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Volume distribution by saw-log portion and upper-stem portion is unavailable for National Forest ownership.

<sup>d</sup>Includes total volume for National Forest ownership.

TABLE 19--CURRENT NET ANNUAL GROWTH OF GROWING STOCK ON TIMBERLAND BY FOREST TYPE AND OWNER. PUGET SOUND AREA, WASHINGTON, 1989<sup>a</sup>

FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	<u>THOUSAND CUBIC FEET</u>				
DOUGLAS-FIR:					
DOUGLAS-FIR	13,005	46,421	36,712	39,450	135,588
DOUGLAS-FIR/= ALDER	--	14,309	9,549	5,610	29,469
DOUGLAS-FIR/OTHER HARDWOOD	--	2,379	7,434	1,156	10,969
TOTAL	13,005	63,109	53,695	46,217	176,026
FIR-SPRUCE:					
PACIFIC SILVER FIR	3,481	1,505	10	30	5,027
MOUNTAIN HEMLOCK	801	209	1,479	--	2,489
NOBLE FIR	--	--	319	--	319
GRAND FIR	--	--	--	2,768	2,768
NOBLE FIR/RED ALDER	--	1,907	--	--	1,907
SUBALPINE FIR	143	--	--	--	143
TOTAL	4,426	3,621	1,809	2,798	12,654
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	7,501	20,593	52,117	--	80,211
WESTERN HEMLOCK/RED ALDER	--	3,365	3,397	--	6,762
WESTERN HEMLOCK/OTHER HARDWOOD	--	--	2,510	--	2,510
TOTAL	7,501	23,956	58,025	--	89,482
LOGEPOLE PINE	--	--	--	1,096	1,096
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	480	2,772	4,193	4,859	12,304
WESTERN REDCEDAR/OTHER HARDWOOD	--	--	--	2,310	2,310
WESTERN REDCEDAR/RED ALDER	--	--	2,763	--	2,763
ALASKA CEDAR	175	--	--	--	175
TOTAL	655	2,772	6,957	7,169	17,553
ALL SOFTWOOD TYPES	25,588	93,459	120,484	57,280	296,811
WESTERN HARDWOOD TYPES:					
RED ALDER	498	6,769	8,674	32,371	48,313
RED ALDER/CONIFER	--	3,366	8,440	16,585	28,391
BIGLEAF MAPLE	475	--	--	10,500	10,975
BLACK COTTONWOOD	--	1,329	--	2,626	3,955
BIGLEAF MAPLE/CONIFER	--	582	3,220	--	3,802
WESTERN PAPER BIRCH	--	--	2,014	2,762	4,777
PACIFIC MADRONE	--	--	--	137	137
OREGON ASH	--	--	--	727	727
BITTER CHERRY/CONIFER	--	--	--	1,717	1,717
BITTER CHERRY	--	--	--	516	516
TOTAL	973	12,046	22,349	67,941	103,309
NONSTOCKED <sup>c</sup>	--	--	120	800	920
ALL TYPES	26,561	105,506	142,954	126,021	401,041

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 20--CURRENT NET ANNUAL GROWTH OF SAWTIMBER ON TIMBERLAND BY FOREST TYPE AND OWNER, PUGET SOUND AREA. WASHINGTON, 1989<sup>a</sup>

FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
<u>THOUSAND BOARD FEET, SCRIBNER RULE<sup>c</sup></u>					
DOUGLAS-FIR:					
DOUGLAS-FIR	63.382	232,906	164,089	182,909	643,287
DOUGLAS-FIR/RED ALDER	--	70,176	57,703	24,017	151,897
DOUGLAS-FIR/OTHER HARDWOOD	--	17,943	28,431	5,736	52,110
TOTAL	63.382	321.024	250,224	212,663	847.292
FIR-SPRUCE:					
PACIFIC SILVER FIR	22,101	5,409	--	97	27,606
MOUNTAIN HEMLOCK	6,812	1,013	1,376	--	9,200
NOBLE FIR	--	--	281	--	281
GRAND FIR	--	--	--	15,144	15,144
NOBLE FIR/RED ALDER	--	5.910	--	--	5.910
SUBALPINE FIR	-31	--	--	--	-31
TOTAL	28,881	12,332	1,657	15.241	58,111
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	48,073	97,749	215,747	--	361,569
WESTERN HEMLOCK/RED ALDER	--	16,616	19,692	--	36,307
WESTERN HEMLOCK/OTHER HARDWOOD	--	--	9,447	--	9.447
TOTAL	48.073	114.365	244,887	--	407,324
LOGSPOLE PINE	--	--	--	3,421	3,421
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	3.811	14.980	20,178	23.762	62.731
WESTERN REDCEDAR/OTHER HARDWOOD	--	--	--	10,093	10,093
WESTERN REDCEDAR/RED ALDER	--	--	12,244	--	12,244
ALASKA-CEDAR	329	--	--	--	329
TOTAL	4,140	14,980	32,422	33,855	85.397
ALL SOFTWOOD TYPES	144,476	462,700	529.189	265,180	1,401,545
WESTERN HARDWOOD TYPES:					
RED ALDER	863	34.353	52,359	176.167	263,743
RED ALDER/CONIFER	--	16,195	48,817	70,509	135,521
BIGLEAF MAPLE	1,770	--	--	89,605	91,375
BLACK COTTONWOOD	--	6,613	--	17,286	23,899
BIGLEAF MAPLE/CONIFER	--	2,540	17,210	--	19,750
WESTERN PAPER BIRCH	--	--	9,530	9,613	19,143
PACIFIC MADRONE	--	--	--	1,590	1,590
OREGON ASH	--	--	--	3,794	3,794
BITTER CHERRY/CONIFER	--	--	--	6,054	6,054
BITTER CHERRY	--	--	--	2,207	2,207
TOTAL	2,633	59.702	127,915	376.824	567.074
NONSTOCKED <sup>d</sup>	--	--	1,027	4,255	5.282
ALL TYPES	147,109	522.402	658,131	646,259	1,973,901

-- = none found or less than 500 board feet

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Negative net annual growth is the result of annual mortality exceeding gross annual growth

<sup>d</sup>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 TIMBERLAND BY FOREST TYPE AND OWNER, PUQUET SOUND AREA, WASHINGTON. 1989<sup>a b</sup>

FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	THOUSAND CUBIC FEET				
DOUGLAS-FIR:					
DOUGLAS-FIR	6,311	5,937	848	2,856	15,952
DOUGLAS-FIR/RED ALDER	--	1,076	822	375	2,273
DOUGLAS-FIR/OTHER HARDWOOD	--	1,046	70	--	1,116
TOTAL	6,311	8,059	1,740	3,231	19,341
FIR-SPRUCE:					
PACIFIC SILVER FIR	8,689	137	--	--	8,826
MOUNTAIN HEMLOCK	503	--	--	--	503
NOBLE FIR	--	--	--	--	--
GRAND FIR	--	--	--	843	843
NOBLE FIR/RED ALDER	--	--	--	--	--
SUBALPINE FIR	292	--	--	--	292
TOTAL	9,484	137	--	843	10,464
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	7,506	1,620	5,513	--	14,639
WESTERN HEMLOCK/RED ALDER	--	640	437	--	1,078
WESTERN HEMLOCK/OTHER HARDWOOD	--	--	--	--	--
TOTAL	7,506	2,261	5,950	--	15,717
LODGEPOLE PINE	--	--	--	--	--
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	403	384	547	176	1,510
WESTERN REDCEDAR/OTHER HARDWOOD	--	--	--	--	--
WESTERN REDCEDAR/RED ALDER	--	--	--	--	--
ALASKA-CEDAR	66	--	--	--	66
TOTAL	470	384	547	176	1,576
ALL SOFTWOOD TYPES	23,771	10,840	8,238	4,250	47,099
WESTERN HARDWOOD TYPES:					
RED ALDER	198	573	1,492	5,354	7,617
RED ALDER/CONIFER	--	533	434	1,319	2,286
BIGLEAF MAPLE	86	--	--	807	893
BLACK COTTONWOOD	--	59	--	868	927
BIGLEAF MAPLE/CONIFER	--	--	599	--	599
WESTERN PAPER BIRCH	--	--	150	264	414
PACIFIC MADRONE	--	--	--	328	328
OREGON ASH	--	--	--	--	--
BITTER CHERRY/CONIFER	--	--	--	--	--
BITTER CHERRY	--	--	--	--	--
TOTAL	284	1,164	2,675	8,940	13,063
NONSTOCKED <sup>c</sup>	--	--	357	96	453
ALL TYPES	24,055	12,004	11,269	13,286	60,615

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcut scheduled for planting are included.

TABLE 22--AVERAGE ANNUAL MORTALITY OF SAWTIMBER ON TIMBERLAND BY FOREST TYPE AND OWNER, PUGET SOUND AREA, WASHINGTON, 1989<sup>a, b</sup>

FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
<u>THOUSAND BOARD FEET, SCRIBNER RULE</u>					
DOUGLAS-FIR:					
DOUGLAS-FIR	20,636	14,664	1,736	6,122	43,159
DOUGLAS-FIR/RED ALDER	--	1,845	1,415	--	3,260
DOUGLAS-FIR/OTHER HARDWOOD	--	3,562	--	--	3,562
TOTAL	20,636	20,072	3,151	6,122	49,981
FIR-SPRUCE:					
PACIFIC SILVER FIR	45,094	772	--	--	45,865
MOUNTAIN HEMLOCK	1,890	--	--	--	1,890
NOBLE FIR	--	--	--	--	--
GRAND FIR	--	--	--	2,766	2,766
NOBLE FIR/RED ALDER	--	--	--	--	--
SUBALPINE FIR	809	--	--	--	809
TOTAL	47,793	772	--	2,766	51,330
HEMLOCK-SITKA SPRUCE:					
WESTERN HEMLOCK	31,186	4,647	13,771	--	49,604
WESTERN HEMLOCK/RED ALDER	--	919	1,265	--	2,185
WESTERN HEMLOCK/OTHER HARDWOOD	--	--	--	--	--
TOTAL	31,186	5,566	15,036	--	51,788
LODGEPOLE PINE	--	--	--	--	--
OTHER SOFTWOOD TYPES:					
WESTERN REDCEDAR	1,455	555	1,295	885	4,190
WESTERN REDCEDAR/OTHER HARDWOOD	--	--	--	--	--
WESTERN REDCEDAR/RED ALDER	--	--	--	--	--
ALASKA-CEDAR	289	--	--	--	289
TOTAL	1,744	555	1,295	885	4,479
ALL SOFTWOOD TYPES	101,358	26,965	19,482	9,773	157,578
WESTERN HARDWOOD TYPES:					
RED ALDER	738	1,168	3,278	8,846	14,030
RED ALDER/CONIFER	--	1,947	418	2,737	5,102
BIGLEAF MAPLE	219	--	--	1,883	2,102
BLACK COTTONWOOD	--	212	--	3,688	3,900
BIGLEAF MAPLE/CONIFER	--	--	1,277	--	1,277
WESTERN PAPER BIRCH	--	--	--	1,017	1,017
PACIFIC MADRONE	--	--	--	--	--
OREGON ASH	--	--	--	--	--
BITTER CHERRY/CONIFER	--	--	--	--	--
BITTER CHERRY	--	--	--	--	--
TOTAL	957	3,326	4,974	18,171	27,427
NONSTOCKED <sup>c</sup>	--	--	1,585	258	1,843
ALL TYPES	102,315	30,291	26,041	28,202	186,848

-- - none found or less than 500 board feet

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Nonstocked areas are less than 10 percent stocked with live trees. Recent clearcuts scheduled for planting are included.

TABLE 23--AREA BY COUNTY AND LAND CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

FOREST LAND							
COUNTY	TIMBERLAND	RESERVED TIMBERLAND	OTHER FOREST	RESERVED OTHER FOREST	TOTAL	NONFOREST LAND <sup>c</sup>	ALL LAND <sup>d</sup>
THOUSAND HECTARES							
ISLAND	28	--	--	--	29	25	53
KING	292	24	15	18	349	198	547
KITSAP	62	--	1	--	63	39	103
PIERCE	227	45	6	30	308	127	434
SAN JUAN	24	1	--	1	27	19	46
SKAGIT	240	33	9	23	304	146	450
SNOHOMISH	267	55	23	24	370	176	546
WHATCOM	165	64	8	59	296	244	541
ALL COUNTIES	1,305	224	62	155	1,746	976	2,722

-- = none found or less than 500 hectares.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>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.

<sup>d</sup>Source: United States Department of Commerce 1983.

TABLE 24--AREA OF RESERVED TIMBERLAND AND OTHER FOREST LAND BY LAND CLASS, FOREST TYPE, AND OWNER, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

LAND CLASS AND FOREST TYPE	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	<u>THOUSAND ACRES</u>				
RESERVED TIMBERLAND:					
DOUGLAS-FIR	56	108	--	--	164
FIR-SPRUCE	112	90	--	--	202
HEMLOCK-SITKA SPRUCE	108	55	--	--	163
LODGEPOLE PINE	--	1	--	--	1
OTHER SOFTWOOD TYPES	7	3	--	--	10
WESTERN HARDWOOD TYPES	4	9	--	--	13
UNCLASSIFIED'	1	--	--	--	1
TOTAL	288	266	--	--	554
RESERVED OTHER FOREST:					
DOUGLAS-FIR	30	--	--	--	30
FIR-SPRUCE	61	--	--	--	61
HEMLOCK-SITKA SPRUCE	58	--	--	--	58
OTHER SOFTWOOD TYPES	4	--	--	--	4
WESTERN HARDWOOD TYPES	2	--	--	--	2
UNCLASSIFIED~	--	228	--	--	228
TOTAL	155	228	--	--	384
ALL RESERVED	443	495	--	--	938
UNRESERVED OTHER FOREST:					
DOUGLAS-FIR	16	--	--	--	16
FIR-SPRUCE	32	--	--	--	32
HEMLOCK-SITKA SPRUCE	29	--	--	--	29
OTHER SOFTWOOD TYPES	2	--	--	--	2
HARDWOOD TYPES	--	31	37	3	71
ALL UNRESERVED	82	31	37	3	153

-- = none found or less than 500 acres.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

'Information on forest type unavailable.

TABLE 25--AREA OF TIMBERLAND BY OWNER AND STAND-SIZE CLASS, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990.<sup>a b</sup>

OWNER	STAND-SIZE CLASS					ALL CLASSES
	SAWTIMBER	POLETIMBER	SEEDLING-SAPLING	NONSTOCKED <sup>c</sup>		
<u>THOUSAND HECTARES</u>						
NATIONAL FOREST	234	11	62	4		311
OTHER PUBLIC	173	21	56	3		253
FOREST INDUSTRY	160	104	120	6		389
OTHER PRIVATE	236	57	53	5		352
ALL OWNERS	804	193	291	18		1,305

-- = none found or less than 500 hectares

<sup>a</sup>Totals may be off because of rounding,

<sup>b</sup>Subject to sampling error.

<sup>c</sup>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<sup>a</sup>, AND NET VOLUME OF SAWTIMBER<sup>b</sup> ON TIMBERLAND BY STAND AGE AND OWNER, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>c,d</sup>

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
	<u>THOUSAND ACRES</u>	<u>THOUSAND CUBIC FEET</u>	<u>THOUSAND BOARD FEET</u>	<u>THOUSAND ACRES</u>	<u>THOUSAND CUBIC FEET</u>	<u>THOUSAND BOARD FEET</u>	<u>THOUSAND ACRES</u>	<u>THOUSAND CUBIC FEET</u>	<u>THOUSAND BOARD FEET</u>
EVEN-AGED:									
0-9	50	13,468	72,856	10	--	--	85	4,568	18,286
10-19	52	7,530	49,436	110	51,057	170,336	228	54,588	72,360
20-29	40	7,277	8,960	16	8,294	--	88	116,621	201,519
30-39	29	52,187	105,848	21	73,555	190,813	118	467,356	1,218,775
40-49	26	98,195	215,793	80	397,011	1,307,916	123	760,050	2,366,599
50-59	26	126,277	384,623	70	540,398	2,086,119	86	693,311	3,050,675
60-69	30	158,983	467,057	106	948,458	4,067,527	51	381,572	1,476,526
70-79	22	173,927	605,646	18	142,992	599,783	--	--	--
80-89	12	62,904	190,597	12	102,704	342,800	--	--	--
90-99	6	58,461	191,196	--	--	--	7	24,625	55,923
100-109	16	142,507	511,566	--	--	--	7	43,032	195,802
110-119	16	166,610	579,832	17	89,972	404,419	10	43,136	87,672
120-129	7	69,331	300,462	5	70,688	369,464	--	--	--
130-139	--	--	--	--	--	--	--	--	--
140-149	--	--	--	--	--	--	--	--	--
150-159	3	32,336	121,451	--	--	--	--	--	--
160-169	--	--	--	--	--	--	--	--	--
170-179	2	12,765	59,157	--	--	--	--	--	--
180-189	--	--	--	--	--	--	--	--	--
190-199	--	--	--	--	--	--	--	--	--
200-299	52	485,959	2,156,214	--	--	--	--	--	--
300+	371	2,716,407	13,340,556	7	36,735	140,305	--	--	--
UNEVEN-AGED:									
< 100	--	--	--	33	125,952	489,744	29	167,257	655,584
100+	--	--	--	44	403,430	1,741,364	--	--	--
NO MANAGEABLE STAND <sup>e</sup>									
	--	--	--	78	317,229	1,264,748	129	356,750	1,315,176
UNCLASSIFIED~									
	10	--	--					--	--
ALL AGES	769	4,385,125	19,361,250	625	3,308,476	13,175,339	961	3,112,866	10,714,898

TABLE 26--(CONTINUED)

STAND AGE	OTHER PRIVATE			ALL OWNERS		
	AREA	GROWING STOCK	SAWTIMBER VOLUME	AREA	GROWING STOCK	SAWTIMBER VOLUME
		VOLUME	SCRIBNER RULE		VOLUME	SCRIBNER RULE
	<u>THOUSAND ACRES</u>	<u>THOUSAND CUBIC FEET</u>	<u>THOUSAND BOARD FEET</u>	<u>THOUSAND ACRES</u>	<u>THOUSAND CUBIC FEET</u>	<u>THOUSAND BOARD FEET</u>
<b>EVEN-AGED:</b>						
0-9	26	9,336	27,203	171	27,372	118,344
10-19	42	32,161	109,942	432	145,337	402,074
20-29	13	25,759	45,403	157	157,951	255,883
30-39	26	69,901	162,366	194	662,999	1,677,802
40-49	25	127,657	392,577	254	1,382,913	4,282,885
50-59	93	524,929	1,945,957	274	1,884,916	7,467,374
60-69	27	135,366	526,237	214	1,624,379	6,537,346
70-79	39	260,764	1,044,536	79	577,683	2,249,966
80-89	27	152,845	570,364	52	318,453	1,103,761
90-99	7	96,480	504,389	20	179,565	751,508
100-109	--	--	--	23	185,539	707,367
110-119	--	--	--	42	299,719	1,071,923
120-129	--	--	--	12	140,019	669,926
130-139	--	--	--	--	--	--
140-149	--	--	--	--	--	--
150-159	--	--	--	3	32,336	121,451
160-169	--	--	--	--	--	--
170-179	--	--	--	2	12,765	59,157
180-189	--	--	--	--	--	--
190-199	--	--	--	--	--	--
200-299	--	--	--	52	485,959	2,156,214
300+	--	--	--	379	2,753,142	13,480,861
<b>UNEVEN-AGED:</b>						
<100	57	303,711	1,177,433	119	596,921	2,322,761
100+	34	181,988	603,602	78	585,418	2,344,967
<b>NO MANAGEABLE STAND<sup>e</sup></b>	453	1,498,277	5,662,414	660	2,172,256	8,242,338
<b>UNCLASSIFIED<sup>f</sup></b>	--	--	--	10	--	--
<b>ALL AGES</b>	<b>870</b>	<b>3,419,173</b>	<b>12,772,422</b>	<b>3,225</b>	<b>14,225,640</b>	<b>56,023,909</b>

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

<sup>a</sup>Includes trees 5 inches in d.b.h. and larger.

<sup>b</sup>Includes conifer trees 9 inches in d.b.h. and larger and hardwood trees 11 inches in d.b.h. and larger.

<sup>c</sup>Totals may be off because of rounding.

<sup>d</sup>Subject to sampling error.

<sup>e</sup>Lacks 25 percent conifer stocking on 3/5ths of sample points.

<sup>f</sup>Stand age unavailable for National Forest.

TABLE 27--NET VOLUME OF GROWING STOCK AND SAWTIMBER ON TIMBERLAND BY COUNTY AND OWNER, PUGET SOUND AREA, WASHINGTON, JANUARY 1, 1990<sup>a b</sup>

COUNTY	OWNER				
	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
<u>MILLION CUBIC FEET</u>					
GROWING STOCK:					
ISLAND	--	40	9	196	245
KING	571	659	968	634	2,832
KITSAP	--	155	81	330	565
PIERCE	405	407	717	567	2,096
SAN JUAN	--	18	--	299	318
SKAGIT	993	696	568	383	2,640
SNOHOMISH	1,471	754	473	609	3,307
WHATCOM	947	578	298	400	2,223
ALL COUNTIES	4,385	3,308	3113	3,419	14,226
<u>MILLION BOARD FEET, SCRIBNER RULE</u>					
SAWTIMBER:					
ISLAND	--	140	29	689	857
KING	2,420	2,571	3,393	2,353	10,737
KITSAP	--	546	259	1,164	1,969
PIERCE	1,600	1,591	2,363	2,110	7,664
SAN JUAN	--	71	--	1,175	1,246
SKAGIT	4,543	2,817	1,924	1,447	10,732
SNOHOMISH	6,398	3,060	1,673	2,283	13,412
WHATCOM	4,401	2,381	1,074	1,552	9,407
ALL COUNTIES	19,361	13,175	10,715	12,772	56,024
<u>MILLION CUBIC METERS</u>					
GROWING STOCK:					
ISLAND	--	1	--	6	7
KING	16	19	27	18	80
KITSAP	--	4	2	9	16
PIERCE	11	12	20	16	59
SAN JUAN	--	1	--	8	9
SKAGIT	28	20	16	11	75
SNOHOMISH	42	21	13	17	94
WHATCOM	27	16	8	11	63
ALL COUNTIES	124	94	88	97	403

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

TABLE 28--CURRENT NET ANNUAL GROWTH, AVERAGE ANNUAL MORTALITY, AND AVERAGE ANNUAL REMOVALS OF GROWING STOCK ON TIMBERLAND BY SPECIES AND OWNER, PUGET SOUND AREA, WASHINGTON, 1989<sup>a, b</sup>

SPECIES	NATIONAL FOREST <sup>c</sup>		OTHER PUBLIC			FOREST INDUSTRY			OTHER PRIVATE		
	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	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	AVERAGE ANNUAL REMOVALS
<u>THOUSAND CUBIC FEET<sup>e</sup></u>											
SOFTWOODS:											
DOUGLAS-FIR	9,358	6,085	54,414	5,098	18,056	50,496	3,180	45,698	48,018	3,935	36,595
WESTERN HEMLOCK	7,114	7,159	23,591	2,748	13,669	54,019	4,481	52,395	10,850	762	13,560
PACIFIC SILVER FIR	3,924	8,245	2,811	1,151	4,963	5,460	765	20,504	30	--	2,870
WESTERN REDCEDAR	2,723	1,305	9,540	92	4,251	10,871	308	10,410	14,845	90	4,337
MOUNTAIN HEMLOCK	1,069	205	180	--	257	349	--	10,365	--	--	--
GRAND FIR	37	--	212	--	--	779	--	406	2,851	324	208
NOBLE FIR	561	48	165	--	212	175	--	427	--	--	--
ALASKA-CEDAR	354	28	61	--	2,145	--	--	--	--	--	--
SITKA SPRUCE	6	--	782	--	--	461	--	275	-11	454	--
WESTERN WHITE PINE	-171	183	-133	198	--	118	--	--	851	--	--
SUBALPINE FIR	-2	290	--	--	--	--	--	--	--	--	--
LODGEPOLE PINE	--	--	--	--	--	-82	119	--	438	--	81
ENGELMANN SPRUCE	24	--	--	--	--	--	--	--	--	--	--
TOTAL SOFTWOODS	24,999	23,548	91,622	9,287	43,554	122,644	8,854	140,479	77,873	5,565	57,651
HARDWOODS:											
RED ALDER	1,117	471	10,368	1,709	2,106	12,711	2,111	15,689	30,783	5,516	18,839
BIGLEAF MAPLE	261	36	2,490	403	1,822	2,639	180	1,883	10,125	518	--
BLACK COTTONWOOD	184	--	1,086	--	421	3,041	--	--	4,936	583	188
WESTERN PAPER BIRCH	--	--	61	30	200	1,523	--	--	493	261	--
OREGON ASH	--	--	--	--	--	--	--	360	955	--	--
PACIFIC MADRONE	--	--	118	80	--	--	--	--	472	210	--
BITTER CHERRY	--	--	-239	494	103	393	125	--	386	633	329
TOTAL HARDWOODS	1,562	507	13,884	2,717	4,652	20,309	2,416	17,932	48,148	7,721	20,866
ALL SPECIES	26,561	24,055	105,506	12,004	48,206	142,954	11,269	158,411	126,021	13,286	78,517

TABLE 28--(CONTINUED)

SPECIES	ALL OWNERS <sup>d</sup>	
	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY
	<u>THOUSAND CUBIC FEET<sup>e</sup></u>	
SOFTWOODS:		
DOUGLAS-FIR	162,287	18,298
WESTERN HEMLOCK	95,573	15,150
PACIFIC SILVER FIR	12,225	10,161
WESTERN REDCEDAR	37,979	1,795
MOUNTAIN HEMLOCK	1,598	205
GRAND FIR	3,878	324
NOBLE FIR	901	48
ALASKA-CEDAR	415	28
SITKA SPRUCE	1,238	454
WESTERN WHITE PINE	666	381
SUBALPINE FIR	-2	290
LODGEPOLE PINE	356	119
ENGELMANN SPRUCE	24	--
TOTAL SOFTWOODS	317,137	47,254
HARDWOODS:		
RED ALDER	54,979	9,807
BIGLEAF MAPLE	15,512	1,138
BLACK COTTONWOOD	9,248	583
WESTERN PAPER BIRCH	2,078	291
OREGON ASH	955	--
PACIFIC MADRONE	590	290
BITTER CHERRY	541	1,252
TOTAL HARDWOODS	83,903	13,361
ALL SPECIES	401,041	60,615

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Removals not available for National Forest.

<sup>d</sup>Removals not available for all ownerships.

<sup>e</sup>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, PUGET SOUND AREA, WASHINGTON, 1989<sup>a</sup>

SPECIES	NATIONAL FOREST <sup>b</sup>		OTHER PUBLIC			FOREST INDUSTRY			OTHER PRIVATE		
	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	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY	AVERAGE ANNUAL REMOVALS
<u>THOUSAND BOARD FEET, SCRIBNER RULE<sup>c</sup></u>											
SOFTWOODS:											
DOUGLAS-FIR	51,941	20,682	300,271	13,829	89,814	227,285	6,434	188,997	228,603	9,327	148,909
WESTERN HEMLOCK	36,970	31,366	95,688	6,288	53,712	252,430	12,082	210,672	60,381	2,659	56,747
PACIFIC SILVER FIR	27,905	41,014	13,438	4,690	24,101	22,970	1,610	97,906	97	--	13,966
WESTERN REDCEDAR	17,624	5,155	33,220	--	15,360	47,640	1,284	34,334	66,867	259	15,063
MOUNTAIN HEMLOCK	7,476	568	787	--	1,080	173	--	53,171	--	--	--
GRAND FIR	132	--	1,238	--	--	3,810	--	1,986	14,970	866	961
NOBLE FIR	2,406	209	741	--	789	--	--	2,099	--	--	--
ALASKA-CEDAR	981	106	292	--	8,718	--	--	--	--	--	--
SITKA SPRUCE	39	--	1,675	--	--	2,522	--	1,348	-62	2,445	--
WESTERN WHITE PINE	-837	911	--	--	--	606	--	--	3,636	--	--
SUBALPINE FIR	-427	849	--	--	--	--	--	--	--	--	--
LODGEPOLE PINE	--	--	--	--	--	-233	409	--	707	--	--
ENGELMANN SPRUCE	99	--	--	--	--	--	--	--	--	--	--
TOTAL SOFTWOODS	144,307	100,861	447,350	24,808	193,575	557,203	21,819	590,513	375,197	15,557	235,646
HARDWOODS:											
RED ALDER	764	1,453	55,084	3,258	9,032	65,310	3,426	64,099	158,578	5,978	62,939
BIGLEAF MAPLE	1,065	--	13,758	1,189	8,528	10,706	796	8,829	72,846	1,815	8,345
BLACK COTTONWOOD	972	--	6,431	--	2,418	23,492	--	--	29,881	3,428	--
WESTERN PAPER BIRCH	--	--	118	--	838	1,420	--	--	1,927	505	--
OREGON ASH	--	--	--	--	--	--	--	927	5,246	--	--
PACIFIC MADRONE	--	--	340	358	--	--	--	--	2,469	--	--
BITTER CHERRY	--	--	-678	678	--	--	--	--	117	918	827
TOTAL HARDWOODS	2,802	1,453	75,053	5,483	20,815	100,928	4,222	73,855	271,062	12,645	72,111
ALL SPECIES	147,109	102,315	522,402	30,291	214,390	658,131	26,041	664,368	646,259	28,202	307,757

TABLE 29--(CONTINUED)

SPECIES	ALL OWNERS <sup>d</sup>	
	CURRENT NET ANNUAL GROWTH	AVERAGE ANNUAL MORTALITY
	<u>THOUSAND BOARD FEET, SCRIBNER RULE<sup>e</sup></u>	
SOFTWOODS:		
DOUGLAS-FIR	808,099	50,273
WESTERN HEMLOCK	445,469	52,395
PACIFIC SILVER FIR	64,409	47,315
WESTERN REDCEDAR	165,351	6,698
MOUNTAIN HEMLOCK	8,435	568
GRAND FIR	20,149	866
NOBLE FIR	3,147	209
ALASKA-CEDAR	1,273	106
SITKA SPRUCE	4,174	2,445
WESTERN WHITE PINE	3,404	911
SUBALPINE FIR	-427	849
LODGEPOLE PINE	474	409
ENGELMANN SPRUCE	99	--
TOTAL SOFTWOODS	1,524,056	163,045
HARDWOODS:		
RED ALDER	279,735	14,116
BIGLEAF MAPLE	98,376	3,799
BLACK COTTONWOOD	60,776	3,428
WESTERN PAPER BIRCH	3,465	505
OREGON ASH	5,246	--
PACIFIC MADRONE	2,809	358
BITTER CHERRY	-561	1,596
TOTAL HARDWOODS	449,844	23,803
ALL SPECIES	1,973,901	186,848

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Removals not available for National Forest.

<sup>d</sup>Removals not available for all ownerships.

<sup>e</sup>Negative net annual growth is the result of annual mortality exceeding gross annual growth.

TABLE 30--CHANGES IN TIMBERLAND AREA AND OWNER ON PRIVATE AND OTHER PUBLIC  
TIMBERLAND, PUGET SOUND AREA, WASHINGTON, 1979-89<sup>a b</sup>

DESCRIPTION	OWNER			
	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
	<u>THOUSAND ACRES'</u>			
TIMBERLAND AREA IN 1979	603	1,058	909	2,570
GAINS AND LOSSES IN TIMBERLAND AREA (1979-89)--				
A. CHANGES IN LAND USE--				
TIMBERLAND TO RIGHTS-OF-WAY	--	-7	-35	-42
TIMBERLAND TO URBAN	--	-7	-42	-49
AGRICULTURE TO TIMBERLAND	--	--	12	12
TIMBERLAND TO AGRICULTURE	--	--	-33	-33
CHRISTMAS TREES TO TIMBERLAND	--	6	--	6
NET LAND USE CHANGES	--	-8	-98	-106
B. CHANGES IN INVENTORY AREA--				
TO NATIONAL FOREST (LOSSES)	--	-26	--	-26
FROM NATIONAL FOREST (GAINS)	--	23	--	23
TO RESERVED TIMBERLAND (LOSSES)	-5	--	--	-5
NET AREA CHANGES	-5	-4	--	-9
C. CHANGES IN OWNERSHIP--				
FROM OTHER PUBLIC	-17	17	--	--
FROM FOREST INDUSTRY	44	-117	73	--
FROM OTHER PRIVATE	--	14	-14	--
NET OWNERSHIP CHANGES	27	-86	59	--
TIMBERLAND AREA IN 1989	625	961	870	2,456

-- = none found or less than 500 acres.

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

'Negative values are losses of timberland and positive values are gains of timberland. Losses are shown by the 1979 owner and gains are shown by the 1989 owner.

TABLE 31--CHANGES IN VOLUME OF GROWING-STOCK ON PRIVATE AND OTHER PUBLIC  
TIMBERLAND, BY SPECIES AND OWNER CLASS. PUGET SOUND AREA, WASHINGTON 1979-89<sup>a b</sup>

DESCRIPTION	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
<u>MILLION CUBIC FEET<sup>c</sup></u>				
SOFTWOODS:				
TOTAL VOLUME IN 1979	2,256	3,286	1,799	7,342
VOLUME CHANGES BECAUSE OF--				
A. CHANGES IN LAND CLASS--				
TIMBERLAND TO NONFOREST	--	-66	-238	-304
NONFOREST TO TIMBERLAND	--	--	32	33
NET CHANGE	--	-66	-206	-271
B. CHANGES IN INVENTORY AREA--				
TO NATIONAL FOREST		,125		125
FROM NATIONAL FOREST	--	4	--	4
TO RESERVED TIMBERLAND	-18	--	--	-18
NET CHANGE	-18	-121	--	-139
C. CHANGES IN OWNERSHIP--				
FROM OTHER PUBLIC	-27	27	--	--
FROM FOREST INDUSTRY	184	-479	295	--
FROM OTHER PRIVATE	--	62	-62	--
NET CHANGE	157	-389	232	--
D. GROWTH, MORTALITY AND HARVEST				
PERIODIC GROSS GROWTH	955	1,304	850	3,109
PERIODIC MORTALITY	-93	-89	-56	-237
PERIODIC REMOVALS	-436	-1,405	-577	-2,417
NET CHANGE	427	-190	218	455
TOTAL VOLUME IN 1989	2,822	2,523	2,044	7,388
HARDWOODS:				
TOTAL VOLUME IN 1979	374	680	1,199	2,253
VOLUME CHANGES BECAUSE OF--				
A. CHANGES IN LAND CLASS--				
TIMBERLAND TO NONFOREST	--	-6	-137	-144
B. CHANGES IN INVENTORY AREA--				
TO NATIONAL FOREST	--	-2	--	-2
FROM NATIONAL FOREST	--	7	--	7
NET CHANGE	--	5	--	5
C. CHANGES IN OWNERSHIP--				
FROM FOREST INDUSTRY	34	120	86	--
FROM OTHER PRIVATE	--	4	-4	--
NET CHANGE	33	-115	82	--
D. GROWTH, MORTALITY AND HARVEST--				
PERIODIC GROSS GROWTH	152	230	518	900
PERIODIC MORTALITY	-27	-24	-77	-129
PERIODIC REMOVALS	-47	-179	-209	-434
NET CHANGE	79	26	232	337
TOTAL VOLUME IN 1989	487	590	1,375	2,452

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

<sup>a</sup>Totals may be off because of rounding.

<sup>b</sup>Subject to sampling error.

<sup>c</sup>Negative values are losses of volume and positive values are gains of volume. Losses are shown by the 1979 owner and gains are shown by the 1989 owner.

**TABLE 32--CHANGES IN VOLUME OF SAWTIMBER ON PRIVATE AND OTHER PUBLIC TIMBERLAND, BY OWNER, PUGET SOUND AREA, WASHINGTON, 1979-89<sup>a</sup>**

DESCRIPTION	OWNER			
	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERS
<u>MILLION BOARD FEET, SCRIBNER RULE</u>				
SOFTWOODS :				
TOTAL VOLUME IN 1979	8.449	11,928	6,119	26,495
VOLUME CHANGES BECAUSE OF--				
A. CHANGES IN LAND CLASS-- TIMBERLAND TO <b>NONFOREST</b> NONFOREST TO TIMBERLAND	-- --	-290 --	-836 85	-1,126 85
NET CHANGE	--	-290	-751	-1.041
B. CHANGES IN <b>INVENTORY AREA</b> -- TO NATIONAL FOREST TO RESERVED TIMBERLAND	-- -64	-543 --	-- --	-543 -64
NET CHANGE	-64	-543	--	-607
C. CHANGES IN OWNERSHIP-- FROM <del>OTHER</del> PUBLIC FROM FOREST <b>INDUSTRY</b> FROM OTHER PRIVATE	-67 724 --	67 -1,872 192	-- 1.147 -192	-- -- --
NET CHANGE	657	-1,613	955	--
D. GROWTH, MORTALITY, AND <b>HARVEST</b> -- PERIODIC GROSS GROWTH PERIODIC MORTALITY PERIODIC REMOVALS	4,482 -248 -1.936	5,348 -218 -5,905	3,820 -156 -2,356	13,650 -622 -10.197
NET CHANGE	2,298	-776	1,308	2,831
TOTAL VOLUME IN 1989	11,340	8,706	7,632	27,678
HARDWOODS :				
TOTAL VOLUME IN 1979	1,217	2.148	3.715	7,080
VOLUME CHANGES BECAUSE OF--				
A. CHANGES IN LAND CLASS-- TIMBERLAND TO NONFOREST	--	-9	-406	-496
B. CHANGES IN <b>INVENTORY AREA</b> -- TO NATIONAL <b>FOREST</b> FROM NATIONAL FOREST	-- --	-6 13	-- --	-6 13
NET CHANGE	--	8	--	8
C. CHANGES IN OWNERSHIP-- FROM FOREST <b>INDUSTRY</b> FROM OTHER PRIVATE	124 --	-382 11	258 -11	-- --
NET CHANGE	124	-371	247	--
D. <b>GROWTH, MORTALITY, AND HARVEST</b> -- PERIODIC GROSS GROWTH PERIODIC MORTALITY PERIODIC REMOVALS	758 -55 -208	1,013 -42 -739	2,513 -126 -721	4,284 -223 -1,668
NET CHANGE	495	232	1,666	2,393
TOTAL VOLUME IN 1989	1.836	2.008	5.141	8,985

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

<sup>a</sup>Totals may be off because of rounding

<sup>b</sup>Subject to sampling error.

'Negative values are losses of volume and positive values are gains of volume. Losses are shown by the 1979 owner and gains are shown by the 1989 owner.

TABLE 33--TIMBER HARVEST BY OWNER, PUGET SOUND AREA, WASHINGTON, 1955-88

YEAR	OWNER			
	NATIONAL FOREST	OTHER PUBLIC	PRIVATE	ALL OWNERS
<u>MILLION BOARD FEET. SCRIBNER RULE</u>				
1955	202,126	126,266	709,648	1,038,040
1956	207,000	161,273	797,281	1,165,554
1957	237,605	83,414	580,268	901,287
1958	232,436	18,254	532,893	783,583
1959	337,381	86,355	696,161	1,119,897
1960	272,794	61,343	804,257	1,138,394
1961	277,886	56,560	647,240	981,686
1962	342,200	79,608	710,599	1,132,407
1963	345,800	185,940	676,995	1,208,735
1964	402,800	135,401	824,866	1,363,067
1965	393,500	141,332	838,497	1,373,329
1966	318,750	147,859	776,923	1,243,532
1967	333,400	122,021	834,730	1,290,151
1968	323,187	174,294	856,445	1,353,926
1969	313,478	151,110	1,236,835	1,701,423
1970	315,100	132,299	1,074,215	1,521,614
1971	242,655	187,490	1,010,579	1,440,724
1972	326,944	206,641	1,058,422	1,592,007
1973	380,232	133,810	1,146,151	1,660,193
1974	241,709	185,996	1,096,971	1,524,676
1975	168,989	159,475	958,205	1,286,669
1976	233,581	153,556	970,550	1,357,687
1977	217,298	177,824	841,727	1,236,849
1978	254,653	262,141	714,029	1,230,823
1979	274,115	235,609	796,995	1,306,719
1980	217,039	143,255	680,189	1,040,483
1981	150,896	81,940	652,111	884,947
1982	124,181	92,465	759,444	976,090
1983	226,368	117,925	758,777	1,103,070
1984	232,555	177,595	705,107	1,115,257
1985	224,599	240,665	736,076	1,201,340
1986	250,754	236,955	856,258	1,343,967
1987	299,704	253,028	844,860	1,397,592
1988	248,957	221,704	837,457	1,308,118

Source: (State of Washington 1955-88).

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## 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

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This report summarizes a 1989 timber resource inventory of eight counties in the Puget Sound region of Washington: Island, King, Kitsap, Pierce, Skagit, San Juan, Snohomish, and Whatcom. Detailed **tables** of forest area, timber volume, growth, mortality, and harvest are presented.

Keywords: Forest surveys, forest inventory, statistics (forest), timber resources, resources (forest), Puget Sound region, Washington (Puget Sound region).

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