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Timber Resource Statistics for the Puget Sound Area, Washington

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Abstract

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This report summarizes a 1979 timber resource inventory of eight counties in the Puget Sound area of Washington: Island, King, Kitsap, Pierce, San Juan, Skagit, Snohomish, and Whatcom. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

KEYWORDS: Forest surveys, statistics (forest), timber resources, resources (forest), Washington (Puget Sound).

Summary

The Puget Sound, Washington, resource area (Island, King, Kitsap, Pierce, San Juan, Skagit, Snohomish, and Whatcom Counties) totals 6,553,000 acres (2 652 000 ha), of which an estimated 4,481,000 acres (1 813 000 ha) are forested. An estimated 3,462,000 acres (1 401 000 ha) are classified as timberland. The area has an estimated 15.5 billion cubic feet (440 million m3) of standing timber with 52 percent of this volume in public ownership.

Preface

Renewable Resources Evaluation (formerly Forest Survey) 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 Experiment Stations, conduct forest inventories throughout the 50 States. The Pacific Northwest Forest and Range Experiment Station at Portland, Oregon, is responsible for inventories in the States of Alaska, California, Hawaii, Oregon, and Washington.

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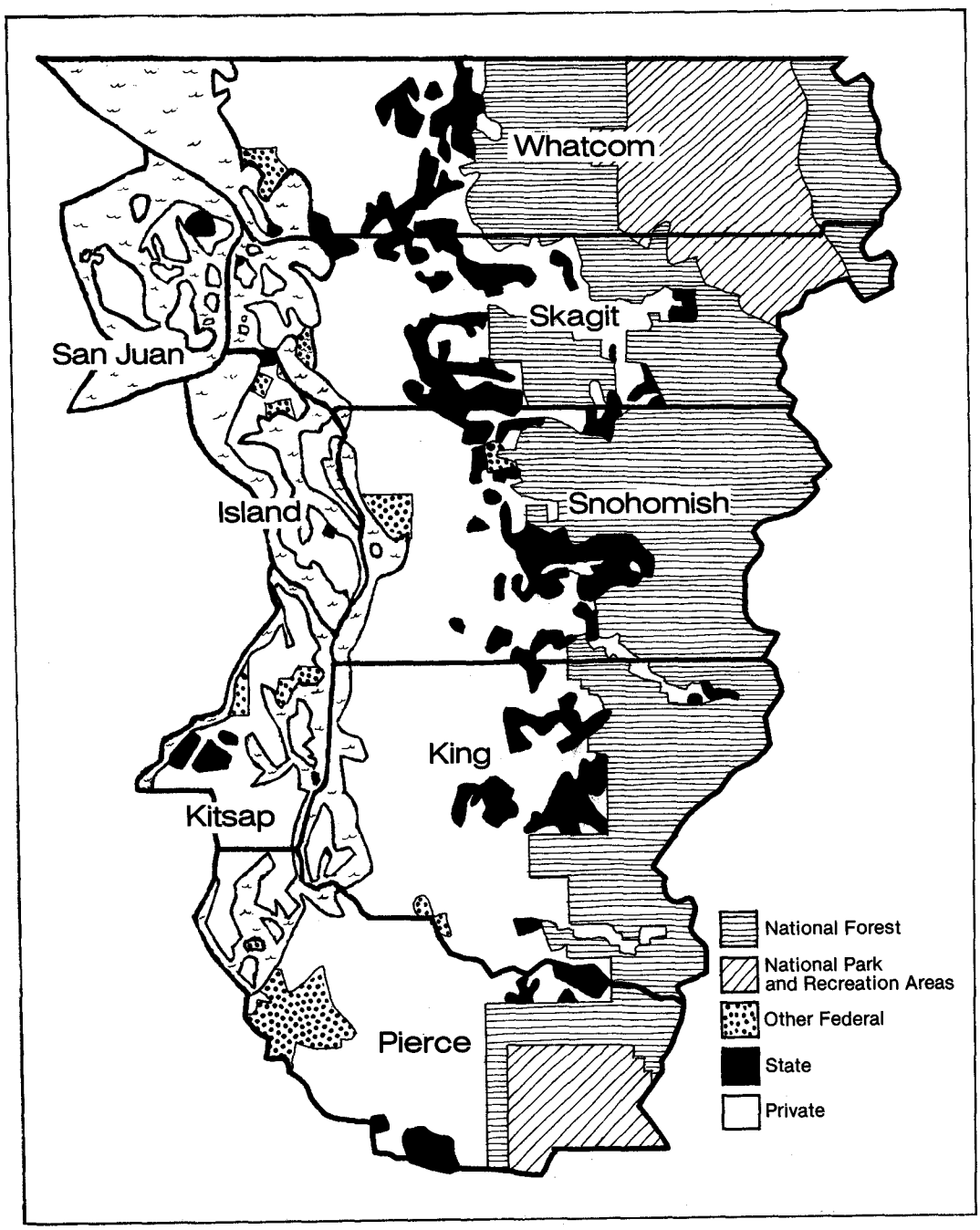
Map of the Puget Sound Area, Washington



This report presents statistics from the latest inventory of timber resources for eight counties in Washington's Puget Sound area: Island, King, Kitsap, Pierce, San Juan, Skagit, Snohomish, and Whatcom. Previous inventories of the Puget Sound area were made in 1931-33, 1955-60, and 1966-67. King, Kitsap, and Pierce Counties were also inventoried in 1938-41.

Field data for all lands except National Forests were collected in the summer and fall of 1979 by the Renewable Resources Evaluation Work Unit (RRE) of the Pacific Northwest Forest and Range Experiment Station. National Forest inventory data included in this report are for all lands administered by the Mount Baker-Snoqualmie National Forest and were collected in 1976 by National Forest personnel.

Scientific names of trees (Little 1978) are listed on page 10 of this report.

This report of forest resources in Washington's Puget Sound area combines inventory data from two sources: (1) a 1976 inventory of the Mount Baker-Snoqualmie National Forest; (2) an inventory of State, county, municipal, Indian trust, and private forest lands conducted by RRE in the summer and fall of .1979.

In the Mount Baker-Snoqualmie National Forest, all areas of timberland, other forest land, reserved lands, and nonforest land were mapped by delineation on aerial photos. Timberland areas were systematically sampled with 380 field plots, arranged in a 1.7-mile (2 736-m) square grid. the field plots, each a cluster of ten variable-radius points distributed over about 1 acre (0.4 ha), are the basis for estimates of timber volume, growth, mortality, and area attributes such as forest type, site class, and stand size class.'

For all lands other than National Forest, the sampling design used was double sampling for stratification (Cochran 1963.) A total of 8,551 photo points were classified to estimate area by owner group, major land class (timberland, other forest, nonforest), and stand volume class. We visited 547 field plots, located on a 3.4-mile (5 473-m) square grid, to correct the photo sample and to determine forest characteristics. On timberland locations, part of the 1966 10-point cluster plot was remeasured to determine growth and mortality. At the same general location, a new 5-point cluster plot, spread over about 8 acres (3 ha), was established to determine current volume, growth, and condition of the forest stand (MacLean 1980).

'Resource Planning and Timber Management staffs, Mount Baker-Snoqualmie and Olympic National Forests. Region 6 area one timber inventory project plan (2410). 1974. Unpublished report. 40 pages.

The timberland area of the Mount Baker-Snoqualmie National Forest was determined from mapping and is not subject to sampling error. With that exception, all area and volume statistics reported are based on sampling and are subject to sampling error. Confidence intervals (0.68 probability level) for the estimated timberland area, cubic-foot volume, and net annual cubic-foot growth by ownership class are as follows:

Owner	Timberland area	Net volume	Net annual growth
	Thousand acres	*Million cubic feet*	
National Forest	835 ± 0	5,132 ± 121	13 ± 2
Other public	628 ± 20	2,964 ± 295	104 ± 9
Forest industry	998 ± 25	3,686 ± 252	146 ± 11
Other private	1,001 ± 35	3,746 ± 231	140 ± 9
All owners	3,462 ± 42	15,529 ± 458	413 ± 16

Confidence intervals are quantitative expressions of the reliability of the timberland area, volume, and growth statistics. The above tabulation, for instance, indicates a two-in-three chance that there are between 3,420,000 and 3,504,000 acres of timberland in the Puget Sound area, Washington.

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

	Confidence interval for other than National Forest land	
Timberland area	By owner [2]	By type or class [2 3]
	Thousand acres	
1,000	± 23	± 71
800	± 21	± 65
600	± 18	± 57
400	± 15	± 47
200	± 11	± 35
100	± 7	± 25
50	± 5	± 19
25	± 3	± 14
15	± 2	± 11
10	± 1	± 10
5	± 1	± 5

Confidence intervals

For net volume estimates of various sizes[2]			For net annual growth estimates of various sizes[2]		
	Other than National Forest	National Forest		Other than National Forest	National Forest
Million cubic feet			*Thousand cubic feet*		
4,000	± 282	± 118	150,000	± 10,200	
2,000	± 205	± 88	100,000	± 8,300	
1,000	± 146	± 65	50,000	± 5,700	
800	± 130	± 59	25,000	± 4,000	
600	± 112	± 51	15,000	± 3,200	
400	± 89	± 42	10,000	± 2,600	
200	± 58	± 30	5,000	± 1,800	± 1,100
100	± 29	± 21	1,000	± 600	± 400
50	± 20	± 13	500	± 300	± 200
25	± 14	± 9	100	± 100	± 100
15	± 10	± 7			
10	± 7	± 5			
5	± 4	± 3			

Actual confidence intervals have been calculated for most of the tabular data in this report; they are available on request.

[2]Constant variance is assumed.

[3]Applies to breakdowns of the total estimated timberland areas such as site class, stand size class, and forest type.

Terminology

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

Codominant trees-Live trees with crowns forming the general level of the crown canopy and receiving full light from above but comparatively little from the sides; usually with mediumsize crowns more or less crowded on the sides.

Commercial species-A tree species suitable for industrial wood products.

Cull trees-Live trees of noncommercial species, or live trees of commercial species that are more than 75 percent defective and are unlikely to become growing stock.

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, roughness, etc.

Diameter class-A classification of trees based on diameter outside bark measured at breast height, 4-1/2 feet (1.37 m) above the ground. D.b.h. is the common abbreviation for "diameter at breast height."

Dominant trees-Live trees with crowns extending above the general level of the crown canopy and receiving full light from above and partly from the side; larger than the average trees in the stand and with crowns dense, comparatively wide and long, but somewhat crowded on the sides.

Forest-industry lands-Lands owned by companies or individuals operating wood-using 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.

Forest types-Stands with 50 percent or more stocking in live conifer trees are classed as softwood types. Stands with a majority of stocking in live hardwood trees are classed as hardwood types. Within these two groups, the individual forest type is determined by plurality of stocking by species of live softwood or hardwood trees.

Growing stock trees-All live trees with the exception of cull trees.

Growing stock volume-Net volume in cubic feet of live sawtimber and poletimber growing stock trees from stump to a minimum 4-inch (10-cm) top (of central stem) outside bark. Net volume equals gross volume less deduction for rot and missing bole sections.

Hardwoods-Trees that are angio-sperms, usually broad-leaved and deciduous.

Industrial wood-All commercial roundwood products except fuelwood.

International 1/4-inch rule-The standard board-foot for . ale adopted nationally by the USDA Forest Service for the pre^3ntation of inventory volume statistics.

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 1/8-mile (200 m) wide; and lakes, reservoirs, and ponds less than 40 acres (16 ha) in area.

Land class-A classification of land by major use. The minimum size area for classification is 1 acre (0.4 ha).

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 number of years needed for the mean annual increment to culminate in fully stocked stands.

Mortality-Volume of sound wood in trees dying from natural causes during a specified period.

National Forest lands-Federal lands which have been designated by Executive order or statute as National Forest or purchase units and other lands under the administration of the Forest Service, including experimental areas and Bankhead-Jones Title III lands.

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

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, improved roads, operating railroads and their right-of-way clearings, powerline and pipeline clearings, streams over 30 feet (10 m) wide, and 1- to 40-acre (0.4- to 16-ha) areas of water classified by the Bureau of the Census as land. If intermingled in forest areas, unimproved roads and other nonforest strips must be more than 120 feet (35 m) wide, and clearings or other areas must be 1 acre (0.4 ha) or larger in size 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 private lands-All privately owned lands except those classed as forest-industry lands.

Other private lands, farmer-Lands owned by operators of farms.

Other private lands, miscellaneous--Privately owned lands other than those owned by the forest industry or farmers.

Other public lands-Lands administered by public agencies other than the Forest Service.

PoletImber stands-Stands with a mean diameter (weighted by basal area) from 5.0-9.0 inches (12.522.5 cm) if s oftwood and from 5.011.0 inches (12.5-27.5 cm) if hardwood.

Poletimber trees-Live trees of commercial species at least 5.0 inches (12.5 cm) in d.b.h. but smaller than sawtimber size, and of good form and vigor.

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

Salvable dead trees-Standing or down trees of commercial species, at least9.0 inches (22.5cm) in d.b.h.forsoftwoods and at least 11.0 inches (27.5 cm) in d.b.h. for hardwoods, containing 25 percent or more sound wood volume and at least one merchantable 12-foot (3.8-m) log if softwood or one merchantable 8-foot (2.5-m) log if hardwood.

Sapling and seedling stands-Stands with a mean diameter (weighted by basal area) less than 5.0 inches (12.5 cm).

Sapling and seedling trees - Live trees of commercial species less than 5 inches (12.5 cm) in d.b.h. with no disease, 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 (22.5 cm) if softwood and larger than 11.0 inches (27.5 cm) if hardwood.

Sawtimber trees - Live softwood trees of commercial species at least 9.0 inches (22.5 cm) in d.b.h. and hardwood trees of commercial species at least 11.0 inches (27.5 cm) 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 (3.8-m) saw log with a top diameter of not less than 6 inches (15 cm) inside bark; hardwood trees must contain at least one 8-foot (2.5 -m) saw log with a top diameter of not less than 8 inches (20 cm) inside bark.

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

Scribner rule - The common boardfoot log rule used locally in determining volume of sawtimber. Scribner volume is estimated in terms of 32-foot (10-m) logs for softwoods and 16-foot (5-m) 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.

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 (10-cm) top outside bark.

Timberland - Forest land capable of producing 20 cubic feet or more per acre (1.4 m3/ha) per year of industrial wood, and not withdrawn from timber utilization.

Timberland, deferred - National Forest timberland temporarily withdrawn from timber utilization and under study for possible inclusion in the wilderness system.

Timberland, reserved - Public land withdrawn from timber utilization through statute, ordinance, or administrative order but which otherwise qualifies as timberland.

Upper stem portion - The bole of sawtimber trees above the saw log top - 7.0 inches (18 cm) outside bark for softwoods and 9.0 inches (23 cm) outside bark for hardwoods - to a minimum top diameter of 4.0 inches (10 cm) outside bark, or to the point where the central stem breaks into limbs.

Acknowledgments

This inventory was completed with the cooperation and assistance of many organizations and individuals. The Washington Department of Natural Resources, a cooperator, prepared maps and aerial photos for use in the inventory, and developed equations for estimation of tree volumes; county assessors provided ownership information; the Pacific Northwest Region, USDA Forest Service, and the Mount Baker-Snoqualmie National Forest provided forest resource inventory data; timber companies and many individual landowners allowed access to their forest lands.

Metric Equivalents

1,000 acres = 404.7 hectares (ha) 1,OOOcubicfeet=28.3cubic meters (m3) 1 cubic foot per *acre* = 0.07 cubic *meter per hectare* (m3/ha) 1 foot = 0.3048 meter (m) 1 inch = 2.54 centimeters (cm) 1 mile = 1.609 kilometers (km)

Names of Trees

Common Name	Scientific name
Softwoods	
Alaska-cedar	*Chamaecyparis nootkatensis* (D. Don) Spach
Douglas-fir	*Pseudotsuga menziesii* (Mirb.) Franco
Fir, grand	*Abies grandis* (Dougl.) Lindl.
Fir, noble	*A. procera* Rehd.
Fir, Pacific silver	*A. amabilis* Dougl. ex Forbes
Fir, subalpine	*A. lasiocarpa* (Hook.) Nutt.
Hemlock, mountain	*Tsuga mertensiana* (Bong.) Carr.
Hemlock, western	*T. heterophylla* (Raf.) Sarg.
Pine, lodgepole	*Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm.
Pine, western white	*P. monticola* Dougl. ex D. Don
Redcedar, western	*Thuja plicata* Donn ex D. Don
Spruce, Engelmann	*Picea engelmannii* Parry ex Engelm.
Spruce, sitka	*P. sitchensis* (Bong.) Carr.
Hardwoods	
Alder, red	*Alnus rubra* Bong.
Ash, Oregon	*Fraxinus latifolia* Benth.
Birch, western paper	*Betula papyrifera* var. *commutata* (Reg.) Fern.
Cottonwood, black	*P. trichocarpa* Torr. & Gray
Madrone, Pacific	*Arbutus menziesii* Pursh
Maple, bigleaf	*Acer macrophyllum* Pursh
Willow	*Salix* spp.

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Tables

Estimates in this report are developed from statistically based samples and therefore are subject to sampling error. Approximate confidence intervals for estimates of various sizes are presented in the section "Reliability of Inventory Data."

Table 1—Area by land class and county, Puget Sound area, Washington, January 1, 1980[1]/

LAND CLASS	ISLAND	KING	KITSAP	PIERCE	SAN JUAN	SKAGIT	SNOHOMISH	WHATCOM	ALL COUNTIES
					THOUSAND HECTARES				
FOREST LAND:									
TIMBERLAND	31	329	66	238	27	245	284	183	1 401
TIMBERLAND, DEFERRED	--	4	--	--	--	6	31	--	41
TIMBERLAND, RESERVED	2/	18	2/	37	1	21	27	52	157
OTHER FOREST	1	32	1	37	2	32	39	71	214
TOTAL	32	384	67	312	30	304	380	306	1 813
NONFOREST LAND 3/4/	23	167	35	122	17	131	165	179	839
ALL LANDS 5/6/	55	551	102	434	47	435	545	485	2 652
					THOUSAND ACRES				
FOREST LAND:									
TIMBERLAND	76	812	162	589	66	606	701	451	3,462
TIMBERLAND, DEFERRED	--	11	--	--	--	14	77	--	102
TIMBERLAND, RESERVED	1	45	1	91	3	52	66	128	387
OTHER FOREST	2	80	2	91	4	78	96	175	528
TOTAL	78	948	165	771	73	751	940	755	4,481
NONFOREST LAND 3/4/	58	413	86	302	42	323	407	443	2,074
ALL LANDS 5/6/	135	1,361	251	1,073	115	1,074	1,346	1,198	6,553

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Less than 500 hectares.

3/Includes cropland, pasture and range, swampland, industrial and urban areas, powerline clearings, railroads, and all improved roads and highways, and water as classified by Renewable Resources Evaluation standards but defined by the Bureau of Census as land.

4/Includes 21,000 acres (8 500 ha) of land managed for Christmas tree production.

5/Source: United States Bureau of the Census, Land and Water Area of the United States, 1960.

6/Includes all land administered by the Mount Baker-Snoqualmie National Forest. Excludes approximately 160,000 acres (65 000 ha) in Whatcom County and 37,000 acres (15 000 ha) in Skagit County administered by the Okanogan National Forest, and 10,000 acres (4 000 ha) in Pierce County administered by the Gifford Pinchot National Forest.

Table 2—Area of timberland by ownership class and county, Puget Sound area, Washington, January 1, 1980[1]/

OWNERSHIP CLASS	ISLAND	KING	KITSAP	PIERCE	SAN JUAN	SKAGIT	SNOHOMISH	WHATCOM	ALL COUNTIES
					THOUSAND ACRES				
PUBLIC:									
NATIONAL FOREST	—	153	—	99	—	166	235	182	835
OTHER PUBLIC—									
INDIAN	2/	—	2	—	—	3	6	7	18
OTHER FEDERAL	1	4	6	38	2	2	14	2/	67
STATE	7	60	19	39	1	119	114	70	429
COUNTY AND MUNICIPAL	1	79	12	6	1	5	8	3	115
TOTAL	9	296	39	181	4	295	378	262	1,464
PRIVATE:									
FOREST INDUSTRY	4	326	26	239	—	194	124	85	998
OTHER PRIVATE—									
FARMER	11	20	8	18	5	9	13	12	96
MISCELLANEOUS	51	171	90	151	57	107	185	92	905
TOTAL	66	517	124	408	62	310	322	189	1,998
ALL OWNERSHIPS	76	812	162	589	66	606	701	451	3,462

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Less than 500 acres.

Table 3—Area of timberland by cubic-foot site and ownership classes, Puget Sound area, Washington, January 1, 1980[1]/

SITE CLASS 2/	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
CUBIC FEET			THOUSAND ACRES		
225 OR MORE	22	60	82	22	185
165 TO 224	171	138	306	233	848
120 TO 164	269	267	300	321	1,157
85 TO 119	234	114	195	302	845
50 TO 84	129	34	85	89	337
20 TO 49	9	17	30	34	91
ALL CLASSES	835	628	998	1,001	3,462

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Capacity for cubic-foot annual growth per acre at culmination of mean annual growth in fully stocked natural stands.

Table 4—Area of timberland by stand size and ownership classes, Puget Sound area, Washington, January 1, 1980[1]/

STAND SIZE CLASS	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND HECTARES		
SAWTIMBER STANDS:					
LARGE SAWTIMBER 2/	149	17	21	13	200
SMALL SAWTIMBER 3/	102	146	180	208	635
TOTAL	251	163	201	221	836
POLETIMBER STANDS	8	38	79	135	259
SAPLING AND SEEDLING STANDS	57	47	122	40	267
NONSTOCKED AREAS	22	6	2	9	40
ALL CLASSES	338	254	404	405	1 401
			THOUSAND ACRES		
SAWTIMBER STANDS:					
LARGE SAWTIMBER 4/	368	42	51	32	493
SMALL SAWTIMBER 5/	251	360	445	514	1,569
TOTAL	619	402	496	546	2,063
POLETIMBER STANDS	20	94	194	334	641
SAPLING AND SEEDLING STANDS	142	117	302	98	659
NONSTOCKED AREAS	55	16	6	23	100
ALL CLASSES	835	628	998	1,001	3,462

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Large sawtimber includes trees 52.5-centimeter d.b.h. and larger.

3/Small sawtimber includes softwood trees 22.5- to 52.4-centimeter d.b.h. and hardwood trees 27.5- to 52.4-centimeter d.b.h.

4/Large sawtimber includes trees 21.0-inch d.b.h. and larger.

5/Small sawtimber includes softwood trees 9.0- to 20.9-inch d.b.h. and hardwood trees 11.0- to 20.9-inch d.b.h.

Table 5—Area of timberland by forest type and ownership class, Puget Sound area, Washington, January 1, 1980[1]/

FOREST TYPE	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND ACRES		
DOUGLAS-FIR	161	303	377	360	1,202
WESTERN HEMLOCK	248	108	301	43	700
PACIFIC SILVER FIR	316	69	52	--	437
WESTERN REDCEDAR	13	7	35	63	118
MOUNTAIN HEMLOCK	24	5	39	--	68
GRAND FIR	--	--	--	16	16
NOBLE FIR	--	--	10	--	10
SUBALPINE FIR	5	--	--	--	5
ALASKA-CEDAR	2	--	--	--	2
RED ALDER	6	104	163	413	686
MAPLE	5	--	14	49	69
COTTONWOOD	--	8	--	14	22
MADRONE	--	--	--	6	6
OTHER HARDWOODS	--	--	--	6	6
NONCOMMERCIAL HARDWOODS	--	7	--	8	15
UNCLASSIFIED 2/	55	16	6	23	100
ALL TYPES	835	628	998	1,001	3,462

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Unclassified type is less than 10 percent stocked with live trees.

Table 6—Area of reserved and deferred timberland and other forest land by land class, forest type, and ownership class, Puget Sound area, Washington, January 1, 1980[1/] [2/]

LAND CLASS AND FOREST TYPE	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND ACRES		
TIMBERLAND, RESERVED:					
DOUGLAS-FIR	--	106	--	--	106
HEMLOCK	--	55	--	--	55
PACIFIC SILVER FIR 3/	123	44	--	--	167
GRAND FIR	--	45	--	--	45
LODGEPOLE PINE	--	1	--	--	1
SPRUCE	--	4/	--	--	4/
CEDAR	--	4	--	--	4
RED ALDER	--	3	--	--	3
HARDWOODS	--	4	--	--	4
ALL TIMBERLAND, RESERVED	123	264	--	--	387
TIMBERLAND, DEFERRED:					
DOUGLAS-FIR	55	--	--	--	55
PACIFIC SILVER FIR 3/	47	--	--	--	47
ALL TIMBERLAND, DEFERRED	102	--	--	--	102
OTHER FOREST LAND:					
DOUGLAS-FIR	59	--	--	--	59
HEMLOCK-SITKA SPRUCE	115	--	--	--	115
FIR-SPRUCE	5	--	--	--	5
HARDWOODS	54	--	--	--	54
WILLOW	--	--	--	8	8
UNCLASSIFIED 5/	2	252	33	--	287
ALL OTHER FOREST LAND 6/	235	252	33	8	528

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Area of timberland by forest type and ownership class is presented in table 5.

3/Includes fir-spruce type for National Forest.

4/Less than 500 acres.

5/Information on forest type not available.

6/Includes 305,000 acres of reserved areas.

Table 7—Volume of timber on timberland by class of timber and by softwoods and hardwoods, Puget Sound area, Washington, January 1, 1980[1]/

CLASS OF TIMBER	SOFTWOODS	HARDWOODS	ALL SPECIES
		MILLION CUBIC FEET	
SAWTIMBER TREES:			
SAW LOG PORTION	11,601	1,462	13,064
UPPER STEM PORTION	333	198	531
TOTAL	11,935	1,660	13,595
POLETIMBER TREES	1,112	821	1,934
ALL GROWING STOCK	13,048	2,481	15,529
SOUND CULL TREES	41	116	157
ROTTEN CULL TREES	80	37	117
SALVABLE DEAD TREES	336	6	341
ALL TIMBER	13,505	2,639	16,144

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

Table 8—Volume of growing stock and sawtimber on timberland by ownership class and by softwoods and hardwoods, Puget Sound area, Washington, January 1, 1980[1/]

OWNERSHIP CLASS	AVERAGE VOLUME	SOFTWOODS	HARDWOODS	ALL SPECIES
	CUBIC METERS PER HECTARE	- - - - MILLION CUBIC METERS - - - -		
GROWING STOCK: 2/				
NATIONAL FOREST	430	143	2	145
OTHER PUBLIC	330	71	13	84
FOREST INDUSTRY	258	87	17	104
OTHER PRIVATE	262	68	38	106
ALL OWNERSHIPS	314	370	70	440
	CUBIC FEET PER ACRE	- - - - - MILLION CUBIC FEET - - - -		
GROWING STOCK: 3/				
NATIONAL FOREST	6,146	5,064	68	5,132
OTHER PUBLIC	4,720	2,494	470	2,964
FOREST INDUSTRY	3,693	3,086	601	3,686
OTHER PRIVATE	3,742	2,403	1,343	3,746
ALL OWNERSHIPS	4,485	13,048	2,481	15,529
	BOARD FEET PER ACRE	- - - - MILLION BOARD FEET - - - -		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE): 4/				
NATIONAL FOREST	35,601	29,454	274	29,727
OTHER PUBLIC	24,062	13,282	1,829	15,111
FOREST INDUSTRY	18,100	15,890	2,174	18,064
OTHER PRIVATE	17,337	12,549	4,805	17,354
ALL OWNERSHIPS	23,182	71,175	9,082	80,256
SAWTIMBER (SCRIBNER RULE): 4/				
NATIONAL FOREST	28,431	23,559	181	23,740
OTHER PUBLIC	17,583	9,501	1,541	11,042
FOREST INDUSTRY	13,040	11,194	1,820	13,014
OTHER PRIVATE	12,675	8,630	4,059	12,688
ALL OWNERSHIPS	17,471	52,883	7,601	60,484

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Includes trees 12.5-centimeter d.b.h. and larger.

3/Includes trees 5.0-inch d.b.h. and larger.

4/Includes softwood trees 9.0-inch d.b.h. and larger and hardwood trees 11.0-inch d.b.h. and larger.

Table 9—Volume of growing stock and sawtimber on timberland by county and ownership class, Puget Sound area, Washington, January 1, 1980 1/

COUNTY	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION CUBIC METERS		
GROWING STOCK: 2/					
ISLAND	--	1	1	6	8
KING	20	15	34	19	88
KITSAP	--	6	3	11	20
PIERCE	22	10	21	17	71
SAN JUAN	--	3/	--	6	6
SKAGIT	29	18	22	13	82
SNOHOMISH	47	22	16	24	108
WHATCOM	27	10	8	10	55
ALL COUNTIES	145	84	104	106	440
			MILLION CUBIC FEET		
GROWING STOCK: 4/					
ISLAND	--	51	22	216	289
KING	699	545	1,203	664	3,111
KITSAP	--	198	114	400	712
PIERCE	788	362	752	604	2,506
SAN JUAN	--	12	--	212	224
SKAGIT	1,036	643	772	460	2,911
SNOHOMISH	1,653	788	551	839	3,831
WHATCOM	956	365	273	352	1,946
ALL COUNTIES	5,132	2,964	3,686	3,746	15,529
			MILLION BOARD FEET		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE): 5/					
ISLAND	--	284	114	996	1,394
KING	3,806	2655	5,799	2,973	15,233
KITSAP	--	1,052	560	1,915	3,527
PIERCE	4,331	1,788	3,597	2,789	12,505
SAN JUAN	--	56	--	974	1,030
SKAGIT	6,254	3,264	3,887	2,156	15,561
SNOHOMISH	9,657	4,172	2,788	4,034	20,651
WHATCOM	5,679	1,840	1,319	1,517	10,355
ALL COUNTIES	29,727	15,111	18,064	17,354	80,256
SAWTIMBER (SCRIBNER RULE): 5/					
ISLAND	--	211	85	730	1,026
KING	2,977	1,916	4,145	2,185	11,223
KITSAP	--	783	402	1,393	2,578
PIERCE	3,387	1,290	2,574	2,035	9,286
SAN JUAN	--	41	--	688	729
SKAGIT	5,056	2,373	2,831	1,579	11,839
SNOHOMISH	7,769	3,082	2,013	2,944	15,808
WHATCOM	4,551	1,346	963	1,134	7,994
ALL COUNTIES	23,740	11,042	13,014	12,688	60,484

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Includes trees 12.5-centimeter d.b.h. and larger.

3/Less than 500,000 cubic meters.

4/Includes trees 5.0-inch d.b.h. and larger.

5/Includes softwood trees 9.0-inch d.b.h. and larger and hardwood trees 11.0-inch d.b.h. and larger.

Table 10—Volume of growing stock on timberland by species and ownership class, Puget Sound area, Washington, January 1, 1980[1/]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	1,125	1,365	961	1,534	4,986
WESTERN HEMLOCK	1,568	576	1,152	476	3,771
PACIFIC SILVER FIR	1,498	317	435	14	2,263
WESTERN REDCEDAR	403	200	270	299	1,171
MOUNTAIN HEMLOCK	279	21	205	--	505
NOBLE FIR	84	5	5	--	93
ALASKA-CEDAR	58	5	17	--	80
GRAND FIR	4	--	11	51	66
SITKA SPRUCE	4	5	22	24	55
SUBALPINE FIR	34	--	--	--	34
LODGEPOLE PINE	--	--	4	8	11
WESTERN WHITE PINE	3	2	4	--	9
ENGELMANN SPRUCE	3	--	--	--	3
TOTAL	5,064	2,494	3,086	2,403	13,048
HARDWOODS:					
RED ALDER	43	301	460	923	1,726
BIGLEAF MAPLE	18	115	82	242	457
BLACK COTTONWOOD	7	34	42	109	193
WESTERN PAPER BIRCH	--	10	14	23	47
PACIFIC MADRONE	--	10	--	19	29
OREGON ASH	--	--	2	27	29
TOTAL	68	470	601	1,343	2,481
ALL SPECIES	5,132	2,964	3,686	3,746	15,529

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

Table 11—Volume of sawtimber, International 1/4-inch rule, on timberland by species and ownership class, Puget Sound area, Washington, January 1, 1980[1/]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION BOARD FEET		
SOFTWOODS:					
DOUGLAS-FIR	5,774	7,600	5,111	8,080	26,564
WESTERN HEMLOCK	9,378	2,599	5,449	2,404	19,830
PACIFIC SILVER FIR	9,120	1,971	2,451	87	13,629
WESTERN REDCEDAR	2,398	920	1,297	1,567	6,182
MOUNTAIN HEMLOCK	1,651	119	1,237	--	3,007
NOBLE FIR	540	24	26	--	591
ALASKA-CEDAR	331	24	86	--	441
GRAND FIR	28	--	69	251	347
SITKA SPRUCE	30	26	125	146	326
SUBALPINE FIR	171	--	--	--	171
LODGEPOLE PINE	--	--	16	15	30
WESTERN WHITE PINE	18	--	24	--	42
ENGELMANN SPRUCE	15	--	--	--	15
TOTAL	29,454	13,282	15,890	12,549	71,175
HARDWOODS:					
RED ALDER	173	1,160	1,598	2,997	5,929
BIGLEAF MAPLE	54	432	311	962	1,758
BLACK COTTONWOOD	47	169	245	627	1,087
WESTERN PAPER BIRCH	--	32	14	37	83
PACIFIC MADRONE	--	36	--	54	90
OREGON ASH	--	--	7	127	134
TOTAL	274	1,829	2,174	4,805	9,082
ALL SPECIES	29,727	15,111	18,064	17,354	80,256

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

Table 13—Volume of growing stock on timberland by species and diameter class, Puget Sound area, Washington, January 1, 1980 1/

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 AND LARGER	ALL CLASSES
	MILLION CUBIC FEET										
SOFTWOODS:											
DOUGLAS-FIR	129	258	380	481	568	449	436	448	943	895	4,986
WESTERN HEMLOCK	181	277	385	363	343	336	271	196	582	837	3,771
PACIFIC SILVER FIR	45	76	81	86	126	124	138	141	614	834	2,263
WESTERN REDCEDAR	46	69	91	84	74	85	72	72	192	387	1,171
MOUNTAIN HEMLOCK	2	5	6	11	19	23	30	37	139	232	505
NOBLE FIR	1	1	2	6	2	1	7	3	25	47	93
ALASKA-CEDAR	1	1	2	3	3	5	3	6	19	36	80
GRAND FIR	3	5	4	3	4	7	8	5	14	12	66
SITKA SPRUCE	2/	1	5	4	5	4	7	--	6	22	55
SUBALPINE FIR	1	2	1	4	3	5	3	5	9	1	34
LODGEPOLE PINE	2	3	1	2	3	--	--	--	--	--	11
WESTERN WHITE PINE	1	1	1	--	--	--	2/	1	4	1	9
ENGELMANN SPRUCE	--	--	--	--	2/	1	1	2/	1	--	3
TOTAL	412	701	959	1,046	1,151	1,041	975	913	2,546	3,305	13,048
HARDWOODS:											
RED ALDER	88	204	334	339	290	223	114	70	61	3	1,726
BIGLEAF MAPLE	20	38	73	54	61	60	46	18	59	29	457
BLACK COTTONWOOD	1	7	9	12	15	28	25	29	48	21	193
WESTERN PAPER BIRCH	4	17	9	8	7	2	--	1	--	--	47
PACIFIC MADRONE	2	4	6	4	3	6	2	--	2	1	29
OREGON ASH	2/	2	4	5	4	6	1	3	4	1	29
TOTAL	115	272	434	422	378	324	188	121	174	53	2,481
ALL SPECIES	527	973	1,393	1,468	1,529	1,365	1,163	1,034	2,720	3,358	15,529

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Less than 500,000 cubic feet.

Table 12—Volum
Washington, Jan
SPECIES
SOFTWOODS:
DOUGLAS-FIR
WESTERN HEM
PACIFIC SIL
WESTERN RED
MOUNTAIN HE
NOBLE FIR
ALASKA-CEDA
GRAND FIR
SITKA SPRUC
SUBALPINE F
LODGEPOLE P
WESTERN WHI
ENGELMANN S
TOTAL
HARDWOODS:
RED ALDER
BIGLEAF MAP
BLACK COTTO
WESTERN PAP
PACIFIC MAD
OREGON ASH
TOTAL
ALL SPECIES
Estimates are
1/Totals may

Table 14—Volume of sawtimber, International 1/4-inch rule, on timberland by species and diameter class, Puget Sound area, Washington, January 1, 1980[1/]

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 AND LARGER	ALL CLASSES
	MILLION BOARD FEET								
SOFTWOODS:									
DOUGLAS-FIR	1,757	2,545	3,224	2,611	2,614	2,741	5,825	5,249	26,564
WESTERN HEMLOCK	1,781	1,861	1,820	1,842	1,512	1,096	3,548	6,371	19,830
PACIFIC SILVER FIR	376	451	715	743	854	878	3,987	5,625	13,629
WESTERN REDCEDAR	392	421	398	480	418	423	1,160	2,491	6,182
MOUNTAIN HEMLOCK	23	53	96	122	172	213	832	1,496	3,007
NOBLE FIR	7	30	12	8	40	21	160	313	591
ALASKA-CEDAR	10	13	14	27	17	33	109	218	441
GRAND FIR	20	14	26	42	47	31	89	79	347
SITKA SPRUCE	23	22	27	26	39	--	40	147	326
SUBALPINE FIR	3	18	18	28	17	30	49	8	171
LODGEPOLE PINE	6	11	14	--	--	--	--	--	30
WESTERN WHITE PINE	5	--	--	--	1	3	25	8	42
ENGELMANN SPRUCE	--	--	1	5	3	3	4	--	15
TOTAL	4,403	5,439	6,364	5,931	5,735	5,470	15,827	22,005	71,175
HARDWOODS:									
RED ALDER	--	1,566	1,587	1,301	674	419	366	17	5,929
BIGLEAF MAPLE	--	248	319	340	247	98	342	164	1,758
BLACK COTTONWOOD	--	61	84	168	160	185	302	127	1,087
WESTERN PAPER BIRCH	--	32	36	10	--	6	--	--	83
PACIFIC MADRONE	--	17	13	33	10	--	14	4	90
OREGON ASH	--	26	21	32	6	19	22	8	134
TOTAL	--	1,950	2,060	1,884	1,096	727	1,046	320	9,082
ALL SPECIES	4,403	7,388	8,424	7,815	6,831	6,197	16,873	22,325	80,256

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

Table 15—Volume of sawtimber, Scribner rule, on timberland by species and diameter class, Puget Sound area, Washington, January 1, 1980 1/

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 AND LARGER	ALL CLASS
	MILLION BOARD FEET								
SOFTWOODS:									
DOUGLAS-FIR	1,019	1,599	2,140	1,791	1,858	1,985	4,367	4,314	19,07
WESTERN HEMLOCK	1,034	1,182	1,224	1,286	1,096	812	2,757	5,463	14,85
PACIFIC SILVER FIR	200	276	470	518	621	659	3,183	4,845	10,77
WESTERN REDCEDAR	212	244	239	303	271	276	793	2,050	4,38
MOUNTAIN HEMLOCK	11	30	60	82	120	152	632	1,222	2,31
NOBLE FIR	4	19	8	5	29	16	127	271	47
ALASKA-CEDAR	6	7	8	18	12	23	82	179	33
GRAND FIR	12	8	17	28	33	22	67	65	25
SITKA SPRUCE	13	14	19	18	26	--	30	119	23
SUBALPINE FIR	2	11	12	19	13	23	38	6	12
LODGEPOLE PINE	3	7	9	--	--	--	--	--	1
WESTERN WHITE PINE	3	--	--	--	1	3	20	7	3
ENGELMANN SPRUCE	--	--	1	3	2	2	3	--	1
TOTAL	2,519	3,397	4,206	4,071	4,080	3,973	12,097	18,541	52,88
HARDWOODS:									
RED ALDER	--	1,232	1,307	1,098	577	365	322	14	4,91
BIGLEAF MAPLE	--	192	262	286	210	83	300	145	1,47
BLACK COTTONWOOD	--	49	70	143	140	163	271	117	95
WESTERN PAPER BIRCH	--	25	29	9	--	5	--	--	6
PACIFIC MADRONE	--	13	11	27	8	--	12	3	7
OREGON ASH	--	21	17	28	5	17	20	7	11
TOTAL	--	1,532	1,695	1,590	940	633	924	286	7,60
ALL SPECIES	2,519	4,929	5,901	5,661	5,020	4,605	13,022	18,827	60,48

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

Table 16—Net annual growth of growing stock and sawtimber on timberland by ownership class and by softwoods and hardwoods, Puget Sound area, Washington, 1979[1/]

OWNERSHIP CLASS	AVERAGE VOLUME	SOFTWOODS	HARDWOODS	ALL SPECIES
	CUBIC METERS PER HECTARE	THOUSAND CUBIC METERS		
GROWING STOCK:				
NATIONAL FOREST	1	360	2/-3	357
OTHER PUBLIC	12	2 450	499	2 949
FOREST INDUSTRY	10	3 444	679	4 123
OTHER PRIVATE	10	2 753	1 497	4 250
ALL OWNERSHIPS	8	9 007	2 671	11 678
	CUBIC FEET PER ACRE	THOUSAND CUBIC FEET		
GROWING STOCK:				
NATIONAL FOREST	15	12,712	2/-113	12,599
OTHER PUBLIC	166	86,581	17,625	104,206
FOREST INDUSTRY	146	121,691	23,988	145,679
OTHER PRIVATE	150	97,283	52,897	150,180
ALL OWNERSHIPS	119	318,267	94,396	412,663
	BOARD FEET PER ACRE	THOUSAND BOARD FEET		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE):				
NATIONAL FOREST	67	56,217	126	56,343
OTHER PUBLIC	967	516,778	90,365	607,143
FOREST INDUSTRY	782	655,692	125,128	780,820
OTHER PRIVATE	834	579,340	255,363	834,703
ALL OWNERSHIPS	658	1,808,027	470,982	2,279,008

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Negative net annual growth is the result of annual mortality exceeding gross annual growth.

Table 17—Net annual growth of growing stock on timberland by species and ownership class, Puget Sound area, Washington, 1979[1/]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	3,719	45,000	42,527	58,841	150,087
WESTERN HEMLOCK	4,113	27,458	56,452	21,459	109,482
PACIFIC SILVER FIR	4,751	4,479	9,424	210	18,864
WESTERN REDCEDAR	611	8,926	11,097	13,303	33,936
MOUNTAIN HEMLOCK	2/-672	73	828	—	229
NOBLE FIR	29	201	151	—	382
ALASKA-CEDAR	29	18	59	—	107
GRAND FIR	3/	—	496	2,416	2,911
SITKA SPRUCE	2/-12	220	478	755	1,441
SUBALPINE FIR	136	—	—	—	136
LODGEPOLE PINE	—	—	81	299	380
WESTERN WHITE PINE	2/-5	205	100	—	299
ENGELMANN SPRUCE	13	—	—	—	13
TOTAL	12,712	86,581	121,691	97,283	318,267
HARDWOODS:					
RED ALDER	2/-129	10,543	18,301	37,100	65,814
BIGLEAF MAPLE	2/-83	4,348	2,856	7,944	15,065
BLACK COTTONWOOD	99	1,967	2,127	5,003	9,196
WESTERN PAPER BIRCH	—	377	637	1,175	2,189
PACIFIC MADRONE	—	390	—	908	1,298
OREGON ASH	—	—	68	767	834
TOTAL	2/-113	17,625	23,988	52,897	94,396
ALL SPECIES	12,599	104,206	145,679	150,180	412,663

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Negative net annual growth is the result of annual mortality exceeding gross annual growth.

3/Less than 500 cubic feet.

Table 18—Net annual growth of sawtimber on timberland by species and ownership class, Puget Sound area, Washington, 1979[1/]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
	THOUSAND BOARD FEET, INTERNATIONAL 1/4-INCH RULE				
SOFTWOODS:					
DOUGLAS-FIR	24,378	295,707	246,720	359,698	926,502
WESTERN HEMLOCK	10,701	139,654	286,538	121,087	557,979
PACIFIC SILVER FIR	25,548	28,695	51,450	1,513	107,206
WESTERN REDCEDAR	1,473	49,536	56,099	78,991	186,099
MOUNTAIN HEMLOCK	2/-4,609	523	5,248	--	1,162
NOBLE FIR	2/-339	1,047	842	--	1,549
ALASKA-CEDAR	2/-840	124	356	--	2/-361
GRAND FIR	2/-93	--	3,348	12,337	15,591
SITKA SPRUCE	2/-91	1,494	3,227	5,336	9,965
SUBALPINE FIR	44	--	--	--	44
LODGEPOLE PINE	--	--	791	379	1,171
WESTERN WHITE PINE	2/-33	--	1,074	--	1,041
ENGELMANN SPRUCE	78	--	--	--	78
TOTAL	56,217	516,778	655,692	579,340	1,808,027
HARDWOODS:					
RED ALDER	2/-431	60,516	95,270	167,044	322,398
BIGLEAF MAPLE	2/-156	19,403	14,576	37,475	71,298
BLACK COTTONWOOD	713	7,368	13,872	37,058	59,010
WESTERN PAPER BIRCH	--	1,569	1,216	4,858	7,643
PACIFIC MADRONE	--	1,510	--	4,168	5,678
OREGON ASH	--	--	194	4,761	4,955
TOTAL	126	90,365	125,128	255,363	470,982
ALL SPECIES	56,343	607,143	780,820	834,703	2,279,008

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Negative net annual growth is the result of annual mortality exceeding gross annual growth.

Table 19—Average annual mortality of growing stock on timberland by species and ownership class, Puget Sound area, Washington, 1979[1/]

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	8,552	3,598	2,733	4,403	19,286
WESTERN HEMLOCK	11,918	1,532	3,039	1,213	17,701
PACIFIC SILVER FIR	11,382	695	1,017	30	13,124
WESTERN REDCEDAR	3,065	508	668	715	4,957
MOUNTAIN HEMLOCK	2,123	48	439	--	2,610
NOBLE FIR	638	13	10	--	662
ALASKA-CEDAR	444	11	36	--	491
GRAND FIR	30	--	27	124	181
SITKA SPRUCE	32	11	55	53	151
SUBALPINE FIR	262	--	--	--	262
LODGEPOLE PINE	--	--	9	22	31
WESTERN WHITE PINE	22	7	10	--	38
ENGELMANN SPRUCE	20	--	--	--	20
TOTAL	38,489	6,422	8,044	6,561	59,515
HARDWOODS:					
RED ALDER	201	1,458	2,509	5,086	9,254
BIGLEAF MAPLE	83	534	389	976	1,981
BLACK COTTONWOOD	35	94	102	266	496
WESTERN PAPER BIRCH	--	56	111	186	353
PACIFIC MADRONE	--	48	--	105	153
OREGON ASH	--	--	9	100	109
TOTAL	318	2,190	3,120	6,719	12,347
ALL SPECIES	38,807	8,612	11,164	13,280	71,862

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

Table 20—Average annual mortality of sawtimber on timberland by species and ownership class, Puget Sound area, Washington, 1979[1]/

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
	THOUSAND BOARD FEET, INTERNATIONAL 1/4-INCH RULE				
SOFTWOODS:					
DOUGLAS-FIR	43,302	16,187	11,203	17,920	88,611
WESTERN HEMLOCK	70,333	6,157	12,900	5,606	94,995
PACIFIC SILVER FIR	68,400	4,274	5,519	187	78,380
WESTERN REDCEDAR	17,986	2,200	3,020	3,603	26,809
MOUNTAIN HEMLOCK	12,384	274	2,638	—	15,296
NOBLE FIR	4,051	65	59	—	4,175
ALASKA-CEDAR	2,481	60	188	—	2,728
GRAND FIR	208	—	162	578	948
SITKA SPRUCE	223	57	297	323	900
SUBALPINE FIR	1,284	—	—	—	1,284
LODGEPOLE PINE	—	—	41	38	79
WESTERN WHITE PINE	138	—	56	—	194
ENGELMANN SPRUCE	113	—	—	—	113
TOTAL	220,901	29,272	36,083	28,254	314,510
HARDWOODS:					
RED ALDER	503	4,016	5,824	10,246	20,589
BIGLEAF MAPLE	156	1,166	936	2,243	4,500
BLACK COTTONWOOD	135	230	439	1,287	2,091
WESTERN PAPER BIRCH	—	123	54	176	353
PACIFIC MADRONE	—	118	—	152	270
OREGON ASH	—	—	9	345	354
TOTAL	794	5,653	7,262	14,448	28,157
ALL SPECIES	221,695	34,925	43,346	42,702	342,667

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

Table 21—Timber harvest by ownership class, Puget Sound area, Washington, 1950-79

YEAR	NATIONAL FOREST			OTHER PUBLIC 1/			PRIVATE			ALL OWNERSHIPS		
	LIVE	DEAD 2/	TOTAL	LIVE	DEAD 2/	TOTAL	LIVE	DEAD 2/	TOTAL	LIVE	DEAD 2/	TOTAL
	THOUSAND BOARD FEET, SCRIBNER SCALE											
1950	3/	3/	202,200	--	--	--	3/	3/	952,263	3/	3/	1,154,463
1951	3/	3/	215,000	--	--	--	3/	3/	897,536	3/	3/	1,112,536
1952	161,997	23,203	185,200	--	--	--	904,924	17,019	921,943	1,066,921	40,222	1,107,143
1953	3/	3/	199,300	--	--	--	706,718	18,458	725,176	3/	3/	924,476
1954	149,200	38,400	187,600	--	--	--	649,413	19,947	669,360	798,613	58,347	856,960
1955	158,900	43,226	202,126	125,942	5,296	131,238	680,586	24,090	704,676	965,428	72,612	1,038,040
1956	168,000	39,000	207,000	163,777	3,230	167,007	761,221	30,326	791,547	1,092,998	72,556	1,165,554
1957	194,958	42,647	237,605	84,773	1,636	86,409	549,246	28,027	577,273	828,977	72,310	901,287
1958	194,332	38,104	232,436	16,375	2,838	19,213	508,219	23,715	531,934	718,926	64,657	783,583
1959	289,973	47,408	337,381	85,439	2,178	87,617	673,431	21,468	694,899	1,048,843	71,054	1,119,897
1960	251,475	21,319	272,794	57,351	5,164	62,515	760,638	42,447	803,085	1,069,464	68,930	1,138,394
1961	267,122	10,764	277,886	57,670	482	58,152	634,153	11,495	645,648	958,945	22,741	981,686
1962	297,500	44,700	342,200	80,622	619	81,241	696,626	12,340	708,966	1,074,748	57,659	1,132,407
1963	307,000	38,800	345,800	153,008	35,179	188,187	539,777	134,971	674,748	999,785	208,950	1,208,735
1964	345,780	57,020	402,800	102,913	32,488	135,401	730,433	94,433	824,866	1,179,126	183,941	1,363,067
1965	363,800	29,700	393,500	121,140	21,765	142,905	796,987	39,937	836,924	1,281,927	91,402	1,373,329
1966	304,650	14,100	318,750	138,929	8,975	147,904	742,221	34,657	776,878	1,185,800	57,732	1,243,532
1967	294,473	38,927	333,400	119,955	2,098	122,053	817,283	17,415	834,698	1,231,711	58,440	1,290,151
1968	278,009	45,178	323,187	173,852	442	174,294	854,664	1,781	856,445	1,306,525	47,401	1,353,926
1969	246,255	67,223	313,478	149,816	1,294	151,110	1,235,986	849	1,236,835	1,632,057	69,366	1,701,423
1970	273,458	41,642	315,100	132,321	39	132,360	1,073,823	331	1,074,154	1,479,602	42,012	1,521,614
1971	221,864	20,791	242,655	187,684	858	188,542	1,008,580	947	1,009,527	1,418,128	22,596	1,440,724
1972	288,761	38,183	326,944	206,727	703	207,430	1,056,663	970	1,057,633	1,552,151	39,856	1,592,007
1973	330,219	50,013	380,232	130,780	3,315	134,095	1,145,691	175	1,145,866	1,606,690	53,503	1,660,193
1974	233,319	8,390	241,709	181,393	5,872	187,265	1,095,070	632	1,095,702	1,509,782	14,894	1,524,676
1975	160,593	8,396	168,989	161,903	2,217	164,120	944,741	8,819	953,560	1,267,237	19,432	1,286,669
1976	217,668	15,913	233,581	157,005	645	157,650	958,541	7,915	966,456	1,333,214	24,473	1,357,687
1977	199,763	17,535	217,298	180,796	853	181,649	832,831	5,071	837,902	1,213,390	23,459	1,236,849
1978	223,799	31,854	254,653	263,742	751	264,493	706,379	5,298	711,677	1,192,920	37,903	1,230,823
1979	270,999	3,404	274,403	254,213	1,310	255,523	838,590	4,200	842,790	1,363,802	8,914	1,372,716

1/Data for other public ownership are combined with private ownership for 1950-54.

2/Includes snags and down material existing before logging.

3/Data not available.

Source: 1950-76: Washington timber harvest reports by year (published by Pacific Northwest Forest and Range Experiment Station); 1977-79: Timber harvest reports, State of Washington, Department of Natural Resources.

Bassett, Patricia M.; Oswald, Daniel D. Timber resource statistics for the Puget Sound area, Washington. Resour. Bull. PNW-96. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station; 1982. 31 p.

This report summarizes a 1979 timber resource inventory of eight counties in the Puget Sound area of Washington: Island, King, Kitsap, Pierce, San Juan, Skagit, Snohomish, and Whatcom. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

KEYWORDS: Forest surveys, statistics (forest), timber resources, resources (forest), Washington (Puget Sound).

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