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Timber Resource Statistics for Eastern Washington

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Abstract

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This report summarizes a 1980 timber resource inventory of the 16 forested counties in Washington east of the crest of the Cascade Range. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

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

Summary

The eastern Washington resource area totals 26,966,000 acres (10 913 000 ha), of which an estimated 9,216,000 acres (3 730 000 ha) are forested. An estimated 7,145,000 acres (2 891 000 ha) are classified as timberland. The area has an estimated 17.3 billion cubic feet (491 million m^3) of standing timber with 72 percent of this volume in public ownership.

Preface

Forest Inventory and Analysis (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 resource inventories throughout the 50 States. The Pacific Northwest Forest and Range Experiment Station at Portland, Oregon, is responsible for inventories in Alaska, California, Hawaii, Oregon, and Washington.

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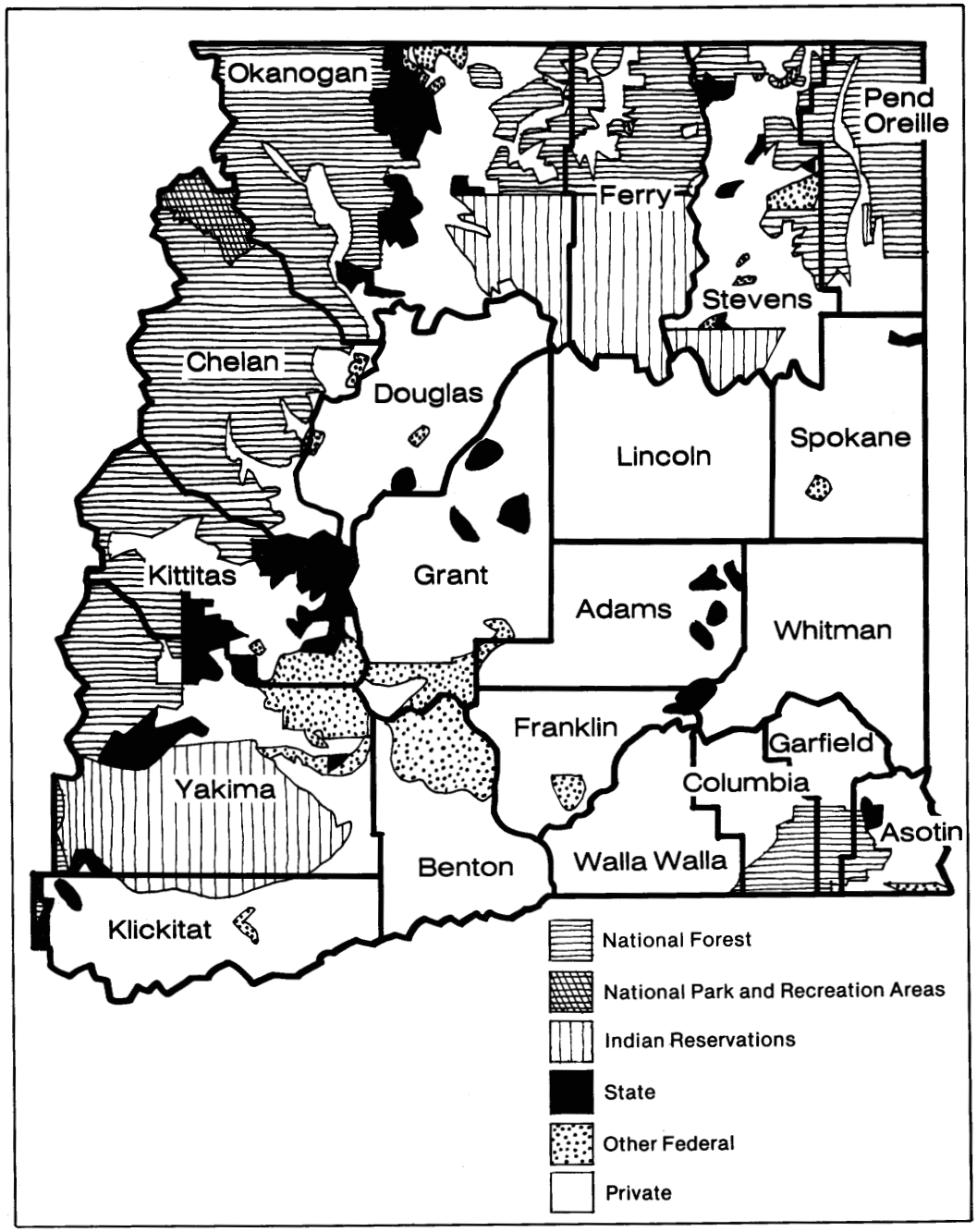
Map of the eastern Washington area



Introduction

This report presents statistics from the latest inventory of timber resources for the 16 forested counties in Washington east of the crest of the Cascade Range. The eastern Washington area was first inventoried in 1935, with subsequent inventories in 1953-61 and 1967-68. The five northeastern-most counties were also inventoried in 1947. Although the current inventory includes all 16 counties, data for subunits are available on request.

Field data for all lands except National Forests were collected in the summer and fall of 1980 by the Forest Inventory and Analysis work unit (FIA) of the Pacific Northwest Forest and Range Experiment Station. National Forest inventory data included in this report are for all lands in the State administered by the Colville, Kaniksu, Okanogan, Umatilla, and Wenatchee National Forests. The inventory data were collected by National Forest personnel. Dates of inventories for these five National Forests were:

Forest	*Year of inventory*
Pacific Northwest Region:	
Colville	1973-74
Okanogan	1977
Umatilla	1969
Wenatchee	1977
Northern Region:	
Kaniksu	1975

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

Inventory Procedures

This report combines inventory data from five National Forests with an inventory of State, county, municipal, Indian trust, and private forest lands conducted by FIA in the summer and fall of 1980.

Inventory procedures used on National Forests vary somewhat from forest to forest. Readers desiring detailed information for these inventories should contact the Timber Management staff of the Forest Service Region or National Forest of interest. The general approach used for National Forest inventories in eastern Washington is described below.

All areas of timberland, other forest land, Wilderness and other reserved, and nonforest land were mapped by delineation on aerial photos. Timberland areas were then sampled with field plots, distributed either systematically on a square grid, or randomly in mapped areas defined by forest conditions. The field plots, each a cluster of 10 variable-radius points distributed over about 1 acre (0.4 ha), [1] 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). Owner group, major land class (timberland, other forest, nonforest), and stand volume class were identified on 19,147 photo points. A subsample of 1, 266 points were visited to determine the accuracy of the land classifications. Field plots were established or reestablished at all forest land points included in the subsample. At each such plot, trees were measured and tree and area characteristics were observed.

During the 1967-68 inventory, a 10-point plot cluster was established at each timberland field location. For the 1980 inventory, a 5-point subset of the original cluster was checked to account for losses from harvest or mortality. On one-third of these timberland plots, the subset was also remeasured to account for growth in height and diameter of trees surviving from the previous inventory. These remeasurement data were used to develop equations for predicting height and diameter growth; the equations were then used to predict current heights and diameters for the two-thirds of the timber inventory plots for which trees were not remeasured. All timberland plots were then used to estimate volume, growth, mortality, and condition of the forest stand (MacLean 1980).

The correlation between plot volume based on estimated diameters and heights and plot volume calculated from measured diameters and heights was $r = 0.99$. A similar comparison between estimated and measured growth showed a correlation of $r = 0.95$. Bias, in both cases, was negligible.

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[1] The Colville and Kaniksu inventories are based on single-point variable-radius plots rather than on 10-point clusters.

Reliability of Inventory Data

The timberland area of the five National Forests in eastern Washington was determined from mapping and is not subject to sampling error. Estimates of National Forest timber volume and growth are based on sampling and are subject to sampling error. Confidence intervals (68-percent probability level) for estimated cubic-foot volume and net annual cubic-foot growth are available for three of the five National Forests:

National Forest	Timberland area	Net volume	Net annual growth
	Thousand acres	..... *Million cubic feet*	
Colville	973	2,063 ± NA	42.7 ± NA
Kaniksu	110	208 ± NA	4.9 ± NA
Okanogan	683	1,493 ± 55	10.0 ± 0.9
Umatilla	113	354 ± 17	5.8 ± 0.4
Wenatchee	1,028	3,027 ± 95	33.6 ± 1.0

All area and volume statistics for forested areas **other than National Forest** are based on sampling and are subject to sampling error. Confidence intervals (68-percent 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*	
Other public	1,977 ± 53	5,319 ± 268	122 ± 7
Forest industry	880 ± 37	2,378 ± 173	60 ± 5
Other Private	1,380 ± 49	2,505 ± 143	94 ± 6
All owners, other than National Forest	4,237 ± 78	10,202 ± 345	277 ± 11

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 (68-percent) chance that the timberland area for all owners (other than National Forest) is within the range 4,237,000 ± 78,000 acres (4,159,000 to 4,315,000 acres).

Confidence intervals vary with 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 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	
1,500	± 40	± 90
1,000	± 32	± 75
800	± 28	± 67
600	± 23	± 57
400	± 19	± 49
200	± 12	± 35
100	± 8	± 25
50	± 6	± 18
25	± 4	± 13
15	± 3	± 11
10	± 2	± 9
5	± 1	± 6

Confidence intervals for other than National Forest land

For net volume estimates of various sizes [2]	For net annual growth estimates of various sizes [2]
Million cubic feet	*Thousand cubic feet*
6,000 ± 340	150,000 ± 8,300
4,000 ± 249	100,000 ± 6,800
2,000 ± 152	50,000 ± 4,800
1,000 ± 103	25,000 ± 3,400
800 ± 94	15,000 ± 2,600
600 ± 84	10,000 ± 2,100
400 ± 74	5,000 ± 1,400
200 ± 65	1,000 ± 300
100 ± 44	500 ± 100
50 ± 23	100 ± 50
25 ± 12	
15 ± 8	
10 ± 6	
5 ± 4	

Actual confidence intervals have been calculated for the tabular data on ownerships **other than National Forest;** they are available on request.

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[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

Bureau of Land Management lands—Federal lands administered by the Bureau of Land Management, U.S. Department of the Interior.

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 medium-size crowns more or less crowded on the sides.

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

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 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 the 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 the bark. Net volume equals gross volume less deduction for rot and missing bole sections.

Hardwoods—Trees that are angiosperms, usually broad-leaved and deciduous.

Indian lands—Tribal lands held in fee by the Federal Government but administered for Indian Tribal groups and Indian trust allotments.

Industrial wood—All commercial roundwood products except fuelwood.

International 1/4-inch rule—The standard board-foot log rule adopted nationally by the USDA Forest Service for the presentation 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 one-eighth 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 age at which the mean annual increment culminates for fully stocked stands.

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

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 (12.5-22.5 cm) if softwood and from 5.0-11.0 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 least 9.0 inches (22.5 cm) in d.b.h. for softwoods 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 5.0 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 the 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 the 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 board-foot log rule used locally in determining volume of sawtimber. Scribner volume is estimated in terms of 16-foot (5-m) logs.

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.

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 (10-cm) top outside the bark.

Timberland—Forest land capable of producing 20 cubic feet or more per acre (1.4 m^3/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 stature, 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 the bark for softwoods and 9.0 inches (23 cm) outside the bark for hardwoods—to a minimum top diameter of 4.0 inches (10 cm) outside the bark, or to the point where the central stem breaks into limbs.

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.
Larch, subalpine	*Larix lyallii* Parl.
Larch, western	*L. occidentalis* Nutt.
Pine, lodgepole	*Pinus contorta* Dougl. es Loud. var. *latifolia* Engelm.
Pine, ponderosa	*P. ponderosa* Dougl. ex Laws.
Pine, western white	*P. monticola* Dougl. ex D. Don
Pine, whitebark	*P. albicaulis* Engelm.
Redcedar, western	*Thuja plicata* Donn ex D. Don
Spruce, Engelmann	*Picea engelmannii* Parry ex Engelm.
Hardwoods	
Alder, red	*Alnus rubra* Bong.
Alder, white	*A. rhombifolia* Nutt.
Aspen, quaking	*Populus tremuloides* Michx.
Birch, western paper	*Betula papyrifera* var. *commutata* (Reg.) Fern.
Cottonwood, black	*Populus trichocarpa* Torr. & Gray
Maple, bigleaf	*Acer macrophyllum* Pursh
Oak, Oregon white	*Quercus garryana* Dougl. ex hook
Willow	*Salix* spp.

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 county and land class, eastern Washington, January 1, 1981 1/

COUNTY	FOREST LAND					NONFOREST LAND 2/	ALL LANDS 3/4/
	TIMBERLAND	TIMBERLAND, DEFERRED	TIMBERLAND, RESERVED	OTHER FOREST	TOTAL		
				THOUSAND HECTARES			
ADAMS	--	--	--	--	--	490	490
ASOTIN	25	--	5/	7	32	132	164
BENTON	--	--	--	--	--	446	446
CHELAN	273	3	45	96	418	340	758
COLUMBIA	36	--	11	12	59	163	223
DOUGLAS	2	--	--	--	3	473	476
FERRY	414	--	2	70	485	88	573
FRANKLIN	--	--	--	--	--	326	326
GARFIELD	23	--	2	4	30	155	185
GRANT	--	--	--	--	--	694	694
KITTITAS	214	--	10	47	271	326	598
KLICKITAT	144	--	5/	54	198	289	488
LINCOLN	20	--	1	4	25	572	597
OKANOGAN	520	--	72	196	788	584	1 373
PEND OREILLE	297	6	1	17	321	42	363
SPOKANE	119	--	10	17	145	310	456
STEVENS	446	--	2	49	497	145	642
WALLA WALLA	8	--	--	2	10	318	328
WHITMAN	4	--	5/	1	4	556	561
YAKIMA	334	--	18	52	404	688	1 092
OTHER COUNTIES 6/	13	--	12	15	39	40	80
ALL COUNTIES 6/	2 891	9	185	645	3 730	7 184	10 913
				THOUSAND ACRES			
ADAMS	--	--	--	--	--	1,212	1,212
ASOTIN	61	--	7/	18	79	327	405
BENTON	--	--	--	--	--	1,102	1,102
CHELAN	674	8	112	238	1,032	841	1,873
COLUMBIA	90	--	26	30	146	404	550
DOUGLAS	6	--	--	1	7	1,170	1,177
FERRY	1,022	--	4	172	1,198	218	1,415
FRANKLIN	--	--	--	--	--	806	806
GARFIELD	57	--	6	11	73	383	456
GRANT	--	--	--	--	--	1,716	1,716
KITTITAS	530	--	24	117	670	806	1,477
KLICKITAT	356	--	7/	134	490	715	1,206
LINCOLN	49	--	2	11	63	1,413	1,475
OKANOGAN	1,286	--	177	484	1,948	1,444	3,392
PEND OREILLE	733	15	2	42	792	105	897
SPOKANE	293	--	24	43	359	767	1,127
STEVENS	1,102	--	5	121	1,228	359	1,587
WALLA WALLA	19	--	--	5	24	787	811
WHITMAN	9	--	7/	2	11	1,375	1,386
YAKIMA	826	--	44	128	999	1,701	2,699
OTHER COUNTIES 6/	32	--	29	36	97	100	197
ALL COUNTIES 6/	7,145	23	457	1,593	9,216	17,751	26,966

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/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 Census as land.

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

4/Includes all land administered by the Colville, Kaniksu (Washington portion), Okanogan, Umatilla (Washington portion), and Wenatchee National Forests. Excludes 9,000 acres (4 000 hectares) in Klickitat County and 38,000 acres (15 000 hectares) in Yakima County administered by the Gifford Pinchot National Forest and previously reported (Bassett and Oswald 1981).

5/Less than 500 hectares.

6/Includes 161,000 acres (65 000 hectares) in Whatcom County and 36,000 acres (15 000 hectares) in Skagit County adminstered by the Okanogan National Forest.

7/Less than 500 acres.

Table 2—Area of timberland by county and ownership class, eastern Washington, January 1, 1981 1/

COUNTY	NATIONAL FOREST	OTHER PUBLIC						PRIVATE				ALL OWNERSHIPS
		BUREAU OF LAND MANAGEMENT	INDIAN	MISCELLANEOUS FEDERAL	STATE	COUNTY AND MUNICIPAL	TOTAL	FOREST INDUSTRY	FARMER	MISCEL-LANEOUS	TOTAL	
						THOUSAND ACRES						
ASOTIN	22	--	--	--	9	--	9	1	10	18	29	61
CHELAN	514	--	--	--	27	8	35	72	24	28	124	674
COLUMBIA	48	1	--	--	4	--	6	5	10	21	36	90
DOUGLAS	--	2/	--	--	2/	--	2/	--	3	3	6	6
FERRY	407	8	416	--	28	1	453	51	34	76	162	1,022
GARFIELD	43	--	--	--	3	--	3	1	3	7	11	57
KITTITAS	231	--	--	--	69	--	69	195	16	19	230	530
KLICKITAT	--	2	32	3	74	1	112	168	40	37	244	356
LINCOLN	--	--	--	--	3	1	4	2/	15	29	45	49
OKANOGAN	649	10	251	4	183	--	448	41	83	65	189	1,286
PEND OREILLE	464	1	3	2/	29	3	36	100	41	92	233	733
SPOKANE	--	--	--	13	15	3	32	22	79	161	261	293
STEVENS	211	18	89	39	150	2	297	165	137	291	593	1,102
WALLA WALLA	--	--	--	--	1	2	3	2	5	9	17	19
WHITMAN	--	--	--	--	1	--	1	--	3	5	8	9
YAKIMA	286	--	389	3	80	--	471	56	6	7	69	826
OTHER COUNTIES 3/	32	--	--	--	--	--	--	--	--	--	--	32
ALL COUNTIES 3/	2,907	40	1,180	62	675	21	1,977	880	510	870	2,259	7,144

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Less than 500 acres.

3/Includes 13,000 acres (5 000 ha) in Skagit County and 19,000 acres (8 000 ha) in Whatcom County administered by the Okanogan National Forest.

Table 3—Area of timberland by cubic-foot site and ownership classes, eastern Washington, January 1, 1981 1/

SITE CLASS 2/	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
CUBIC FEET			THOUSAND ACRES		
225 OR MORE	--	--	--	--	--
165-224	165	7	12	27	212
120-164	507	170	116	194	988
85-119	619	511	242	365	1,736
50-84	981	721	344	468	2,514
20-49	636	568	166	325	1,695
ALL CLASSES	2,907	1,977	880	1,380	7,144

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, eastern Washington, January 1, 1981[1/]

STAND SIZE CLASS	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND HECTARES		
SAWTIMBER STANDS:					
LARGE SAWTIMBER 2/	231	48	13	3	295
SMALL SAWTIMBER 3/	479	468	222	271	1 440
TOTAL	710	516	235	274	1 735
POLETIMBER STANDS	163	125	64	147	499
SAPLING AND SEEDLING STANDS	244	147	43	120	554
NONSTOCKED AREAS	59	13	14	17	103
ALL CLASSES	1 176	800	356	558	2 891
			THOUSAND ACRES		
SAWTIMBER STANDS:					
LARGE SAWTIMBER 4/	572	118	32	7	728
SMALL SAWTIMBER 5/	1,183	1,156	549	670	3,559
TOTAL	1,755	1,274	581	677	4,287
POLETIMBER STANDS	404	308	159	364	1,234
SAPLING AND SEEDLING STANDS	604	363	106	296	1,368
NONSTOCKED AREAS	145	33	34	43	255
ALL CLASSES	2,907	1,977	880	1,380	7,144

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, eastern Washington, January 1, 1981 1/

FOREST TYPE	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND ACRES		
DOUGLAS-FIR	904	773	284	630	2,590
PONDEROSA PINE	200	657	243	387	1,486
LODGEPOLE PINE	385	174	27	128	714
GRAND FIR	305	121	148	90	663
WESTERN LARCH	396	53	43	19	511
SUBALPINE FIR	171	51	22	--	244
ENGELMANN SPRUCE	134	24	19	13	191
WESTERN REDCEDAR	70	37	20	15	141
PACIFIC SILVER FIR	84	19	15	--	117
WESTERN HEMLOCK	64	--	19	--	83
MOUNTAIN HEMLOCK	34	7	7	--	47
WHITEBARK PINE	7	--	--	--	7
WESTERN WHITE PINE	4	--	--	--	4
ALASKA-CEDAR	2	--	--	--	2
ASPEN	--	7	--	28	35
OREGON WHITE OAK	--	12	--	13	25
COTTONWOOD	--	6	--	7	12
MAPLE	--	--	--	7	7
RED ALDER	--	5	--	--	5
OTHER HARDWOODS	2	--	--	--	2
NONCOMMERCIAL CONIFERS	1	--	--	--	1
UNCLASSIFIED 2/	145	33	34	43	255
ALL TYPES	2,907	1,977	880	1,380	7,144

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, eastern Washington, January 1, 1981 1/

LAND CLASS AND FOREST TYPE	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND ACRES		
TIMBERLAND, RESERVED:					
LODGEPOLE PINE	91	3	--	--	94
SPRUCE	62	7	--	--	69
SUBALPINE FIR	50	8	--	--	58
DOUGLAS-FIR	34	19	--	--	53
PACIFIC SILVER FIR	45	--	--	--	45
LARCH	44	--	--	--	44
PONDEROSA PINE	6	33	--	--	39
GRAND FIR	22	14	--	--	36
WESTERN HEMLOCK	3	11	--	--	14
OTHER CONIFERS	--	5	--	--	5
HARDWOODS	--	3/	--	--	3/
ALL TIMBERLAND, RESERVED	357	100	--	--	457
TIMBERLAND, DEFERRED:					
CEDAR-HEMLOCK	10	--	--	--	10
SPRUCE	5	--	--	--	5
UNCLASSIFIED 4/	8	--	--	--	8
ALL TIMBERLAND, DEFERRED	23	--	--	--	23
OTHER FOREST LAND:					
PONDEROSA PINE	--	205	75	141	421
DOUGLAS-FIR	--	65	7	26	97
ENGELMANN SPRUCE	--	6	--	--	6
NOBLE FIR	--	--	6	--	6
LODGEPOLE PINE	--	6	--	--	6
HARDWOODS	--	20	8	19	46
OAK-MADRONE	--	15	--	52	67
WILLOW	--	13	--	20	33
NONSTOCKED	--	22	19	7	47
UNCLASSIFIED 4/	797	31	36	--	864
ALL OTHER FOREST LAND 5/	797	383	150	264	1,593

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/Less than 500 acres.

4/Information on forest type not available.

5/Includes 114,000 acres of reserved areas.

Table 7—Volume of timber on timberland by class of timber and by softwoods and hardwoods, eastern Washington, January 1, 1981 1/

CLASS OF TIMBER	SOFTWOODS	HARDWOODS	ALL SPECIES
		MILLION CUBIC FEET	
SAWTIMBER TREES:			
SAW-LOG PORTION	13,939	121	14,059
UPPER-STEM PORTION	662	20	682
TOTAL	14,601	141	14,741
POLETIMBER TREES	2,507	99	2,606
ALL GROWING STOCK	17,108	239	17,348
SOUND CULL TREES	64	18	82
ROTTEN CULL TREES	85	1	85
SALVABLE DEAD TREES	274	2/	274
ALL TIMBER	17,531	258	17,789

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Less than 500,000 cubic feet.

Table 8—Volume of growing stock and sawtimber on timberland by ownership class and by softwoods and hardwoods, eastern Washington, January 1, 1981 1/

OWNERSHIP CLASS	AVERAGE VOLUME	SOFTWOODS	HARDWOODS	ALL SPECIES
	CUBIC METERS PER HECTARE	- - - - - - MILLION CUBIC METERS - - - - - -		
GROWING STOCK: 2/				
NATIONAL FOREST	172	200	2	202
OTHER PUBLIC	189	148	2	151
FOREST INDUSTRY	188	67	3/	67
OTHER PRIVATE	127	68	3	71
ALL OWNERSHIPS	170	484	7	491
	CUBIC FEET PER ACRE	- - - - - - MILLION CUBIC FEET - - - - - -		
GROWING STOCK: 4/				
NATIONAL FOREST	2,458	7,083	62	7,145
OTHER PUBLIC	2,690	5,243	77	5,319
FOREST INDUSTRY	2,702	2,370	8	2,378
OTHER PRIVATE	1,816	2,413	92	2,506
ALL OWNERSHIPS	2,428	17,108	239	17,348
	BOARD FEET PER ACRE	- - - - - - MILLION BOARD FEET - - - - - -		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE): 5/				
NATIONAL FOREST	11,426	33,082	134	33,216
OTHER PUBLIC	13,454	26,332	267	26,599
FOREST INDUSTRY	13,407	11,795	4	11,798
OTHER PRIVATE	7,906	10,605	305	10,910
ALL OWNERSHIPS	11,551	81,814	710	82,523
SAWTIMBER (SCRIBNER RULE): 5/				
NATIONAL FOREST	10,177	29,469	116	29,585
OTHER PUBLIC	11,521	22,557	220	22,778
FOREST INDUSTRY	11,344	9,980	3	9,983
OTHER PRIVATE	6,509	8,734	249	8,983
ALL OWNERSHIPS	9,984	70,741	588	71,329

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 9—Volume of growing stock and sawtimber on timberland by county and ownership class, eastern Washington, January 1, 1981 1/

COUNTY	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION CUBIC METERS		
GROWING STOCK: 2/					
ASOTIN	2	1	3/	1	4
CHELAN	38	2	6	3	50
COLUMBIA	5	3/	3/	2	8
DOUGLAS	--	3/	--	3/	1
FERRY	23	30	3	6	63
GARFIELD	3	3/	3/	1	4
KITTITAS	24	5	17	2	48
KLICKITAT	--	10	11	4	25
LINCOLN	--	3/	3/	2	2
OKANOGAN	39	37	3	8	87
PEND OREILLE	29	3	8	8	47
SPOKANE	--	2	2	10	14
STEVENS	12	19	11	21	64
WALLA WALLA	--	3/	3/	1	1
WHITMAN	--	3/	--	3/	3/
YAKIMA	24	41	4	1	69
OTHER COUNTIES 4/	3	--	--	--	3
ALL COUNTIES	202	151	67	71	491
			MILLION CUBIC FEET		
GROWING STOCK: 5/					
ASOTIN	67	20	3	47	137
CHELAN	1,355	84	215	122	1,776
COLUMBIA	180	16	14	61	271
DOUGLAS	--	2	--	16	18
FERRY	825	1,068	119	210	2,222
GARFIELD	108	7	3	19	137
KITTITAS	839	172	612	77	1,700
KLICKITAT	--	350	393	142	885
LINCOLN	--	6	6/	60	66
OKANOGAN	1,391	1,300	109	286	3,086
PEND OREILLE	1,013	94	299	268	1,674
SPOKANE	--	67	66	368	501
STEVENS	433	684	399	759	2,275
WALLA WALLA	--	6	8	27	41
WHITMAN	--	1	--	14	15
YAKIMA	833	1,442	137	29	2,441
OTHER COUNTIES 4/	101	--	--	--	101
ALL COUNTIES	7,145	5,319	2,378	2,506	17,348

Table 9—Volume of growing stock and sawtimber on timberland by county and ownership class, eastern Washington, January 1, 1981 1/, continued

COUNTY	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION BOARD FEET		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE): 7/					
ASOTIN	277	92	15	203	587
CHELAN	6,871	402	1,126	598	8,997
COLUMBIA	961	77	66	256	1,360
DOUGLAS	--	9	--	83	92
FERRY	3,099	5,290	528	886	9,803
GARFIELD	544	33	12	81	670
KITTITAS	4,678	842	3,263	365	9,148
KLICKITAT	--	1,841	2,048	667	4,556
LINCOLN	--	29	2	256	287
OKANOGAN	6,110	6,726	580	1,355	14,771
PEND OREILLE	3,929	433	1,378	1,116	6,856
SPOKANE	--	311	310	1,556	2,177
STEVENS	1,627	3,205	1,739	3,176	9,747
WALLA WALLA	--	29	38	114	181
WHITMAN	--	5	--	59	64
YAKIMA	4,608	7,274	693	139	12,714
OTHER COUNTIES 8/	511	--	--	--	511
ALL COUNTIES	33,216	26,599	11,798	10,910	82,523
SAWTIMBER (SCRIBNER RULE): 7/					
ASOTIN	244	76	12	166	498
CHELAN	6,037	341	960	502	7,840
COLUMBIA	848	64	55	209	1,176
DOUGLAS	--	8	--	70	78
FERRY	2,873	4,507	439	723	8,542
GARFIELD	483	27	10	66	586
KITTITAS	4,188	720	2,801	305	8,014
KLICKITAT	--	1,616	1,743	558	3,917
LINCOLN	--	24	2	209	235
OKANOGAN	5,293	5,819	495	1,135	12,742
PEND OREILLE	3,534	361	1,150	912	5,957
SPOKANE	--	258	259	1,271	1,788
STEVENS	1,530	2,679	1,441	2,598	8,248
WALLA WALLA	--	24	31	94	149
WHITMAN	--	4	--	48	52
YAKIMA	4,105	6,251	585	116	11,057
OTHER COUNTIES 8/	451	--	--	--	451
ALL COUNTIES	29,585	22,778	9,983	8,983	71,329

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 growing stock volume on timberland in Whatcom County and Skagit County administered by the Okanogan National Forest.

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

6/Less than 500,000 cubic feet.

7/Includes softwoods trees 9.0-inch d.b.h. and larger and hardwood trees 11.0-inch d.b.h. and larger.

8/Includes sawtimber volume on timberland in Whatcom County and Skagit County administered by the Okanogan National Forest.

Table 10—Volume of growing stock on timberland by species and ownership class, eastern Washington, January 1, 1981 1/

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	2,321	1,749	818	1,072	5,960
PONDEROSA PINE	591	1,507	438	623	3,160
LODGEPOLE PINE	720	502	110	270	1,601
GRAND FIR	557	487	301	222	1,566
WESTERN LARCH	701	483	177	146	1,507
ENGELMANN SPRUCE	475	195	128	10	808
SUBALPINE FIR	452	92	96	1	641
PACIFIC SILVER FIR	400	63	89	--	552
WESTERN REDCEDAR	246	84	62	64	456
WESTERN HEMLOCK	287	4	64	3	357
MOUNTAIN HEMLOCK	147	55	48	--	249
WESTERN WHITE PINE	150	14	26	3	192
ALASKA-CEDAR	28	--	4	--	32
WHITEBARK PINE	8	6	7	--	21
NOBLE FIR	2	3	3	--	8
SUBALPINE LARCH	1	--	--	--	1
TOTAL	7,083	5,243	2,370	2,413	17,108
HARDWOODS:					
QUAKING ASPEN	12	45	--	30	87
WESTERN PAPER BIRCH 2/	38	5	4	23	71
BLACK COTTONWOOD	10	12	--	31	52
OREGON WHITE OAK	--	5	3	5	13
RED ALDER	2	8	--	3/	10
WHITE ALDER	3/	--	--	4	4
BIGLEAF MAPLE	1	2	--	--	3
TOTAL	62	77	8	92	239
ALL SPECIES	7,145	5,319	2,378	2,506	17,348

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Contains minor amounts of other hardwoods.

3/Less than 500,000 cubic feet.

Table 11—Volume of sawtimber, International 1/4-inch rule, on timberland by species and ownership class, eastern Washington, January 1, 1981 1/

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION BOARD FEET		
SOFTWOODS:					
DOUGLAS-FIR	11,295	9,183	4,245	4,769	29,492
PONDEROSA PINE	3,360	8,192	2,326	3,044	16,921
LODGEPOLE PINE	1,763	1,664	392	784	4,603
GRAND FIR	2,606	2,418	1,367	1,160	7,551
WESTERN LARCH	3,274	2,366	756	525	6,920
ENGELMANN SPRUCE	2,398	1,008	762	34	4,202
SUBALPINE FIR	1,732	397	387	--	2,516
PACIFIC SILVER FIR	2,352	345	500	--	3,197
WESTERN REDCEDAR	1,060	334	246	264	1,903
WESTERN HEMLOCK	1,556	16	333	15	1,920
MOUNTAIN HEMLOCK	773	309	274	--	1,355
WESTERN WHITE PINE	706	73	137	11	927
ALASKA-CEDAR	156	--	16	--	172
WHITEBARK PINE	39	27	37	--	103
NOBLE FIR	10	--	18	--	29
SUBALPINE LARCH	5	--	--	--	5
TOTAL	33,082	26,332	11,795	10,605	81,814
HARDWOODS:					
QUAKING ASPEN	21	164	--	110	295
WESTERN PAPER BIRCH 2/	60	--	--	52	112
BLACK COTTONWOOD	47	59	--	140	246
OREGON WHITE OAK	--	9	4	4	17
RED ALDER	3	35	--	--	39
BIGLEAF MAPLE	1	--	--	--	1
TOTAL	134	267	4	305	710
ALL SPECIES	33,216	26,599	11,798	10,910	82,523

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Contains minor amounts of other hardwoods.

Table 12—Volume of sawtimber, Scribner rule, on timberland by species and ownership class, eastern Washington, January 1, 1981 1/

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			MILLION BOARD FEET		
SOFTWOODS:					
DOUGLAS-FIR	10,413	7,906	3,589	3,904	25,812
PONDEROSA PINE	3,155	7,052	1,977	2,533	14,716
LODGEPOLE PINE	1,400	1,353	315	621	3,689
GRAND FIR	2,246	2,076	1,151	991	6,464
WESTERN LARCH	2,916	2,026	617	422	5,980
ENGELMANN SPRUCE	2,115	868	677	27	3,687
SUBALPINE FIR	1,428	327	321	--	2,076
PACIFIC SILVER FIR	2,120	297	434	--	2,851
WESTERN REDCEDAR	843	284	203	216	1,546
WESTERN HEMLOCK	1,327	14	285	12	1,638
MOUNTAIN HEMLOCK	682	268	234	--	1,184
WESTERN WHITE PINE	640	63	117	9	828
ALASKA CEDAR	137	--	14	--	151
WHITEBARK PINE	35	23	31	--	88
NOBLE FIR	9	--	17	--	26
SUBALPINE LARCH	5	--	--	--	5
TOTAL	29,469	22,557	9,980	8,734	70,741
HARDWOODS:					
QUAKING ASPEN	18	133	--	90	242
WESTERN PAPER BIRCH 2/	53	--	--	41	94
BLACK COTTONWOOD	41	50	--	115	205
OREGON WHITE OAK	--	7	3	3	13
RED ALDER	3	30	--	--	33
BIGLEAF MAPLE	1	--	--	--	1
TOTAL	116	220	3	249	588
ALL SPECIES	29,585	22,778	9,983	8,983	71,329

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Contains minor amounts of other hardwoods.

Table 13—Volume of growing stock on timberland by species and diameter class, eastern Washington, January 1, 1981 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	221	434	519	711	650	617	512	398	1,049	851	5,960
PONDEROSA PINE	64	163	225	286	314	267	273	240	767	563	3,160
LODGEPOLE PINE	264	440	326	227	139	80	55	37	27	6	1,601
GRAND FIR	74	160	153	170	154	180	157	125	231	162	1,566
WESTERN LARCH	84	150	172	163	162	162	117	116	264	115	1,507
ENGELMANN SPRUCE	35	50	65	72	80	86	62	75	182	98	808
SUBALPINE FIR	66	100	84	96	89	67	57	23	54	5	641
PACIFIC SILVER FIR	17	19	34	31	57	43	43	36	165	106	552
WESTERN REDCEDAR	29	52	54	40	45	42	35	32	61	65	456
WESTERN HEMLOCK	12	28	23	27	29	26	31	33	95	54	357
MOUNTAIN HEMLOCK	8	11	13	17	25	32	31	23	62	27	249
WESTERN WHITE PINE	8	17	17	18	26	16	18	18	36	19	192
ALASKA-CEDAR	--	1	1	1	2	3	2	4	12	5	32
WHITEBARK PINE	1	2/	1	4	2	2	6	1	4	2/	21
NOBLE FIR	--	3	--	--	2/	2/	2/	--	1	4	8
SUBALPINE LARCH	--	2/	1	2/	2/	--	--	--	2/	--	1
TOTAL	882	1,626	1,688	1,867	1,775	1,624	1,400	1,160	3,007	2,081	17,108
HARDWOODS:											
QUAKING ASPEN	5	9	13	15	25	10	6	4	--	--	87
WESTERN PAPER BIRCH 3/	21	19	7	12	5	1	1	1	3	--	71
BLACK COTTONWOOD	2/	1	5	9	6	9	3	2	15	2	52
OREGON WHITE OAK	5	1	4	--	1	1	--	--	2	--	13
RED ALDER	1	2/	1	2/	3	2/	--	1	3	--	10
WHITE ALDER	1	3	2/	--	--	--	--	--	--	--	4
BIGLEAF MAPLE	--	1	1	2/	--	--	--	--	--	--	3
TOTAL	33	35	31	36	40	21	10	9	23	2	239
ALL SPECIES	915	1,661	1,718	1,903	1,814	1,644	1,410	1,169	3,029	2,082	17,348

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Less than 500,000 cubic feet.

3/Contains minor amounts of other hardwoods.

Table 14—Volume of sawtimber, International 1/4-inch rule, on timberland by species and diameter class, eastern Washington, January 1, 1981 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	2,095	3,461	3,354	3,346	2,855	2,303	6,344	5,735	29,492
PONDEROSA PINE	898	1,383	1,667	1,477	1,586	1,422	4,755	3,732	16,921
LODGEPOLE PINE	1,460	1,177	775	450	317	222	167	36	4,603
GRAND FIR	668	861	861	1,038	914	756	1,437	1,015	7,551
WESTERN LARCH	731	843	887	893	666	673	1,555	670	6,920
ENGELMANN SPRUCE	283	381	444	495	368	450	1,156	627	4,202
SUBALPINE FIR	356	481	471	377	334	137	326	35	2,516
PACIFIC SILVER FIR	158	168	321	252	267	228	1,064	740	3,197
WESTERN REDCEDAR	216	192	211	214	188	164	333	383	1,903
WESTERN HEMLOCK	102	134	160	149	179	203	619	377	1,920
MOUNTAIN HEMLOCK	60	84	137	184	182	141	392	176	1,355
WESTERN WHITE PINE	69	91	140	84	103	100	214	125	927
ALASKA-CEDAR	5	5	12	14	13	20	70	33	172
WHITEBARK PINE	5	18	9	12	34	3	23	2/	103
NOBLE FIR	--	--	1	1	2	--	3	22	29
SUBALPINE LARCH	2	1	1	--	--	--	1	--	5
TOTAL	7,108	9,278	9,450	8,989	8,004	6,821	18,457	13,704	81,814
HARDWOODS:									
QUAKING ASPEN	--	64	126	53	31	22	--	--	295
WESTERN PAPER BIRCH 3/	--	54	27	5	7	6	13	--	112
BLACK COTTONWOOD	--	38	29	50	17	14	87	10	246
OREGON WHITE OAK	--	--	4	1	--	--	12	--	17
RED ALDER	--	1	17	1	--	4	16	--	39
BIGLEAF MAPLE	--	1	--	--	--	--	--	--	1
TOTAL	--	158	203	108	56	47	127	10	710
ALL SPECIES	7,108	9,437	9,654	9,098	8,060	6,868	18,585	13,714	82,523

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Less than 500,000 board feet.

3/Contains minor amounts of other hardwoods.

Table 15—Volume of sawtimber, Scribner rule, on timberland by species and diameter class, eastern Washington, January 1, 1981 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	1,656	2,822	2,823	2,895	2,493	2,053	5,740	5,330	25,812
PONDEROSA PINE	668	1,091	1,362	1,236	1,360	1,237	4,268	3,494	14,716
LODGEPOLE PINE	1,132	916	629	378	267	191	143	32	3,689
GRAND FIR	524	691	713	877	784	659	1,275	942	6,464
WESTERN LARCH	565	666	744	770	587	601	1,418	630	5,980
ENGELMANN SPRUCE	232	308	372	426	325	398	1,040	586	3,687
SUBALPINE FIR	284	381	384	314	283	114	285	32	2,076
PACIFIC SILVER FIR	121	137	268	217	236	205	970	698	2,851
WESTERN REDCEDAR	175	156	177	181	158	130	261	308	1,546
WESTERN HEMLOCK	85	112	138	128	153	172	526	324	1,638
MOUNTAIN HEMLOCK	46	68	114	156	157	125	353	165	1,184
WESTERN WHITE PINE	60	78	120	77	93	91	194	114	828
ALASKA-CEDAR	4	4	9	12	11	18	63	31	151
WHITEBARK PINE	4	14	8	10	30	2	20	2/	88
WHITE FIR	--	1	1	5	--	1	1	--	8
SUBALPINE LARCH	2	1	1	--	--	--	1	--	5
TOTAL	5,557	7,445	7,863	7,679	6,938	5,993	16,558	12,708	70,741
HARDWOODS:									
QUAKING ASPEN	--	50	103	44	26	18	--	--	242
WESTERN PAPER BIRCH 3/	--	44	23	4	6	6	11	--	94
BLACK COTTONWOOD	--	30	24	41	15	12	75	9	205
OREGON WHITE OAK	--	--	3	1	--	--	9	--	13
RED ALDER	--	1	14	1	--	4	14	--	33
BIGLEAF MAPLE	--	1	--	--	--	--	--	--	1
TOTAL	--	126	167	90	47	41	109	9	588
ALL SPECIES	5,557	7,571	8,029	7,769	6,984	6,034	16,667	12,716	71,329

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Less than 500,000 board feet.

3/Contains minor amounts of other hardwoods.

Table 16—Net annual growth of growing stock and sawtimber on timberland by ownership class and by softwoods and hardwoods, eastern Washington, 1980 1/

OWNERSHIP CLASS	AVERAGE VOLUME	SOFTWOODS	HARDWOODS	ALL SPECIES
	CUBIC METERS PER HECTARE	- - - - - THOUSAND CUBIC METERS - - - - -		
GROWING STOCK: 2/				
NATIONAL FOREST	1	2 671	77	2 748
OTHER PUBLIC	2	3 371	90	3 461
FOREST INDUSTRY	2	1 698	5	1 703
OTHER PRIVATE	2	2 589	83	2 672
ALL OWNERSHIPS	1	10 330	254	10 584
	CUBIC FEET PER ACRE	- - - - - - THOUSAND CUBIC FEET - - - - - -		
GROWING STOCK: 3/				
NATIONAL FOREST	33	94,383	2,704	97,087
OTHER PUBLIC	62	119,132	3,177	122,309
FOREST INDUSTRY	68	60,016	177	60,193
OTHER PRIVATE	68	91,472	2,931	94,404
ALL OWNERSHIPS	52	365,003	8,989	373,993
	BOARD FEET PER ACRE	- - - - - - THOUSAND BOARD FEET - - - - - -		
SAWTIMBER (INTERNATIONAL 1/4-INCH RULE): 4/				
NATIONAL FOREST 5/	152	436,758	6,054	442,812
OTHER PUBLIC	332	639,449	17,127	656,576
FOREST INDUSTRY	394	347,558	6/-588	346,969
OTHER PRIVATE	382	511,580	15,642	527,223
ALL OWNERSHIPS	276	1,935,345	38,235	1,973,580

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 softwoods trees 9.0-inch d.b.h. and larger and hardwood trees 11.0-inch d.b.h. and larger.

5/Sawtimber growth in softwood trees 9.0- to 10.9-inch d.b.h. is unavailable for the Umatilla National Forest.

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

Table 17—Net annual growth on growing stock on timberland by species and ownership class, eastern Washington, 1980 1/

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	28,260	41,413	26,145	48,476	144,293
PONDEROSA PINE	4,635	30,574	10,674	19,494	65,377
LODGEPOLE PINE	13,552	13,226	3,917	7,076	37,770
GRAND FIR	11,437	17,410	10,391	7,941	47,179
WESTERN LARCH	7,196	6,212	3,974	4,984	22,367
ENGELMANN SPRUCE	4,827	3,096	897	264	9,084
SUBALPINE FIR	8,306	2,631	1,973	105	13,016
PACIFIC SILVER FIR	3,162	1,357	1,113	--	5,632
WESTERN REDCEDAR	5,474	2,170	1,639	2,818	12,101
WESTERN HEMLOCK	3,360	42	1,286	74	4,761
MOUNTAIN HEMLOCK	1,100	341	312	--	1,753
WESTERN WHITE PINE	2,452	279	2/-2,429	240	542
ALASKA-CEDAR	551	--	17	--	568
WHITEBARK PINE	51	227	88	--	367
NOBLE FIR	9	154	20	--	183
SUBALPINE LARCH	10	--	--	--	10
TOTAL	94,383	119,132	60,016	91,472	365,003
HARDWOODS:					
QUAKING ASPEN	494	2,105	--	352	2,951
WESTERN PAPER BIRCH 3/	1,781	294	235	1,226	3,537
BLACK COTTONWOOD	237	201	2/-134	1,120	1,424
OREGON WHITE OAK	--	382	76	43	501
RED ALDER	168	180	--	48	396
WHITE ALDER	11	--	--	142	153
BIGLEAF MAPLE	13	15	--	--	27
TOTAL	2,704	3,177	177	2,931	8,989
ALL SPECIES	97,087	122,309	60,193	94,404	373,993

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/Contains minor amounts of other hardwoods.

Table 18—Net annual growth of sawtimber on timberland by species and ownership class, eastern Washington, 1980 1/

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
	THOUSAND BOARD FEET, INTERNATIONAL 1/4-INCH RULE				
SOFTWOODS:					
DOUGLAS-FIR	142,139	236,461	152,326	264,060	794,985
PONDEROSA PINE	29,698	187,204	62,292	113,135	392,329
LODGEPOLE PINE	42,278	35,546	20,249	42,897	140,969
GRAND FIR	53,549	101,695	55,909	51,987	263,139
WESTERN LARCH	29,896	27,224	17,987	24,144	99,251
ENGELMANN SPRUCE	24,848	16,227	6,508	1,082	48,664
SUBALPINE FIR	35,607	14,477	14,920	--	65,003
PACIFIC SILVER FIR	19,588	7,407	7,329	--	34,324
WESTERN REDCEDAR	19,063	9,759	9,034	12,468	50,324
WESTERN HEMLOCK	18,561	252	7,913	1,063	27,790
MOUNTAIN HEMLOCK	5,307	2,025	1,938	--	9,270
WESTERN WHITE PINE	11,958	1,689	2/-9,827	746	4,565
ALASKA-CEDAR	3,869	--	78	--	3,947
WHITEBARK PINE	320	2/-516	767	--	571
NOBLE FIR	60	--	135	--	195
SUBALPINE LARCH	14	--	--	--	14
TOTAL	3/436,758	639,449	347,558	511,580	1,935,345
HARDWOODS:					
QUAKING ASPEN	779	14,389	--	4,024	19,191
WESTERN PAPER BIRCH 4/	2,541	--	--	3,954	6,495
BLACK COTTONWOOD	2,543	1,675	2/-600	7,614	11,232
OREGON WHITE OAK	--	2/-2	13	51	61
RED ALDER	165	1,065	--	--	1,231
BIGLEAF MAPLE	25	--	--	--	25
TOTAL	6,054	17,127	2/-588	15,642	38,235
ALL SPECIES	442,812	656,576	346,969	527,223	1,973,580

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/Sawtimber growth in trees 9.0- to 10.9-inch d.b.h is unavailable for the Umatilla National Forest.

4/Contains minor amounts of other hardwoods.

Table 19—Average annual mortality of growing stock on timberland by species and ownership class, eastern Washington, 1980 1/

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
			THOUSAND CUBIC FEET		
SOFTWOODS:					
DOUGLAS-FIR	11,123	7,741	1,487	2,053	22,404
PONDEROSA PINE	2,021	4,682	2,334	3,518	12,554
LODGEPOLE PINE	3,849	3,194	449	3,376	10,868
GRAND FIR	2,003	2,067	1,401	1,987	7,457
WESTERN LARCH	3,906	4,095	1,435	1,028	10,464
ENGELMANN SPRUCE	2,136	1,459	1,027	168	4,789
SUBALPINE FIR	2,188	512	1,102	--	3,801
PACIFIC SILVER FIR	1,385	146	203	--	1,734
WESTERN REDCEDAR	407	98	--	101	606
WESTERN HEMLOCK	1,142	--	--	45	1,186
MOUNTAIN HEMLOCK	531	237	--	--	768
WESTERN WHITE PINE	1,014	295	2,946	--	4,255
ALASKA-CEDAR	96	--	--	--	96
WHITEBARK PINE	18	138	--	--	156
NOBLE FIR	6	--	--	--	6
SUBALPINE LARCH	5	--	--	--	5
TOTAL	31,836	24,662	12,385	12,274	81,156
HARDWOODS:					
QUAKING ASPEN	38	--	--	461	499
WESTERN PAPER BIRCH 2/	172	--	--	46	218
BLACK COTTONWOOD	84	47	134	58	323
OREGON WHITE OAK	--	69	50	91	210
RED ALDER	9	--	--	--	9
WHITE ALDER	3	--	--	--	3
TOTAL	308	116	185	654	1,262
ALL SPECIES	32,144	24,777	12,569	12,928	82,418

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Contains minor amounts of other hardwoods.

Table 20—Average annual mortality of sawtimber on timberland by species and ownership class, eastern Washington, 1980 1/

SPECIES	NATIONAL FOREST	OTHER PUBLIC	FOREST INDUSTRY	OTHER PRIVATE	ALL OWNERSHIPS
	THOUSAND BOARD FEET, INTERNATIONAL 1/4-INCH RULE				
SOFTWOODS:					
DOUGLAS-FIR	53,630	34,826	6,518	4,853	99,827
PONDEROSA PINE	11,664	22,343	11,179	15,340	60,525
LODGEPOLE PINE	8,309	11,135	1,822	3,064	24,330
GRAND FIR	8,755	11,608	6,243	9,637	36,243
WESTERN LARCH	18,695	19,258	6,812	3,062	47,826
ENGELMANN SPRUCE	10,818	8,249	4,591	403	24,061
SUBALPINE FIR	8,389	1,789	987	--	11,165
PACIFIC SILVER FIR	6,956	820	1,034	--	8,809
WESTERN REDCEDAR	1,896	--	--	632	2,527
WESTERN HEMLOCK	5,760	--	--	--	5,760
MOUNTAIN HEMLOCK	2,466	1,407	--	--	3,873
WESTERN WHITE PINE	3,192	1,819	13,117	--	18,128
ALASKA-CEDAR	453	--	--	--	453
WHITEBARK PINE	94	683	--	--	777
NOBLE FIR	30	--	--	--	30
SUBALPINE LARCH	17	--	--	--	17
TOTAL	141,127	113,937	52,303	36,990	344,357
HARDWOODS:					
QUAKING ASPEN	250	--	--	1,453	1,703
WESTERN PAPER BIRCH 2/	136	--	--	--	136
BLACK COTTONWOOD	116	259	601	--	976
OREGON WHITE OAK	--	141	--	2	142
TOTAL	503	400	601	1,454	2,958
ALL SPECIES	141,631	114,337	52,904	38,444	347,316

Estimates are subject to sampling error.

1/Totals may be off because of rounding.

2/Contains minor amounts of other hardwoods.

Table 21—Timber harvest by ownership class, eastern Washington, 1950-81

YEAR	NATIONAL FOREST			OTHER PUBLIC 2/			PRIVATE			ALL OWNERSHIPS		
	LIVE	DEAD 1/	TOTAL	LIVE	DEAD 1/	TOTAL	LIVE	DEAD 1/	TOTAL	LIVE	DEAD 1/	TOTAL
						THOUSAND BOARD FEET, SCRIBNER SCALE						
1950	3/	3/	123,939	--	--	--	3/	3/	380,898	3/	3/	504,837
1951	3/	3/	146,287	--	--	--	3/	3/	457,809	3/	3/	604,096
1952	157,423	5,675	163,098	--	--	--	484,972	1,952	486,924	642,395	7,627	650,022
1953	3/	3/	201,583	--	--	--	3/	3/	527,421	3/	3/	729,004
1954	195,912	10,600	206,512	--	--	--	518,409	7,968	526,377	714,321	18,568	732,889
1955	153,649	19,108	172,757	187,712	127	187,839	396,177	1,612	397,789	737,538	20,847	758,385
1956	208,851	8,439	217,290	207,646	342	207,988	340,313	1,869	342,182	756,810	10,650	767,460
1957	220,825	7,069	227,894	167,629	91	167,720	356,365	1,306	357,671	744,819	8,466	753,285
1958	240,732	10,059	250,791	189,649	400	190,049	329,794	1,346	331,140	760,175	11,805	771,980
1959	313,576	16,740	330,316	226,682	736	227,418	343,051	1,754	344,805	883,309	19,230	902,539
1960	264,471	8,262	272,733	167,171	1,560	168,731	393,020	3,624	396,644	824,662	13,446	838,108
1961	282,132	6,325	288,457	180,553	11,281	191,834	307,420	9,829	317,249	770,105	27,435	797,540
1962	392,723	7,339	400,062	217,669	655	218,324	270,315	2,946	273,261	880,707	10,940	891,647
1963	404,600	7,325	411,925	251,964	1,267	253,231	277,550	1,666	279,216	934,114	10,258	944,372
1964	442,286	8,280	450,566	287,634	384	288,018	297,720	376	298,096	1,027,640	9,040	1,036,680
1965	426,612	6,478	433,090	349,366	308	349,674	256,809	20	256,829	1,032,787	6,806	1,039,593
1966	425,576	2,600	428,176	333,087	998	334,085	267,196	1,435	268,631	1,025,859	5,033	1,030,892
1967	426,404	21,598	448,002	363,411	1,909	365,320	250,884	75	250,959	1,040,699	23,582	1,064,281
1968	463,693	8,850	472,543	408,246	5,649	413,895	290,377	73	290,450	1,162,316	14,572	1,176,888
1969	413,633	12,978	426,611	358,468	6,181	364,649	275,365	1,718	277,083	1,047,466	20,877	1,068,343
1970	326,375	6,488	332,863	272,713	4,240	276,953	280,166	702	280,868	879,254	11,430	890,684
1971	333,365	52,602	385,967	397,301	6,186	403,487	279,186	1,472	280,658	1,009,852	60,260	1,070,112
1972	402,179	79,580	481,759	386,992	34,853	421,845	284,585	1,127	285,712	1,073,756	115,560	1,189,316
1973	386,652	52,518	439,170	378,406	16,115	394,521	382,702	2,475	385,177	1,147,760	71,108	1,218,868
1974	374,135	8,735	382,870	307,811	68,965	376,776	378,482	4,497	382,979	1,060,428	82,197	1,142,625
1975	318,614	21,233	339,847	322,822	11,930	334,752	338,031	263	338,294	979,467	33,426	1,012,893
1976	320,110	43,786	363,896	351,826	1,470	353,296	408,408	7,174	415,582	1,080,344	52,430	1,132,774
1977	290,398	31,405	321,803	414,021	1,228	415,249	428,951	3,139	432,090	1,133,370	35,772	1,169,142
1978	292,847	46,596	339,443	395,598	24,687	420,285	457,739	3,445	461,184	1,146,184	74,728	1,220,912
1979	285,687	5,682	291,369	381,886	8,476	390,362	443,461	2,894	446,355	1,111,034	17,052	1,128,086
1980	313,710	3,154	316,864	302,244	31,068	333,312	402,551	6,672	409,223	1,018,505	40,894	1,059,399
1981	293,898	3,207	297,105	258,076	11,686	269,762	361,970	4,884	366,854	913,944	19,777	933,721

Estimates are subject to sampling error.

1/Includes snags and down material existing before logging.

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

3/Data not available.

Source: 1950-76: Washington timber harvest reports by year (published by Pacific Northwest Forest and Range Experiment Station); 1977-81: Timber harvest reports, State of Washington, Department of Natural Resources.

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Metric Equivalents

1,000 acres = 404.7 hectares (ha)
1,000 cubic feet = 28.3 cubic meters (m^3)
1 cubic foot per acre = 0.07 cubic meter per hectare (m^3/ha)
1 foot = 0.3048 meter (m)
1 inch = 2.54 centimeters (cm)
1 mile = 1.609 kilometers (km)

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This report summarizes a 1980 timber resource inventory of the 16 forested counties in Washington east of the crest of the Cascade Range. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

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

The **Forest Service** of the U.S. Department of Agriculture is dedicated to the principle of multiple use management of the Nation's forest resources for sustained yields of wood, water, forage, wildlife, and recreation. Through forestry research, cooperation with the States and private forest owners, and management of the National Forests and National Grasslands, it strives — as directed by Congress — to provide increasingly greater service to a growing Nation.

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