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Timber Resource Statistics for All Forest Land, Except National Forests, in Eastern Oregon

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Abstract

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This report summarizes a 1987 timber resource inventory of all forest land, except National Forests, in the 17 counties (Baker, Crook, Deschutes, Gilliam, Grant, Harney, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler Counties) in eastern Oregon. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

Keywords: Forest surveys, statistics (forest), timber resources, resources (forest), Oregon (eastern).

Summary

The eastern Oregon resource area totals 42,238,891 acres, of which forest land exclusive of National Forests totals 5,984,000 acres. An estimated 2,978,000 acres are classified as timberland. This timberland has an estimated 4.7 billion cubic feet of standing timber, and 43 percent of this volume is owned by forest industry.

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 research and experiment stations, conduct forest resource inventories throughout the 50 States. The Pacific Northwest Research Station at Portland, Oregon, is responsible for inventories in Alaska, California, Hawaii, Oregon, and Washington.

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Introduction

This report presents statistics from the latest inventory of timber resources for the 17 counties (Baker, Crook, Deschutes, Gilliam, Grant, Hamey, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler) in eastern Oregon. Eastern Oregon was first inventoried in 1935-37 and was reinventoried between 1953 and 1969 and in 1977.

Field data for all forest lands, except National Forests, were collected in summer 1987 by the Forest Inventory and Analysis Work Unit (FIA) of the Pacific Northwest Research Station. Data for the National Forests (U.S. Department of Agriculture, Forest Service) will be presented with these data in a later report.

Scientific names of trees (Little 1979) are listed on page *7* of this report. See "Terminology" (p. 3) for definitions of terms used in this report.

Inventory Procedures

The data for this inventory were gathered on a systematic grid of photo points and field plots distributed across all iands in eastern Oregon except National Forests. The sampling design was double sampling for stratification (Cochran 1977). For sampling purposes, the inventory area was divided into two zones: a timberland zone and a nontimberland zone.

The photo sample included 19,602 permanent photo points in the timberland zone and 49,602 permanent photo points in the nontimberland zone. Each point was placed in a major land class (timberland, other forest, nonforest). Each forest point was also placed in an ownership class, as determined from county records. Each timberland point was further studied on aerial photos and placed in one of several **forest** condition classes.

The field grid was a systematic subsample of the photo sample. In the timberland zone, 1,237 of the photo points—about 1 in 16—were also a part of the field grid. In the nontimberland zone, the field subsample was 786—about 1 photo point in *64.* All plots that had any chance of being forest land were checked in the field. Of these, the 468 plots that proved to be timberland or "low productivity" forest land were either established or—if already in place—remeasured. An additional 57 plots were established in juniper and oak woodlands.

The field sampling unit used for this inventory of eastern Oregon was a cluster of five subplots distributed over an area of about 8 acres. New plots were established on Bureau of Land Management (BLM) lands, where no plots had been previously established. On other lands in central Oregon (Crook, Deschutes, Gilliam, Jefferson, Klamath, Lake, Sherman, Wasco, and Wheeler Counties), plots established in 1977 were revisited to provide data for the current inventory. In the Blue Mountain Unit (Baker, Grant, Harney, Malheur, Morrow, Umatilla, and Union Counties), new five-point clusters were established at each field location. In addition, previously established 10-point clusters were reexamined to obtain data on forest growth and mortality.

Reliability of Inventory Data

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

Owner	Timberland area	Net volume	Gross annual growth
	Thousand acres	*Million cubic feet*	
Other public	522 ± 38	1,309 ± 130	33 ± 3
Forest industry	1,523 ± 42	2,024 ± 116	67 ± 4
Farmer and miscellaneous private	933 ± 51	1,402 ± 115	48 ± 4
All owners	2,978 ± 76	4,735 ± 208	148 ± 6

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 is within the range of 2,978,000 ± 76,000 (2,902,000 to 3,054,000) acres.

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

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

Timberland area	Confidence interval	
	By owner	By type or class
	Thousand acres	
2,000	±53	±85
1,500	±45	±77
1,000	±36	±66
800	±31	±61
600	±26	±55
400	±21	±48
200	±14	±34
100	±9	±25
50	±6	±18
25	±4	±13
15	±3	±10
10	±2	±8
5	±2	±5

Growing stock volume and confidence interval	Gross growth and confidence interval
Million cubic feet	*Thousand cubic feet*
6,000f 283	100,000f 4,732
4,000± 218	50,000± 3,474
2,000± 140	25,000± 2,550
1,000 ± 90	15,000± 2,030.
800 ± 78	10,000f 1,694
600 ± 65	5,000f 1,148
400f 50	1,000 ± 372
200k 32	500 ± 230
100 ± 20	100 ± 75
50 ± 13	
25 ± 8	
15f 6	
10 ± 5	
5 ± 3	

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

Terminology

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

Chaparral—Areas covered with heavily branched dwarf trees or shrubs, usually evergreen, the crown canopy of which at maturity usually covers more than 50 percent of the ground. The principal genera are ***Arctostaphylos, Baccharis, Ceanothus, Cercocarpus,*** and ***Garrya***.

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

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

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

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

Farmer owned—Lands owned by an individual or corporate owner who produces agricultural products but does not meet the definition of a forest industry.

Forest industry lands—Lands owned by companies or individuals who hold their lands for timber production.

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 land, reserved—Forest land withdrawn from timber production through statute or ordinance. Included are National, State, and county parks; and other reserved lands.

Forest types—Stands with 50 percent or more stocking in live conifer trees classed as softwood types; stands with a majority of stocking in live hardwood trees classed as hardwood types. The individual forest type is determined by plurality of stocking by species of live softwood or hardwood trees.

Gross annual growth—The increase in volume of trees during a specified year. Components of gross annual growth of trees: (a) the increment in sound volume of trees alive at the beginning of a specified year and surviving to year end, plus (b) the sound volume of trees reaching sawtimber or poletimber size during the year.

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

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

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

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

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

Low-productivity land–Forest land growing trees of industrial quality, but not able to grow 20 cubic feet per acre per year.

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

Miscellaneous private owners—All private owners not otherwise classified.

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

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

Native American lands—Tribal and alloted lands held in trust by the Federal Government.

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

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

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

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

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

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

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

Poletimber trees—Live trees of commercial species at least 5.0 inches 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 in d.b.h. for softwoods and at least 11.0 inches in d.b.h. for hardwoods, containing 25 percent or more sound wood volume and at least one merchantable 12-foot log if softwood or one merchantable 8-foot log if hardwood.

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

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

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

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

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

Sawtimber volume—Net volume of sawtimber trees measured in board feet. Net 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 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 hatvest—Volume of roundwood removed from forest land for products.

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

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

Timberland, reserved—Private or public land withdrawn from timber utilization through statute, ordinance, or administrative order but that otherwise qualifies as timberland.

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

Names of Trees

Common name	Scientific name
Softwoods:	
Douglas-fir	*Pseudotsuga menziesii* (Mirb.) Franco
Engelmann spruce	*Picea engelmannii* Parry ex Engelm.
Grand fir	*Abies grandis* (Dougl. ex D. Don.) Lindl.
Incense-cedar	*Libocedrus decurrens* Torr.
Jeffrey pine	*Pinus jeffreyi* Grev. & Balf.
Lodgepole pine	*Pinus contorta* Dougl. ex Loud. var. *latifolia* Engelm.
Mountain hemlock	*Tsuga mertensiana* (Bong.) Carr.
Noble fir	*Abies procera* Rehd.
Pacific silver fir	*Abies amabilis* Dougl. ex Forbes
Ponderosa pine	*Pinus ponderosa* Dougl. ex Laws.
Shasta red fir	*Abies magnifica* var. *shastensis* Lemm.
Subalpine fir	*Abies lasiocarpa* (Hook.) Nutt.
Sugar pine	*Pinus lambertiana* Dougl.
Western hemlock	*Tsuga heterophylla* (Raf.) Sarg.
Western juniper	*Juniperus occidentalis* Hook.
Western larch	***Larix*** *occidentalis* Nutt.
Western redcedar	*Thuja plicata* Donn ex D. Don
Western white pine	*Pinus monticola* Dougl. ex D. Don
White fir	*Abies concolor* (Gord. & Glend.) Lindl. ex Hildebr.
Whitebark pine	*Pinus albicaulis* Engelm.
Hardwoods:	
Black cottonwood	*Populus trichocarpa* Torr. & Gray
Oregon white oak	*Quercus garryana* Dougl. ex Hook.
Quaking aspen	*Populus tremuloides* Michx.
White alder	*Alnus rhombifolia* Nutt.

Tables

TABLE 1--AREA OF LAND, EXCLUSIVE OF NATIONAL FORESTS, BY LAND CLASS AND COUNTY, EASTERN OREGON, JANUARY 1, 1988 [a] [b]

COUNTY	FOREST LAND: TIMBERLAND	FOREST LAND: RESERVED TIMBERLAND	FOREST LAND: OTHER FOREST	FOREST LAND: TOTAL	NONFOREST LAND[c]	ALL CLASSES
	THOUSAND ACRES					
BAKER	112	--	67	179	1,137	1,316
CROOK	94	--	398	491	950	1,441
DESCHUTES	110	2	141	252	720	972
GILLIAM	1	--	18	19	761	780
GRANT	254	--	267	521	810	1,331
HARNEY	27	--	372	399	5,544	5,943
JEFFERSON	190	--	250	440	438	879
KLAMATH	791	160	285	1,237	779	2,016
LAKE	285	1	294	580	3,596	4,176
MALHEUR	10	--	107	117	6,202	6,319
MORROW	69	--	15	85	1,074	1,158
SHERMAN	--	--	12	12	519	531
UMATILLA	182	4	55	241	1,415	1,656
UNION	216	1	50	267	415	682
WALLOWA	242	1	59	301	580	882
WASCO	237	1	222	460	913	1,373
WHEELER	159	--	225	383	536	919
ALL COUNTIES	2,978	170	2,836	5,984	26,389	32,374

-- = none found or less than 500 acres.

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

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

[d] Land area from 1980 Census of Population, No. 39, U.S. Department of Commerce, Bureau of Census, Washington D.C.

TABLE 2--AREA OF TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY OWNER AND COUNTY, EASTERN OREGON, JANUARY 1, 1988 [a] [b]

COUNTY	PUBLIC						PRIVATE			ALL OWNERSHIPS
	DUREAU OF LAND MANAGEMENT	NATIVE AMERICAN	OTHER FEDERAL	STATE	COUNTY AND MUNICIPAL	TOTAL	FOREST INDUSTRY	FARMER AND MISCELLANEOUS	TOTAL	
	THOUSAND ACRES									
BAKER	15	--	--	3	--	18	18	78	96	112
CROOK	10	--	--	--	--	10	57	27	84	94
DESCHUTES	18	--	--	--	--	19	58	33	91	110
GILLIAM	--	--	--	--	--	--	--	1	1	1
GRANT	28	--	--	5	--	33	86	135	221	254
HARNEY	8	--	--	--	--	8	2	18	20	27
JEPFERSON	--	112	--	--	--	112	64	14	78	190
KLAMATH	73	--	1	25	--	99	572	120	692	791
LAKE	4	--	--	--	1	5	230	49	279	285
MALHEUR	2	--	--	--	--	2	1	6	7	10
MORROW	--	--	--	--	--	--	42	26	69	69
SHERMAN	--	--	--	--	--	--	--	--	--	--
UMATILLA	2	14	--	3	2	20	65	97	162	182
UNION	3	1	--	2	--	6	93	118	211	216
WALLOWA	8	--	--	3	--	11	121	110	231	242
WASCO	2	160	--	8	3	173	20	44	64	237
WIIEELER	6	--	--	--	--	6	96	56	152	159
ALL COUNTIES	179	287	1	49	6	522	1,523	933	2,457	2,978

-- = none found or less than 500 acres.

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 3--AREA OF STOCKABLE TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY SITE CLASS AND OWNER, EASTERN OREGON, JANUARY 1, 1988

SITE CLASS[a]	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
CUBIC FEET	- - - - - - - THOUSAND ACRES - - - - - - -			
225 OR MORE	--	--	--	--
165 TO 224	4	--	--	4
120 TO 164	6	9	21	36
85 TO 119	47	97	41	186
50 TO 84	151	477	277	905
20 TO 49	307	920	582	1,809
ALL CLASSES	515	1,503	921	2,939

-- = none found or less than 500 acres.

[a]Subject to sampling error.

[b]Totals may be off because of rounding.

[c]Capacity for cubic-foot annual growth per acre at culmination of mean annual growth in fully stocked natural stands. The areas shown here exclude 39,000 acres of included nonforest land less than 1 acre.

TABLE 4--AREA OF TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY STAND-SIZE CLASS AND OWNER, EASTERN OREGON, JANUARY 1, 1988 [a] [b]

STAND-SIZE CLASS	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
		THOUSAND ACRES		
SAWTIMBER STANDS:				
LARGE SAWTIMBER[c]	21	35	7	62
SMALL SAWTIMBER[d]	364	915	555	1,834
TOTAL	385	949	561	1,896
POLETIMBER STANDS	83	204	186	472
SAPLING AND SEEDLING STANDS	47	325	122	494
NONSTOCKED AREAS	8	45	63	116
ALL CLASSES	522	1,523	933	2,978

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

[c] Includes trees 21.0-inch d.b.h. and larger.

[d] 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, EXCLUSIVE OF NATIONAL FORESTS, BY FOREST TYPE AND OWNER, EASTERN OREGON, JANUARY 1, 1988[a] [b]

FOREST TYPE	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
		THOUSAND ACRES		
PONDEROSA PINE	217	707	378	1,302
DOUGLAS-FIR	161	210	229	600
LODGEPOLE PINE	68	220	128	416
WHITE FIR	12	226	49	287
GRAND FIR	20	81	44	144
WESTERN LARCH	--	22	22	43
MOUNTAIN HEMLOCK	26	--	--	26
ENGELMANN SPRUCE	6	9	--	15
WESTERN JUNIPER	--	--	7	7
SHASTA RED FIR	4	--	--	4
INCENSE-CEDAR	--	4	--	4
QUAKING ASPEN	--	--	7	7
OREGON WHITE OAK	--	--	7	7
NONSTOCKED	8	45	63	116
ALL TYPES	522	1,523	933	2,978

-- = none found or less than 500 acres.

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 6--AREA OF RESERVED TIMBERLAND AND OTHER FOREST LAND, EXCLUSIVE OF NATIONAL FORESTS, BY LAND CLASS, FOREST TYPE, AND OWNER, EASTERN OREGON, JANUARY 1, 1988 [a] [b]

LAND CLASS AND FOREST TYPE	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
		THOUSAND ACRES		
TIMBERLAND, RESERVED:				
LODGEPOLE PINE	85	--	--	85
PONDEROSA PINE	56	--	--	56
TRUE FIRS	24	--	--	24
DOUGLAS-FIR	2	--	--	2
MIXED CONIFER	1	--	--	1
ALL TIMBERLAND, RESERVED			--	170
OTHER FOREST LAND:				
JUNIPER	968	103	1,151	2,221
PONDEROSA PINE	113	80	171	364
OAK	14	--	87	100
CHAPARRAL	7	--	63	70
DOUGLAS-FIR	20	5	8	32
NONSTOCKED	7	7	--	14
WHITE FIR	--	--	7	7
SUBALPINE FIR	--	7	--	7
LODGEPOLE PINE	--	7	--	7
MOUNTAIN HEMLOCK	7	--	--	7
WILLOW	7	--	--	7
ALL OTHER FOREST LAND	1,143	209	1,487	2,836

-- = none found or less than 500 acres.

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 7--VOLUME OF TIMBER ON TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY CLASS OF TIMBER AND BY SOFTWOODS AND HARDWOODS, EASTERN OREGON, JANUARY 1, 1988

CLASS OF TIMBER	SOFTWOODS	HARDWOODS	ALL SPECIES
	MILLION CUBIC FEET		
SAWTIMBER TREES:			
SAW-LOG PORTION	3,897	6	3,903
UPPER-STEM PORTION	184	2	185
TOTAL	4,081	8	4,089
POLETIMBER TREES	632	14	646
ALL GROWING STOCK	4,713	22	4,735
SOUND CULL TREES	26	6	31
ROTTEN CULL TREES	21	2	23
SALVABLE DEAD TREES	68	--	68
ALL TIMBER	4,828	29	4,857

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

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 8--VOLUME OF GROWING STOCK AND SAWTIMBER ON TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY OWNER AND BY SOFTWOODS AND HARDWOODS, EASTERN OREGON, JANUARY 1, 1988[a,b]

CLASS OF TIMBER AND OWNER	AVERAGE VOLUME	SOFTWOODS	HARDWOODS	ALL SPECIES
	CUBIC FEET PER ACRE	- - - MILLION CUBIC FEET - - -		
GROWING STOCK:[c]				
OTHER PUBLIC	2,508	1,307	3	1,309
FOREST INDUSTRY	1,329	2,017	7	2,024
FARMER AND MISCELLANEOUS PRIVATE	1,503	1,389	13	1,402
ALL OWNERS	1,590	4,713	22	4,735
	BOARD FEET PER ACRE	- - - MILLION BOARD FEET - - -		
SAWTIMBER (SCRIBNER RULE):[d]				
OTHER PUBLIC	10,728	5,600	--	5,600
FOREST INDUSTRY	4,995	7,594	13	7,608
FARMER AND MISCELLANEOUS PRIVATE	5,478	5,095	16	5,111
ALL OWNERS	6,151	18,289	30	18,319

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

[a]Subject to sampling error.

[b]Totals may be off because of rounding.

[c]Includes trees 5.0-inch d.b.h. and larger.

[d]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, EXCLUSIVE OF NATIONAL FORESTS, BY OWNER AND COUNTY, EASTERN OREGON, JANUARY 1, 1988 [a] [b]

COUNTY	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
		MILLION CUBIC FEET		
GROWING STOCK: [c]				
BAKER	33	31	134	197
CROOK	17	82	39	137
DESCHUTES	50	70	41	161
GILLIAM	--	--	1	1
GRANT	56	142	211	409
HARNEY	13	3	24	40
JEFFERSON	322	62	13	398
KLAMATH	186	661	148	995
LAKE	12	296	71	379
MALHEUR	3	3	8	14
MORROW	--	67	50	117
SHERMAN	--	--	--	--
UMATILLA	54	103	161	318
UNION	15	153	200	369
WALLOWA	23	190	178	391
WASCO	514	27	47	588
WHEELER	12	134	77	223
ALL COUNTIES	1,309	2,024	1,402	4,735
		MILLION BOARD FEET		
SAWTIMBER (SCRIBNER RULE): [d]				
BAKER	129	112	490	731
CROOK	60	317	143	519
DESCHUTES	230	273	148	651
GILLIAM	--	--	2	2
GRANT	224	520	780	1,523
HARNEY	49	9	89	147
JEFFERSON	1,412	233	47	1,692
KLAMATH	745	2,496	541	3,782
LAKE	48	1,149	258	1,455
MALHEUR	11	11	30	51
MORROW	--	245	180	425
SHERMAN	--	--	--	--
UMATILLA	258	378	592	1,228
UNION	68	558	720	1,345
WALLOWA	97	691	633	1,421
WASCO	2,226	103	168	2,497
WHEELER	45	515	291	851
ALL COUNTIES	5,600	7,608	5,111	18,319

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

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

[c] Includes trees 5.0-inch d.b.h. and larger.

[d] 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, EXCLUSIVE OF NATIONAL FORESTS, BY SPECIES AND OWNER, EASTERN OREGON, JANUARY 1, 1988 [a] [b]

SPECIES	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
	MILLION CUBIC FEET			
SOFTWOODS:				
PONDEROSA PINE	358	721	600	1,678
DOUGLAS-FIR	356	393	383	1,132
WHITE FIR/GRAND FIR	157	571	208	936
LODGEPOLE PINE	146	230	110	485
WESTERN LARCH	14	57	65	136
MOUNTAIN HEMLOCK	87	--	--	87
ENGELMANN SPRUCE	59	6	15	79
INCENSE-CEDAR	13	31	7	50
PACIFIC SILVER FIR	31	--	--	31
SHASTA RED FIR	28	--	--	28
NOBLE FIR	18	--	--	18
WESTERN REDCEDAR	14	--	--	14
SUGAR PINE	3	8	--	11
WESTERN HEMLOCK	11	--	--	11
SUBALPINE FIR	5	1	2	8
WESTERN WHITE PINE	6	--	--	6
WHITEBARK PINE	2	--	--	2
JEFFREY PINE	1	--	--	1
TOTAL	1,307	2,017	1,389	4,713
HARDWOODS:				
OREGON WHITE OAK	3	5	1	9
QUAKING ASPEN	--	--	7	7
WHITE ALDER	--	--	3	3
BLACK COTTONWOOD	--	1	1	3
TOTAL	3	7	13	22
ALL SPECIES	1,309	2,024	1,402	4,735

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

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 11--VOLUME OF SAWTIMBER ON TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS[a] BY SPECLES AND OWNER, EASTERN OREGON, JANUARY 1, 1988[b]

SPECIES	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
	MILLION BOARD FEET. SCRIBNER RULE			
SOFTWOODS:				
PONDEROSA PINE	1,680	2,874	2,246	6,800
DOUGLAS-FIR	1,571	1,493	1,457	4,522
WHITE FIR/GRAND FIR	555	2,108	748	3,411
LODGEPOLE PINE	500	741	351	1,592
WESTERN LARCH	71	197	217	486
MOUNTAIN HEMLOCK	375	--	--	375
ENGELMANN SPRUCE	318	22	58	397
INCENSE-CEDAR	35	124	12	171
PACIFIC SILVER FIR	112	--	--	112
SHASTA RED FIR	170	--	--	170
NOBLE FIR	56	--	--	56
WESTERN REDCEDAR	60	--	--	60
SUGAR PINE	20	32	--	52
WESTERN HEMLOCK	20	--	--	20
SUBALPINE FIR	18	3	5	26
WESTERN WHITE PINE	32	--	--	32
WHITEBARK PINE	6	--	--	6
JEFFREY PINE	2	--	--	2
TOTAL	5,600	7,594	5,095	18,289
HARDWOODS:				
OREGON WHITE OAK	--	7	--	7
QUAKING ASPEN	--	--	8	8
BLACK COTTONWOOD	--	7	8	15
TOTAL	--	13	16	30
ALL SPECIES	5,600	7,608	5,111	18,319

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

[a]Subject to sampling error.

[b]Totals may be off because of rounding.

TABLE 12--VOLUME OF GROWING STOCK ON TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY SPECIES AND DIAMETER CLASS, EASTERN OREGON, JANUARY 1, 1988 [a] [b]

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)										
	5.0-6.9	7.0-8.9	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 AND LARGER	ALL CLASSES
	MILLION CUBIC FEET										
SOFTWOODS:											
PONDEROSA PINE	64	121	182	168	216	198	153	127	262	187	1,678
DOUGLAS-FIR	35	83	143	154	147	126	105	77	177	86	1,132
WHITE FIR/GRAND FIR	57	99	107	164	95	88	68	47	108	102	936
LODGEPOLE PINE	45	69	80	101	75	46	33	18	17	1	485
WESTERN LARCH	6	16	23	28	22	13	16	3	7	2	136
MOUNTAIN HEMLOCK	2	4	3	6	7	14	17	4	29	--	87
ENGELMANN SPRUCE	2	3	4	4	7	6	7	14	17	15	79
INCENSE-CEDAR	4	4	2	2	5	3	1	3	4	21	50
PACIFIC SILVER FIR	2	3	5	8	4	4	1	4	2	--	31
SHASTA RED FIR	--	--	--	--	1	1	2	2	8	14	28
NOBLE FIR	2	4	--	5	--	--	--	3	4	--	18
WESTERN REDCEDAR	--	1	--	1	2	1	1	2	5	--	14
SUGAR PINE	--	--	2	1	1	--	--	1	1	5	11
WESTERN HEMLOCK	2	3	3	2	--	--	--	--	--	--	11
SUBALPINE FIR	--	--	3	2	--	2	1	1	--	--	8
WESTERN WHITE PINE	--	--	--	--	2	--	--	--	--	4	6
WHITEBARK PINE	--	1	--	1	--	--	1	--	--	--	2
JEFFREY PINE	--	--	--		--	--	--	--	--	--	1
TOTAL	221	411	558	648	584	502	406	306	640	437	4,713
HARDWOODS:											
OREGON WHITE OAK	2	3	1	1	2	--	--	--	--	--	9
QUAKING ASPEN	--	2	3	1	--	--	1	--	--	--	7
WHITE ALDER	1	3	--	--	--	--	--	--	--	--	3
BLACK COTTONWOOD	--	--	--	--	--	--	1	--	--	1	3
TOTAL	3	8	4	2	2	--	3	--	--	1	22
ALL SPECIES	224	419	561	650	586	502	409	306	640	438	4,735

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

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 13--VOLUME OF SAWTIMBER ON TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY SPECIES AND DIAMETER CLASS, EASTERN OREGON, JANUARY 1, 1988 [a] [b]

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)								
	9.0-10.9	11.0-12.9	13.0-14.9	15.0-16.9	17.0-18.9	19.0-20.9	21.0-28.9	29.0 AND LARGER	ALL CLASSES
	MILLION BOARD FEET, SCRIBNER RULE								
SOFTWOODS:									
PONDEROSA PINE	502	596	883	887	722	637	1,417	1,155	6,800
DOUGLAS-FIR	433	582	621	570	510	389	929	488	4,522
WHITE FIR/GRAND FIR	313	629	410	387	329	233	551	559	3,411
LODGEPOLE PINE	261	413	337	222	168	90	94	7	1,592
WESTERN LARCH	75	109	98	62	77	14	39	12	486
MOUNTAIN HEMLOCK	9	23	28	62	84	17	152	--	375
ENGELMANN SPRUCE	12	17	30	27	35	79	99	98	397
INCENSE-CEDAR	2	5	17	13	3	15	19	98	171
PACIFIC SILVER FIR	16	30	16	16	7	19	9	--	112
SHASTA RED FIR	--	--	4	5	8	10	48	95	170
NOBLE FIR	--	22	--	--	--	15	19	--	56
WESTERN REDCEDAR	--	5	lo	6	7	8	25	--	60
SUGAR PINE	5	3	4	--	--	6	5	29	52
WESTERN HEMLOCK	11	9	--	--	--	--	--	--	20
SUBALPINE FIR	8	6	--	7	3	3	--	--	26
WESTERN WHITE PINE	--	--	9	--	--	--	--	23	32
WHITEBARK PINE	--	2	--	--	3	--	--	--	6
JEFFREY PINE	--	2	--	--	--	--	--	--	2
TOTAL	1,646	2,454	2,467	2,264	1,956	1,533	3,406	2,563	18,289
HARDWOODS:									
OREGON WHITE OAK	--	3	4	--	--	--	--	--	7
QUAKING ASPEN	--	3	--	--	5	--	--	--	8
BLACK COTTONWOOD	--	--	--	--	7	--	--	8	15
TOTAL	--	6	4	--	11	--	--	8	30
ALL SPECIES	1,646	2,460	2,472	2,264	1,967	1.533	3,406	2,572	18,319

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

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 14--GROSS ANNUAL GROWTH OF GROWING STOCK ON TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY OWNER AND BY SOFTWOODS AND HARDWOODS, EASTERN OREGON, 1987 [a] [b]

OWNER	AVERAGE VOLUME	SOFTWOODS	HARDWOODS	ALL SPECIES
	CUBIC FEET PER ACRE	- - - THOUSAND CUBIC FEET - - -		
OTHER PUBLIC	63	32,799	51	32,850
FOREST INDUSTRY	44	67,028	80	67,108
FARMERANDMISCELLANEOUS PRIVATE	51	47,687	294	47,982
ALL OWNERSHIPS	50	147,515	425	147,940

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 15--GROSS ANNUAL GROWTH OF GROWING STOCK ON TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY SPECIES AND OWNER, EASTERN OREGON, 1987 [a] [b]

SPECIES	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
		THOUSAND CUBIC FEET		
SOFTWOODS:				
PONDEROSA PINE	9,928	24,233	20,896	55,057
DOUGLAS-FIR	9,815	13,760	12,733	36,309
WHITE FIR/GRAND FIR	5,095	19,240	7,530	31,865
LODGEPOLE PINE	4,164	6,431	3,129	13,724
WESTERN LARCH	239	1,870	2,465	4,574
MOUNTAIN HEMLOCK	754	--	--	754
ENGELMANN SPRUCE	510	201	664	1,375
INCENSE-CEDAR	208	922	139	1,268
PACIFIC SILVER FIR	435	--	--	435
SHASTA RED FIR	460	--	--	460
NOBLE FIR	470	--	--	470
WESTERN REDCEDAR	138	--	--	138
SUGAR PINE	61	305	--	366
WESTERN HEMLOCK	241	--	--	241
SUBALPINE FIR	97	65	130	292
WESTERN WHITE PINE	52	--	--	52
WHITEBARK PINE	47	--	--	47
JEFFREY PINE	86	--	--	86
TOTAL	32,799	67,028	47,687	147,515
HARDWOODS:				
OREGON WHITE OAK	51	70	28	148
QUAKING ASPEN	--	--	184	184
WHITE ALDER	--	--	79	79
BLACK COTTONWOOD	--	10	3	13
TOTAL	51	80	294	425
ALL SPECIES	32,850	67,108	47,982	147,940

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

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 16--AVERAGE ANNUAL MORTALITY OF GROWING STOCK ON TIMBERLAND, EXCLUSIVE OF NATIONAL FORESTS, BY SPECIES AND OWNER, EASTERN OREGON, 1987 [a] [b]

SPECIES	OTHER PUBLIC	FOREST INDUSTRY	FARMER AND MISCELLANEOUS PRIVATE	ALL OWNERS
		THOUSAND CUBIC FEET		
SOFTWOODS:				
PONDEROSA PINE	825	2,174	4,061	7,060
DOUGLAS-FIR	1,710	876	1,393	3,980
WHITE FIR/GRAND FIR	1,213	3,997	1,779	6,989
LODGEPOLE PINE	2,465	3,773	5,183	11,421
WESTERN LARCH	201	672	838	1,711
MOUNTAIN HEMLOCK	415	--	--	415
ENGELMANN SPRUCE	3,167	48	116	3,331
PACIFIC SILVER FIR	161	--	--	161
SHASTA RED FIR	585	--	--	585
SUGAR PINE	1	48	--	50
WESTERN HEMLOCK	118	--	--	118
SUBALPINE FIR	84	5	13	102
WESTERN WHITE PINE	1	--	--	1
WHITEBARK PINE	100	--	--	100
TOTAL	11,047	11,593	13,383	36,023
HARDWOODS:				
QUAKING ASPEN	--	--	154	154
WHITE ALDER	--	--	3	3
BLACK COTTONWOOD	--	2	13	15
TOTAL	--	2	169	172
ALL SPECIES	11,047	11,595	13,553	36,194

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

[a] Subject to sampling error.

[b] Totals may be off because of rounding.

TABLE 17--TIMBER HARVEST BY OWNER, EASTERN OREGON, 1962-87

YEAR	NATIONAL FOREST	OTHER PUBLIC	PRIVATE	ALL OWNERS
	THOUSAND BOARD FEET, SCRIBNER RULE			
1962	852,700	73,954	541,794	1,468,448
1963	966,700	98,102	489,997	1,554,799
1964	1,064,700	115,750	544,950	1,725,400
1965	1,181,800	99,297	582,238	1,863,335
1966	1,089,900	106,583	606,099	1,802,582
1967	1,133,900	138,287	468,411	1,740,598
1968	1,182,548	141,944	617,817	1,942,309
1969	1,230,907	126,985	699,619	2,057,511
1970	1,017,762	104,204	662,096	1,784,062
1971	1,147,075	125,729	843,615	2,116,419
1972	1,319,580	124,597	704,515	2,148,692
1973	1,237,425	150,196	559,961	1,947,582
1974	1,178,107	145,666	847,782	2,171,555
1975	1,151,508	136,251	715,804	2,003,563
1976	1,257,108	145,017	571,914	1,974,039
1977	1,123,840	160,467	526,642	1,810,949
1978	1,191,396	149,838	485,332	1,826,566
1979	998,422	147,995	435,030	1,581,447
1980	836,395	125,557	572,910	1,534,862
1981	795,876	115,148	476,270	1,387,294
1982	736,877	144,455	590,829	1,472,161
1983	1,202,214	159,539	565,784	1,927,537
1984	1,192,934	134,084	241,154	1,568,172
1985	1,401,873	127,194	314,301	1,843,368
1986	1,528,419	140,122	418,257	2,086,798
1987	1,366,157	161,003	484,351	2,011,511

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Metric Equivalents

1,000 acres = 404.7 hectares
1,000 cubic feet = 28.3 cubic meters
1 cubic foot per acre = 0.07 cubic meter per hectare
1 foot = 0.3048 meter
1 inch = 2.34 centimeters
1 mile = 1.609 kilometers

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Gedney, Donald R.; Bassett, Patricia M.; Mei, Mary A. 1989. Timber resource statistics for all forest land, except National Forests, in eastern Oregon. Resour. Bull. PNW-RB-164. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 25 p.

This report summarizes a 1987 timber resource inventory of all forest land, except National Forests, in the 17 counties (Baker, Crook, Deschutes, Gilliam, Grant, Harney, Jefferson, Klamath, Lake, Malheur, Morrow, Sherman, Umatilla, Union, Wallowa, Wasco, and Wheeler Counties) in eastern Oregon. Detailed tables of forest area, timber volume, growth, mortality, and harvest are presented.

Keywords: Forest surveys, statistics (forest), timber resources, resources (forest), Oregon (eastern).

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