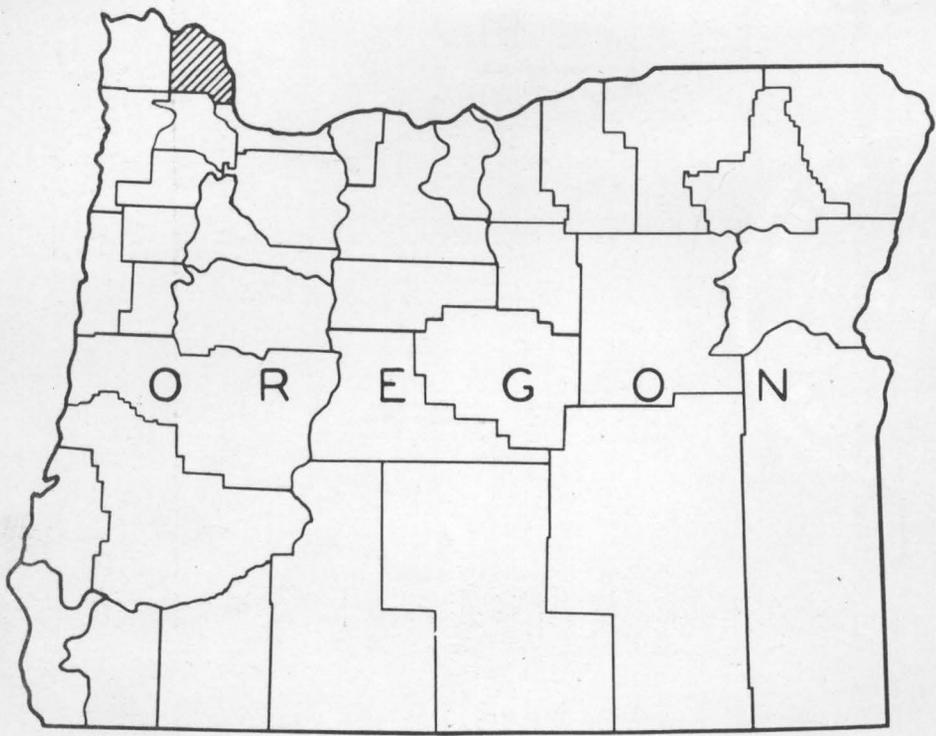


(FOREST STATISTICS
FOR
COLUMBIA COUNTY, OREGON

FROM THE INVENTORY PHASE OF THE FOREST SURVEY

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PORTLAND, OREGON

DECEMBER 28, 1938

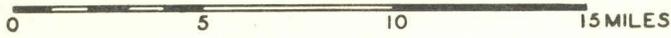
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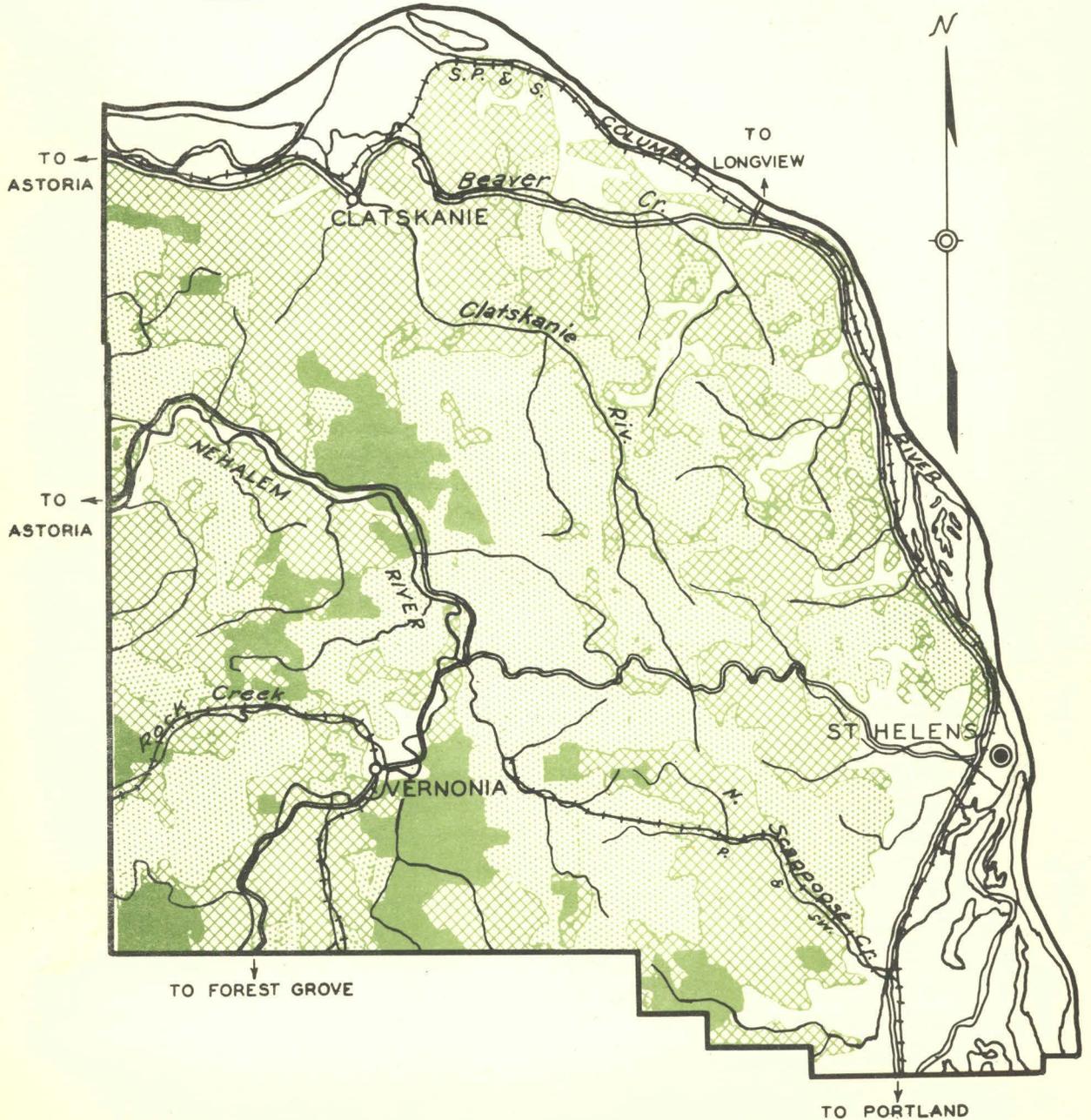
FIGURE 1
OUTLINE MAP
OF
COLUMBIA COUNTY, OREGON

1938
SCALE



LEGEND

-  SAW TIMBER
-  DEFORESTED CUTOVERS AND BURNS
-  SECOND GROWTH
-  NONCOMMERCIAL FORESTS AND NONFOREST LAND



FOREST STATISTICS FOR COLUMBIA COUNTY, OREGON

By Edward D. Buell^{1/}

The first complete inventory of the forests of Columbia County, Oregon, was made in 1930 by the Forest Service as a part of a Nation-wide survey of forest resources.^{2/} Data obtained in this survey were later adjusted to bring them up-to-date as of March 1, 1933, and a statistical report summarizing the results was issued in 1934. During 1938 the inventory was again made current through field examination covering the entire county and recompilation. Adjustments were made for all changes in forest type area and timber volume resulting from cutting and fire, the restocking of deforested cut-over and burned land, and changes in forest land ownership since the original survey. Results of this last revision of the inventory are presented in this report which supersedes the one issued in 1934.

An explanatory text, "The Forest Survey of the Douglas Fir Region", describes methods used in the survey and gives volume specifications and detailed definitions of the forest types recognized. It should be referred to in connection with this report.

Location and Description of County

Columbia County, located in northwestern Oregon, is bounded on the north and east by the Columbia River, on the west by Clatsop County, and on the south by Washington and Multnomah Counties. It is approximately 30 miles square with a land area of 420,810 acres. The eastern slopes of the Coast Range extend over most of the county and give it a moderately rough topography. Elevations vary from a few feet above sea level to about 2,000 feet. Two important streams, the Clatskanie and the Nehalem Rivers, drain approximately three-fourths of the county.

^{1/} The field and office work of the revised forest inventory of Columbia County, Oregon, was done by Wm. E. Sankela, E. D. Buell, M. J. Lauridsen, B. C. Baker, Paul Liniger, and K. A. Burkholder.

^{2/} Oregon and Washington were divided for purposes of the survey into two regions, (1) the Douglas fir region, consisting of that part of both States west of the summit of the Cascade Range, and (2) eastern Oregon and eastern Washington, that part of both States east of the summit of the Cascade Range. Regional reports will be issued which will present and discuss findings for each region as a whole. The regional reports will include an interpretation of the forest survey data as related to other economic data and a comprehensive analysis of the regional situation from both a physical and an economic standpoint.

The Clatskanie River, whose entire drainage basin lies within the county, heads in the southeastern portion and flows north into the Columbia River. The Nehalem River enters the county near the southwest corner, continues in a northeasterly direction for some 15 miles, then turns westward to leave the county and flow into the Pacific Ocean. The remaining one-fourth of the county is drained by streams flowing eastward into the Columbia River (figure 1).

Climatic conditions are nearly uniform over the county and change in seasonal temperatures is moderate. Summer temperatures seldom exceed 85 to 90 degrees and winter temperatures rarely register below 15 to 20 degrees above zero. The average annual precipitation is about 50 inches and falls for the most part in the winter months in the form of rain. In summer occasional rains and periods of foggy weather usually supply sufficient moisture for farm crops without irrigation.

Columbia County has rail, highway, and water transportation. Rail transportation is furnished by three lines: the Seattle, Portland, and Spokane; the Portland, Astoria, and Pacific; and the Portland and Southwestern Railways. The S. P. and S. extends along the Columbia River and maintains daily passenger and freight service. The other two railroads, although common carriers, are used chiefly for log transportation. The Columbia River Highway following the Columbia River and the Astoria-Forest Grove Highway entering the county at Mist and leaving south of Vernonia are important arterial highways. These are supplemented by county roads, many of which are gravelled, and by forest roads constructed under the supervision of the State Forester. The Columbia River provides water transportation, and port facilities capable of accommodating ocean-going ships are located at St. Helens and other river points.

The population of Columbia County was 20,047 in 1930. According to the Bureau of the Census 6,982 people lived in cities of over 1,000 inhabitants and the remainder lived in smaller villages, on farms, or in logging camps. St. Helens, the county seat and principal city, had a population of 3,994; Vernonia, second largest city, had 1,635 inhabitants; and Rainier, third largest, had 1,353.

Forest Land and Cover Types

The forest land of Columbia County, amounting to 345,375 acres, was once covered by forests of large-sized, high-quality timber predominately Douglas fir. Logging and fire have removed the original stands from more than 90 percent of the area, leaving but 32 thousand acres occupied by saw-timber stands. The Forest Survey classified 17 forest types and 2 nonforest types in the county. Data concerning forest-type areas are presented statistically in tables 2 and 3 and shown graphically in figure 3. The nonforest land amounts to 75 thousand acres, or 18 percent of the total county area. Agricultural land comprises

87 percent of the nonforest area and grass, brush, sand bars, and cities make up the remainder. A generalized small scale forest type map of the county is presented in figure 1. A detailed 1-inch-to-the-mile county type map showing all of the type detail mapped in the field is another product of the survey. This has been brought up-to-date as of 1938.^{3/}

Saw-Timber Types

Remaining saw-timber stands are concentrated chiefly in two blocks, both of which lie in the Nehalem River watershed. One is located near the center of the county and the other in the south-central portion. These saw-timber types are predominately Douglas fir; all but about 2 percent of their total area was classified by the survey as Douglas fir type, the remainder being typed as western hemlock. For the most part stands making up Douglas fir types are pure in composition, that is, 80 percent or more of the volume is of Douglas fir. Where mixed stands occur, western hemlock is the common associate; other species found to a lesser extent are western red cedar, lowland white fir, and silver fir. Of the total area of Douglas fir saw-timber types, roughly one-half is occupied by stands of large old-growth trees more than 40 inches d.b.h., one-quarter by stands of small old-growth trees from 20 to 40 inches d.b.h., and one-quarter by stands of large second-growth trees from 20 to 40 inches d.b.h.

The timber is of fair quality, producing good sawlog material but usually not of the quality required for veneer logs.

Immature Types

Forest types of less than saw-timber size occur on 158,580 acres, or approximately 45 percent of the forest land area of the county. These types occupy 102 thousand acres of cut-over land and 56 thousand acres of burned-over land. Douglas fir is the dominant species on all but about 900 acres which is occupied by western hemlock types.

Immature types 6 inches or more d.b.h. cover 94 thousand acres. Age of the stands ranges from 20 to 80 years. Stocking conditions are satisfactory on most of the area occupied by this group. Approximately 45 percent is fully stocked, 50 percent is medium stocked, and 5 percent is poorly stocked. On approximately 56 percent of the 94 thousand acres regeneration has followed fires that depleted the original stands; on the remainder regeneration has followed logging. While immature stands

^{3/} Location and extent of forest types are shown by Forest Survey type maps. Information regarding 1-inch-to-the-mile county type maps and $\frac{1}{4}$ -inch-to-the-mile lithographed State type maps and how they may be obtained will be furnished upon request. Address Director, Pacific Northwest Forest and Range Experiment Station, 423 U. S. Court House, Portland, Oreg.

are distributed generally over the county, there is a concentration in the northern part where considerably more than half the acreage is located and where the earliest logging operations occurred.

The area occupied by the small reproduction types, in which most of the trees are less than 6 inches d.b.h., totals 64 thousand acres. Types in this group occur in only 10- and 20-year age classes. Stocking conditions are far less satisfactory than was the case with the larger immature stands. About 6 percent is fully stocked, 47 percent medium stocked, and 47 percent is poorly stocked. Areas of types in this group are widely distributed over the county.

Detailed age and stocking data concerning immature types are presented in table 4 and figure 4.

Deforested Areas

Nearly one-third of the total forest land in Columbia County is included in the category which consists of nonrestocked cutovers (clear cut prior to 1930), recent cutovers (clear cut since beginning of 1930), and deforested burns. The aggregate area of deforested land is 140 thousand acres; consisting of 72 percent nonrestocked cutovers, 24 percent recent cutovers, and 4 percent deforested burns.

Nonrestocked cut-over areas, which occur mainly in the eastern half of the county amount to 101 thousand acres. They are divided into 2 groups, those clear cut prior to 1920 (type 35) and those clear cut between 1920 and 1929, inclusive (type 35A). Roughly, two-thirds of the total area falls in type 35A and one-third in type 35. Type 35A is located in the central part of the county and type 35 is found chiefly in the eastern part.

The area of recent cutovers amounts to 33 thousand acres and is located almost entirely in the central part of the county. Recent cut-over lands may or may not be restocked. As the elapsed time since cutting was not more than 8 years, it was thought to be impractical to examine and map restocking conditions.

The area of deforested burns is relatively unimportant as there is only 6 thousand acres of this type. However, a large percentage of the area of nonrestocked cut-over land in the county is the result of fire. Repeated burning has destroyed all reproduction that may have once been on the areas and also removed sources of seed that may have been left after logging.

Hardwoods

Hardwood types occupy a total of approximately 14 thousand acres in the county. They are found principally on the bottom lands along

the Columbia River, where good hardwood sites occur, and throughout the county on the lower slopes extending up from the stream courses. On some of the drier benches red alder comes in soon after clear-cut logging and forms a temporary cover. Immature stands, principally of red alder, occupy about 88 percent of the total area of hardwood types; the remainder is covered by merchantable stands of northern black cottonwood, red alder, and bigleaf maple. Pure stands of either of the first two species are common but bigleaf maple usually occurs as an associate in mixed hardwood stands. Alder and maple also occur in the understory of coniferous saw-timber and second-growth stands throughout the county.

Although cascara is found in several parts of the county it does not occur in stands of sufficient extent to be of commercial importance for bark production.

Productive Capacity of Forest Land

The forest land of Columbia County is classified according to its site quality (productive capacity) in table 5. All but 14 thousand acres is capable of producing coniferous timber of commercial character. Over 50 percent of the forest land is classified as site II and nearly 40 percent as site III. There are small amounts of sites I and IV and no site V, the poorest in productive capacity. With approximately 95 percent of coniferous forest land classified as sites II and III and with a total absence of site V Columbia County rates above the average for the Douglas fir region in its timber growing capacity.

Saw-Timber Volume

The volume of saw timber remaining in the county has been reduced to approximately 1.5 billion board feet. As shown in table 1 and figure 2 this volume is chiefly of Douglas fir, this species comprising about 88 percent of the total. Nearly all of the remainder is made up of other coniferous species: western red cedar, western hemlock, lowland white fir, and silver fir. Volume of hardwood species amounts to only 1.5 percent of the total. The Douglas fir volume has been segregated into four classes based on size and age of the timber. Nearly half of the total volume in this species is in the large old-growth class (DA), the one of greatest commercial importance since it produces the highest-quality lumber.

Only three hardwood species, northern black cottonwood, red alder, and bigleaf maple reach saw-timber size in the county. Of the total hardwood volume of 23 million board feet, 61 percent is of cottonwood, 23 percent of maple, and 16 percent of alder. A considerable portion of the hardwood volume is in understory trees in coniferous stands.

Forest Industries

Lumbering has contributed greatly to the development of Columbia County and continues to be its foremost industrial activity. Although some of the earliest logging and sawmilling operations in Oregon were in this county, 1910 saw the beginning of large scale operations. Prior to this date cutting was largely limited to areas readily accessible to the Columbia River. During the two decades following 1910 timber in practically all portions of the county was opened up through the construction of logging railroads. Peak of sawlog production was reached during the years 1925 to 1927 when the annual cut averaged over a half billion board feet. For the 13-year period 1925 to 1937, inclusive, the average annual production was approximately 325 million board feet. During this period, only one county in Oregon, Clatsop County, had a greater sawlog production. Gradually the several different companies have cut out until at present there is only one large operation in the county. This one is cutting in one of the two large remaining tracts of saw timber. Several smaller operations are working in small scattered tracts.

The logging method generally practiced in the county is clear cutting followed by broadcast burning of slash. Heavy steam or gas equipment is used in the woods and rail transportation is the chief means of moving the logs to the mill. Some of the small operators use tractors in logging and trucks for transportation but this type of equipment is, as yet, of little importance in the county. Only a few small areas have been selectively cut.

More than half of the sawlog volume produced in the county is milled elsewhere, chiefly at Linnton in Multnomah County. On the other hand a large proportion of the logs milled in the manufacturing plants located in the county comes from outside, some from the Columbia River log market and some cut in Clatsop County and milled at Vernonia.

The larger mills are located at St. Helens, Prescott, Vernonia, and Rainier. The combined capacity of all mills in the county is approximately 650 thousand board feet per 8-hour shift. In addition to the sawmills there are two large wood-utilizing plants, both located at St. Helens; one, a pulp and paper plant, has a daily (24 hour) capacity of 125 tons of unbleached sulphate pulp and 135 tons of sulphate paper; the other produces insulating board and has a daily capacity of 250 thousand square feet.

Although current statistics on the number of wage earners employed in the lumber industry are not available, the Bureau of the Census report for 1930 shows that of the total of 8,156 persons gainfully employed in the county, 3,313 were employed in forestry which includes all woods work such as logging, pulpwood cutting, and fire patrol, and in the lumber industry which includes saw and planing mills, pulp and paper mills, and other wood-using plants.

Trends in the Forest Situation

By comparing data gathered in the original inventory with those of the recent inventory, certain aspects of the forest situation become apparent. Through this comparison it is possible to determine the rate of depletion of saw-timber stands, the restocking of cut-over and burned areas, the rate of growth of immature stands, and the trend in forest land ownership.

Depletion

The total net depletion of saw-timber volume from 1933 to 1938 was 854 million board feet which is 36 percent of the volume as of 1933. The area of types of saw-timber size was reduced by 19 thousand acres or 37 percent. Practically all of the depletion was in privately owned timber. In addition, some timber was transferred from private to public ownership and this resulted in a total reduction of 39 percent in privately owned timber volume or 3 percent more than total depletion in the county. Douglas fir made up nearly 92 percent of the timber cut during the 5-year period. The supply of old-growth Douglas fir in the county was reduced by 38 percent and large second growth by 35 percent, while small second growth increased by nearly 25 percent or 32 million board feet.

The rate of depletion is considerably less at present than it was in the past and there is little likelihood of an increase in the future. A large part of the remaining saw timber in the county is controlled by one company and this will probably be the only large operation for many years.

Growth

The present rate of growth of the forests of Columbia County is considerably below that obtainable under intensive forest management. The present rate is termed current annual growth. It changes continuously with changes in the timber stands and should not be used in the prediction of future yields without many adjustments being made. The average annual increment that could be obtained with all the county's commercial forest land under intensive forest management is called potential annual growth.

Current annual growth of the forests of the county was computed from data obtained in the initial inventory. Stands on 132 thousand acres were classified as growing and were increasing at the rate of 14 million cubic feet or 17 million board feet annually. The apparently unequal proportion between total current growth in cubic feet and that in board feet is due to the growth in cubic feet having been computed for all trees 3.6 inches or more d.b.h. and in board feet for only trees 15.6 inches or more d.b.h. estimated in 32-foot logs to a 12-inch top. Of the total of 132 thousand acres supporting growing forests, 78 per-

cent is covered with stands in which the trees are smaller in size than the minimum diameter limit for board-foot volume.

Based on data gathered during the 1938 inventory, potential annual growth on the 345 thousand acres of commercial forest land in the county has been estimated to be 40 million cubic feet. The potential board-foot growth on trees 15.6 inches or more in d.b.h. totals 138 million feet.

Reforestation

Of the lands cut over prior to 1920 or denuded by fire prior to 1933, 57 thousand acres were still nonrestocked by 1933. In 1938 the area in these categories had been reduced to 42 thousand acres or during the 5-year period 26 percent of the county's deforested land as of 1933 had restocked. Of the lands clear cut between 1920 and 1929, inclusive, which was 117 thousand acres, 52 thousand acres or 45 percent is restocking, leaving 65 thousand acres to be added to the 42 thousand or making a total of 107 thousand acres still denuded exclusive of areas clear cut since the beginning of 1930. The total area from which the mature stands had been removed either by logging or fire and had reforested by 1938 was 159 thousand acres.

Changes in Forest Ownership

During the past 5 years the area of forest land in county ownership has more than doubled. This has been brought about by tax foreclosures and the trend seems likely to continue as more area becomes delinquent annually. Most of the areas thus acquired by the county are nonrestocked cutovers that usually will require many years to become productive again.

Land Use

The agricultural and grazing resources of the county, although of minor importance in comparison to its timber resources, provide employment for a considerable number of people and revenue to the county through taxation and special fees for use.

Agriculture

Agricultural development has been confined principally to the alluvial benches along the Columbia River and the narrow valleys of lesser streams. Practically all of the tillable land is now being fully utilized and there is apparently little room for further development. Although small areas of logged-off land are suited to agricultural use, the cost of clearing is in most cases prohibitive for the average small farmer. In recent years a considerable acreage of cut-over land in the North Scappoose Creek watershed has been settled but

the clearing of land has progressed very slowly and most of the tracts have been used for pasture for goats, sheep, and cattle.

The bulk of the land in agricultural use in the county, which amounts to approximately 65 thousand acres, is located in the south-eastern portion, extending from St. Helens south to the county line. Dairying and general farming are the important types of farming practiced and fruit and small grain are the principal crops. Individual farm units are small.

The Bureau of the Census report for 1930 lists a total of 1,184 persons gainfully employed in agriculture in the county.

Grazing

Originally the forage resources of the county were very limited because of the dense timber stands and grazing was confined chiefly to the more open bottom lands. The gradual clearing of some of the earlier logged areas for agricultural use added some pasture lands but it was not until the last few years that any large number of livestock has been grazed in the county. At present a considerable acreage of the cut-over land is grazed during the summer months, chiefly by sheep. These lands, both privately and county owned, are administered by a county grazing committee composed of county officials and land owners. The committee issues grazing permits for which a fee is charged, allots ranges, and carries on general administrative duties. Most of the areas grazed are lands that have been clear cut and are now nonrestocked. In general the policy followed is not to allot as range, land on which a young forest crop is well established. Sheep, sometimes numbering as many as 20,000 head and usually shipped in from outside the county, use the ranges. Locally-owned cattle are also permitted to graze on certain lands. This use of cut-over land is still in the experimental stage and the feasibility of the practice has yet to be established.

FOREST STATISTICS FOR COLUMBIA COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 1. VOLUME OF TIMBER BY SPECIES AND OWNERSHIP CLASS
DATA CORRECTED TO JULY 1, 1938

TREES 16" AND MORE IN D.B.H.^{1/}
THOUSANDS OF BOARD FEET, LOG SCALE, SCRIBNER RULE

SUR- VEY : SYM- BOL :	SPECIES ^{2/}	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	FEDERAL		TOTAL
						O. AND C. LAND GRANT	PUBLIC DOMAIN, AVAILABLE FOR CUTTING	
DA :	LARGE OLD-GROWTH DOUGLAS FIR	539,965		7,077		48,376		595,418
DB :	SMALL OLD-GROWTH DOUGLAS FIR	338,088		1,590		20,440		360,118
DC :	LARGE SECOND-GROWTH DOUGLAS FIR	192,443		4,320		27,518		224,281
DD :	SMALL SECOND-GROWTH DOUGLAS FIR	121,814	1,190	21,828	597	15,488	99	161,016
HA :	LARGE WESTERN HEMLOCK	58,694		5,653		882		65,229
HB :	SMALL WESTERN HEMLOCK	3,089		297		38		3,424
C :	WESTERN RED CEDAR, LIVE	66,369		596		3,573		70,538
KC :	WESTERN RED CEDAR, DEAD	2,515		50				2,565
WF :	LOWLAND WHITE FIR	7,832						7,832
A :	SILVER FIR	3,230						3,230
BC :	NORTHERN BLACK COTTONWOOD	9,390		5,000				14,390
RA :	RED ALDER	3,598	30	108		128		3,864
OM :	BIGLEAF MAPLE	4,824		131		445		5,400
TOTAL		1,351,851	1,220	46,650	597	116,888	99	1,517,305

^{1/} INCLUDES TREES OF HARDWOOD SPECIES 12 INCHES OR MORE D.B.H.

^{2/} IN ADDITION TO THE SPECIES LISTED, OREGON ASH AND OREGON WHITE OAK ARE KNOWN TO OCCUR IN THE COUNTY, BUT IN NEGLIGIBLE QUANTITIES ONLY.

FOREST STATISTICS FOR COLUMBIA COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 2. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO JULY 1, 1938

SUR- VEY : TYPE: NO. :	TYPE DEFINITION	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	FEDERAL		TOTAL
						REVESTED O. AND C. LAND GRANT	PUBLIC DOMAIN, AVAILABLE FOR CUTTING	
4	WOODLAND OAK-MADRONE: FOREST CONTAINING 60% OR MORE OF OAK OR MADRONE	320						320
6	DOUGLAS FIR, LARGE OLD GROWTH: MORE THAN 40" D.B.H.	12,785		220		1,315		14,320
7	DOUGLAS FIR, SMALL OLD GROWTH: 22 TO 40" D.B.H.	7,900		5		430		8,335
8	DOUGLAS FIR, LARGE SECOND GROWTH: 22 TO 40" D.B.H.	7,660		235		790		8,685
9	DOUGLAS FIR, SMALL SECOND GROWTH: 6 TO 20" D.B.H.	77,065	1,420	12,515	695	2,425	130	94,250
10	DOUGLAS FIR SEEDLINGS AND SAPLINGS: LESS THAN 6" D.B.H.	46,530	330	13,155	1,855	1,580		63,450
14	WESTERN HEMLOCK: FOREST CONTAINING 50% OR MORE OF WESTERN HEMLOCK WESTERN HEMLOCK, LARGE: MORE THAN 20" D.B.H.	310		370				680
15	WESTERN HEMLOCK, SMALL: 6 TO 20" D.B.H.	180	40	215				435
16	WESTERN HEMLOCK SEEDLINGS AND SAPLINGS: LESS THAN 6" D.B.H.		20	425				445
31.5	HARDWOODS: FOREST CONTAINING 50% OR MORE OF HARDWOODS HARDWOODS, LARGE: 12" OR MORE D.B.H.	1,480		200				1,680
31	HARDWOODS, SMALL: LESS THAN 12" D.B.H.	11,370	175	845		10		12,400
35	NONRESTOCKED CUTOVER: CLEAR CUT AREA NOT SATISFACTORILY RESTOCKED CLEAR CUT PRIOR TO 1920	25,265	195	6,455	1,390	2,380		35,685
35A	CLEAR CUT FROM 1920 TO 1929, INCLUSIVE	35,400	1,820	25,355	90	2,810		65,475
36	RECENT CUTOVER: CLEAR CUT SINCE BEGINNING OF 1930 DEFORESTED AREA: NONRESTOCKED AREA DEFORESTED OTHERWISE THAN BY CUTTING	30,900		990	15	910		32,815
37	DEFORESTED BURN	2,495		2,890		985	30	6,400
TOTAL FOREST TYPES		259,660	4,000	63,875	4,045	13,635	160	345,375
2	NONFOREST LAND: CULTIVATED, GRASS, BRUSH, URBAN AREAS, AND UNMEANDERED WATER SURFACES							
3	GRASS, BRUSH, URBAN AREAS, AND UNMEANDERED WATER SURFACES	10,315		20				10,335
3	CULTIVATED AREAS	63,905	215	930	35	15		65,100
TOTAL		333,880	4,215	64,825	4,080	13,650	160	420,810

FOREST STATISTICS FOR COLUMBIA COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 3. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS
DATA CORRECTED TO JULY 1, 1938

TYPE DEFINITION	PRIVATE	STATE, AVAILABLE FOR CUTTING	COUNTY	MUNICIPAL	FEDERAL		TOTAL
					REVESTED O. AND C. LAND GRANT	PUBLIC DOMAIN, AVAILABLE FOR CUTTING	
WOODLAND: OAK-MADRONE SURVEY TYPE 4	320						320
HARDWOODS: ALDER, MAPLE, AND COTTONWOOD SURVEY TYPES 31 AND 31.5	12,850	175	1,045		10		14,080
CONIFERS MORE THAN 20" D.B.H. SURVEY TYPES 6, 7, 8, AND 14	28,655		830		2,535		32,020
CONIFERS 6 TO 20" D.B.H. SURVEY TYPES 9 AND 15	ON CUTOVER AREAS : 34,290	865	4,735	650	360	50	40,950
	ON OLD BURNS : 42,955	595	7,995	45	2,065	80	53,735
	TOTAL : 77,245	1,460	12,730	695	2,425	130	94,685
CONIFERS LESS THAN 6" D.B.H. SURVEY TYPES 10 AND 16	ON CUTOVER AREAS : 44,245	345	13,010	1,855	1,445		60,900
	ON OLD BURNS : 2,285	5	570		135		2,995
	TOTAL : 46,530	350	13,580	1,855	1,580		63,895
RECENT CUTOVER AREAS: CLEAR CUT SINCE BEGINNING OF 1930 SURVEY TYPE 36	30,900		990	15	910		32,815
NONRESTOCKED CUTOVER AREAS AND DEFORESTED BURNS SURVEY TYPES 35, 35A, AND 37	63,160	2,015	34,700	1,480	6,175	30	107,560
TOTAL FOREST TYPES	259,660	4,000	63,875	4,045	13,635	160	345,375
NONFOREST LAND SURVEY TYPES 2 AND 3	74,220	215	950	35	15		75,435
TOTAL	333,880	4,215	64,825	4,080	13,650	160	420,810

FOREST STATISTICS FOR COLUMBIA COUNTY, OREGON
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 4. AREA, IN ACRES, OF CERTAIN IMMATURE CONIFEROUS FOREST TYPES,
BY AGE CLASS AND DEGREE OF STOCKING
DATA CORRECTED TO JULY 1, 1938

AGE CLASS (YEARS)	DEGREE OF STOCKING	TYPE NUMBER AND NAME				TOTAL
		10	16	9	15	
		DOUGLAS FIR SEEDLINGS AND SAPLINGS	WESTERN HEMLOCK SEEDLINGS AND SAPLINGS	DOUGLAS FIR SMALL SECOND GROWTH	WESTERN HEMLOCK SECOND GROWTH	
		ACRES	ACRES	ACRES	ACRES	ACRES
10	GOOD	3,965				3,965
	MEDIUM	29,240	115			29,355
	POOR	27,545	200			27,745
	TOTAL	60,750	315			61,065
20	GOOD	345		6,130		6,475
	MEDIUM	1,020	130	10,075	270	11,495
	POOR	1,335		340		1,675
	TOTAL	2,700	130	16,545	270	19,645
30	GOOD			15,010		15,010
	MEDIUM			23,815	40	23,855
	POOR			1,565	125	1,690
	TOTAL			40,390	165	40,555
40	GOOD			15,220		15,220
	MEDIUM			9,205		9,205
	POOR			1,460		1,460
	TOTAL			25,885		25,885
50	GOOD			3,325		3,325
	MEDIUM			1,610		1,610
	POOR			210		210
	TOTAL			5,145		5,145
60	GOOD			315		315
	MEDIUM			385		385
	POOR			35		35
	TOTAL			735		735
70	GOOD			1,415		1,415
	MEDIUM			1,195		1,195
	POOR			825		825
	TOTAL			3,435		3,435
80	GOOD			730		730
	MEDIUM			1,115		1,115
	POOR			270		270
	TOTAL			2,115		2,115
TOTAL	GOOD	4,310		42,145		46,455
ALL	MEDIUM	30,260	245	47,400	310	78,215
AGES	POOR	28,880	200	4,705	125	33,910
	TOTAL	63,450	445	94,250	435	158,580

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TABLE 5. AREA OF FOREST LAND, BY SITE QUALITY
DATA CORRECTED TO JULY 1, 1938

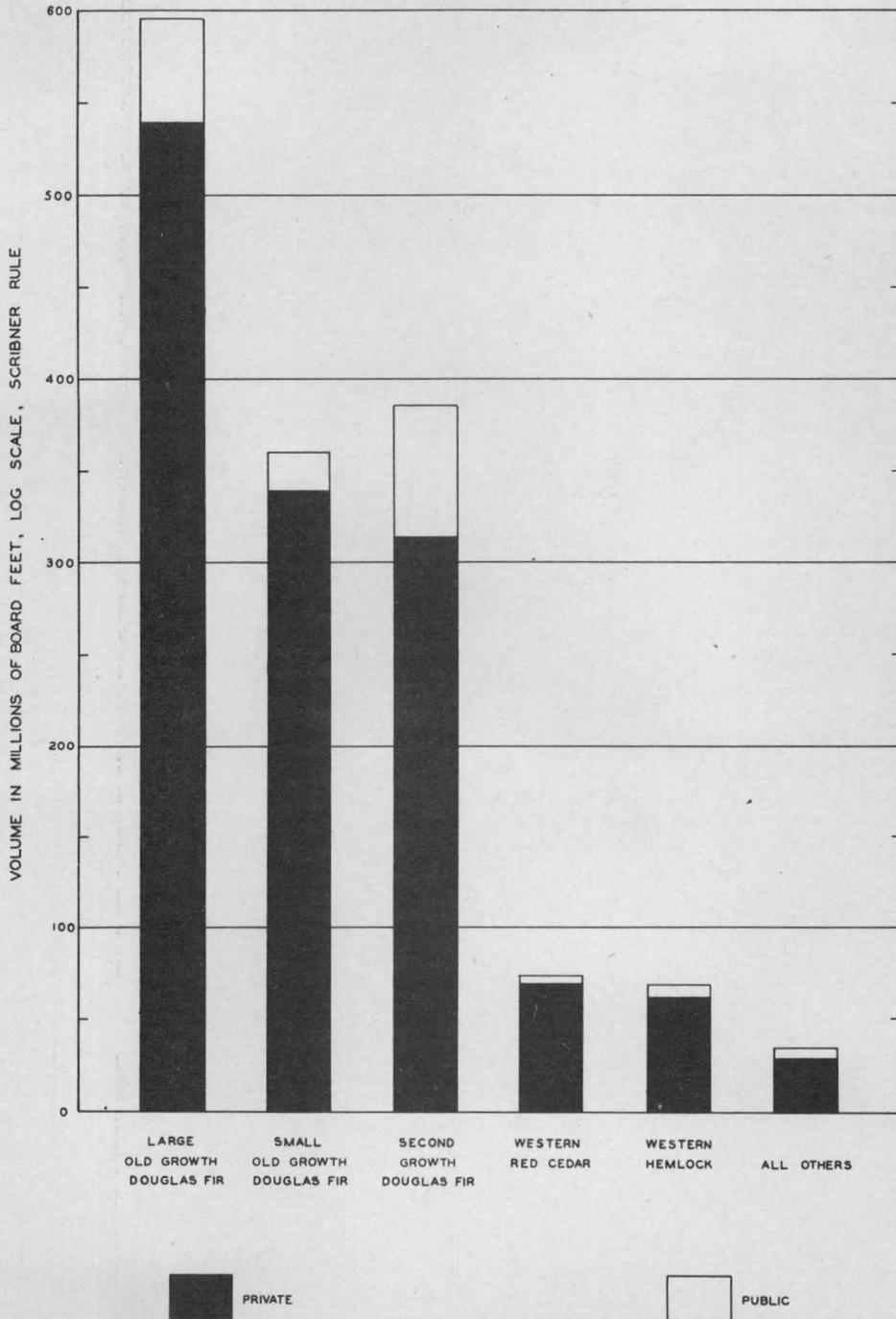
SITE CLASSIFICATION		AREA IN PERCENTAGE OF---				
TYPE	SITE QUALITY CLASS	AREA IN ACRES	COMMERCIAL CONIFEROUS FOREST LAND		TOTAL FOREST LAND	TOTAL AREA
			PERCENTAGE	PERCENTAGE	PERCENTAGE	PERCENTAGE
	I	6,804	2.1	2.0	1.6	
COMMERCIAL CONIFEROUS	DOUGLAS FIR	186,139	56.2	53.9	44.2	
	AND HEMLOCK	131,933	39.9	38.2	31.4	
	IV	6,099	1.8	1.7	1.5	
TOTAL COMMERCIAL CONIFEROUS		330,975	100.0	95.8	78.7	
WOODLAND		320		0.1	0.1	
HARDWOOD		14,080		4.1	3.3	
TOTAL OTHER THAN COMMERCIAL CONIFEROUS		14,400		4.2	3.4	
ALL FOREST TYPES		345,375		100.0		
NONFOREST TYPES		75,435			17.9	
GRAND TOTAL		420,810			100.0	

1/ THE "SITE QUALITY" OF A FOREST AREA IS ITS RELATIVE PRODUCTIVE CAPACITY, DETERMINED BY CLIMATIC, SOIL, TOPOGRAPHIC, AND OTHER FACTORS. THE INDEX OF SITE QUALITY IS THE AVERAGE HEIGHT OF THE DOMINANT STAND AT THE AGE OF 100 YEARS. FIVE SITE QUALITY CLASSES ARE RECOGNIZED FOR DOUGLAS FIR, CLASS I BEING THE HIGHEST. IN THE SURVEY DOUGLAS FIR CLASSIFICATIONS WERE USED NOT ONLY FOR TYPES OF WHICH THIS SPECIES IS A CHARACTERISTIC COMPONENT BUT FOR OTHER TYPES FOR WHICH NO SITE QUALITY CLASSIFICATIONS HAVE BEEN DEVELOPED.

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FIGURE 2. DISTRIBUTION OF SAW-TIMBER VOLUME BY SPECIES AND OWNERSHIP CLASS (FROM TABLE I.)



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FIGURE 3. GENERALIZED FOREST TYPES BY OWNERSHIP CLASS (FROM TABLE 3)

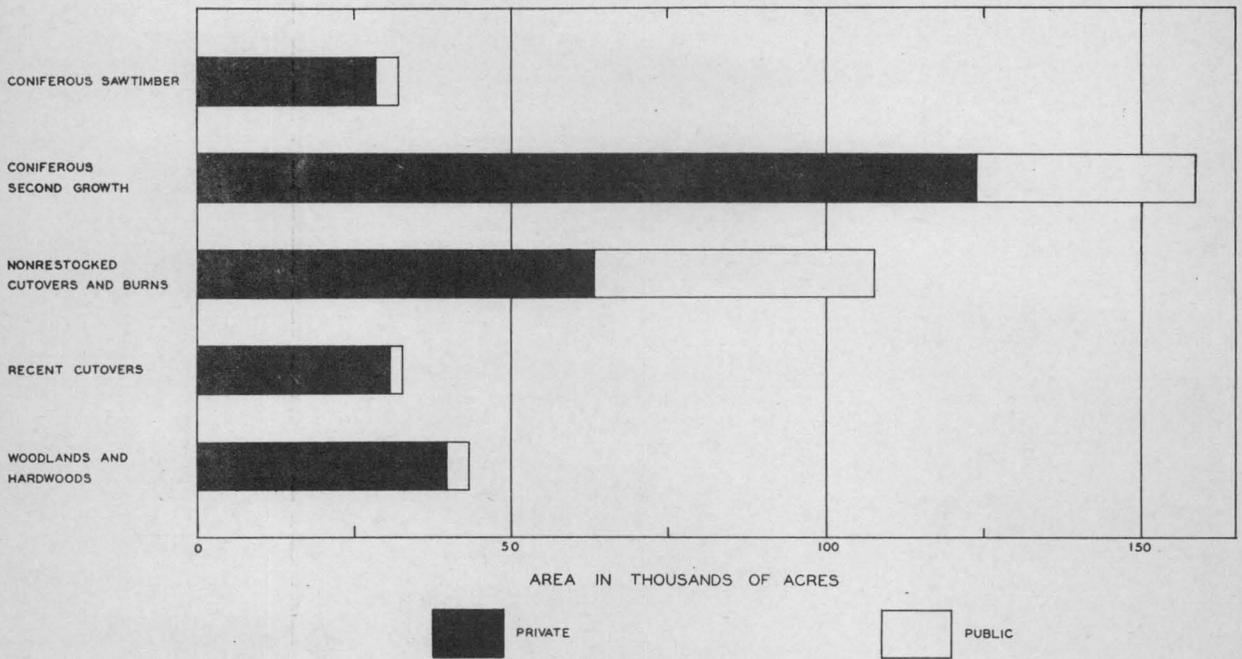


FIGURE 4. AGE CLASS AND STOCKING OF IMMATURE CONIFEROUS STANDS (FROM TABLE 4)

