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# FOREST STATISTICS FOR WASHINGTON COUNTY, OREGON

FROM THE FOREST SURVEY INVENTORY REVISED IN 1940



U. S. DEPARTMENT OF AGRICULTURE      FOREST SERVICE  
PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION

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PORTLAND, OREGON

MAY 28, 1940

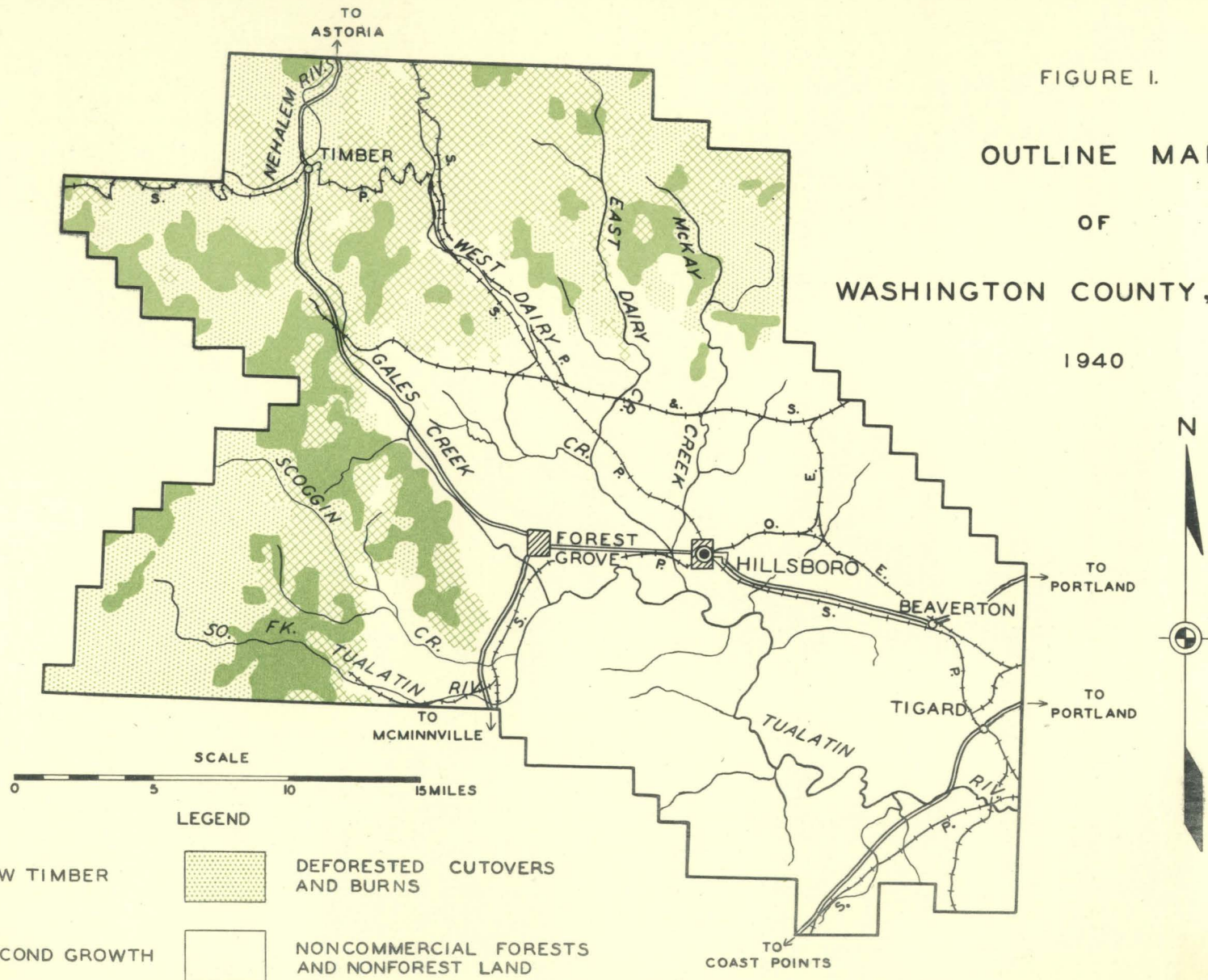
FIGURE I.

# OUTLINE MAP

OF

WASHINGTON COUNTY, OREGON

1940



FOREWORD

The forest survey, a Nation-wide project authorized by Congress in 1928, consists of a detailed investigation in five major parts of the country's present and future forest resources: (1) An inventory of the country's existing forest resources in terms of areas occupied by forest-cover types and of timber volumes, by species, in board feet and cubic feet, and a study of conditions on cut-over and on burned forest lands; (2) a study of the depletion of the forests through cutting and through loss from fire, insects, disease, and other causes; (3) a determination of the current and potential growth on forest areas; (4) an investigation of present and prospective requirements of the United States for forest products; and (5) an analysis and correlation with other economic data of findings of these studies in order to make available to public and private agencies basic facts and guiding principles necessary to plan for sound management and use of forest resources.

The forest survey of Oregon and Washington, an activity of the Pacific Northwest Forest and Range Experiment Station, was conducted in the Douglas-fir region during the period 1930-1933, inclusive.\* In 1937 work of keeping the survey up to date was commenced in counties in which there had been a large amount of cutting depletion since the original survey. Original field work of the survey in Washington County, Oregon, the first county in the State to be inventoried, was carried on in 1930. Later, because of the McKay Creek fire in 1932 and the Tillamook fire in 1933, the inventory was made current as of November 1, 1933, and a statistical report, "Forest Statistics for Washington County, Oregon", issued. The inventory was again brought up to date during the first half of 1939, but, later in the year, several severe fires caused considerable change in both forest type areas and timber volume. Accordingly, adjustments were made in the inventory data for the changes caused by the fires and also for all cutting that occurred in the last half of 1939 and the first two months of 1940. The revised inventory is therefore current as of March 1, 1940.

This report, which presents results of this revised inventory, supersedes the one issued in 1934.

\* Oregon and Washington were divided for survey purposes into two regions, (1) Douglas-fir region, consisting of that part of both States west of the Cascade Range summit, and (2) ponderosa pine region, that part of both States east of the Cascade Range summit. Regional reports will be issued which will present findings for each region as a whole. The regional reports will include an interpretation of the forest-survey data and a comprehensive economic analysis of the regional forest situation.



FOREST STATISTICS FOR WASHINGTON COUNTY, OREGON<sup>1/</sup>By F. L. Moravets<sup>2/</sup>

Although the forests of Washington County, Oregon, have been depleted through a century of logging, fire, and land clearing until only a little over 2 billion board feet of merchantable saw timber remains, they can through intensive management continue to be an important factor in the county's economy. Over one-half of the county's area is best suited, because of topography and forest-producing capacity, for permanent timber growing; approximately two-fifths of the forest-land area is fairly well stocked with thrifty second-growth stands; and markets are readily available for all forest products. Also, because of the intermingled pattern of cultivated lands and forest lands throughout practically all of the agricultural zone in the county, there is opportunity for farm forestry to be carried on in connection with the production of agricultural products.

Physical Character of County

Washington County may be divided into two quite distinct areas or zones, delineated by topography, vegetative cover, and land use.

In relief the county appears as a broad lowland area almost entirely encircled by low ranges of rounded hills and mountains. The lowland area, known as the Tualatin Valley after the Tualatin River which winds sluggishly through the area, undulates in gradually rising slopes that extend upward from the river's flood plain to the encircling hills. The valley proper, some 10 to 12 miles in width, trends southeasterly through the central portion of the county, figure 1. Elevations of the lowland average about 200 feet. The encircling hills and mountains consist of the main range of the Coast Mountains along the county's western boundary and two spurs of the main range, one extending eastward through the northern portion of the county and finally turning southward to form the eastern boundary, the other, the Chehalem Mountains, reaching eastward along the southern boundary of the county. Topography of the main range is quite rugged and broken. Slopes rise sharply from the lowland to elevations varying from 1,000 to 3,000 feet and three of the principal tributaries of the Tualatin River rise here

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<sup>1/</sup> Assistance in the compilation of the data contained in this report was furnished by the personnel of Works Projects Administration official project 765-94-3-5.

<sup>2/</sup> The field and office work of the revised inventory of Washington County, Oregon, was done by D. Lester Lynch, E. D. Buell, E. A. Erickson, P. A. Liniger, Edna L. Hunt, W. E. Zeuthen, and T. J. Rowe.

to flow in rapid currents through deep and narrow valleys until the low-land is reached. The two spurs that extend eastward from the main range are less rugged, with gentle slopes and rounded ridge tops. Elevations along the crest of the spurs vary from 500 to 1,200 feet.

Before white settlement the vast bulk of the county's surface was forested. In the valley there were natural prairies of grassland and areas sparsely stocked with oak and Douglas-fir, but a large part of the area was occupied by dense stands of conifers. The hilly and mountainous areas were almost entirely forested, for the most part with old-growth timber of large size. Now after a hundred years of settlement the valley appears as an irregular patchwork of cultivated land, stump pasture, and forested tracts, the latter occupying less than a third of the total area. The mountainous areas, while still almost entirely forest land, are occupied by an intermingled pattern of cover types in which denuded and sparsely restocked tracts predominate and virgin timber stands are but small scattered remnants.

In the survey the portion of the county in which cultivated and stump-pasture lands comprised the majority of the area was placed in the agricultural zone and the remainder, in which forest land predominated, was placed in the forest zone. Because of the difference in character of land use and the cover types in the two zones, a different method of inventory was employed in each. In the forest zone the so-called "compilation method" was used. This method consisted of the use of all reliable preexisting information--such as timber cruises, cut-over records, fire reports, and other pertinent records--and field examination of all areas not satisfactorily covered by preexisting information. In this method all cover types were shown in place on a type map and timber volumes were computed for each individual timbered section.

In the agricultural zone a statistical-strip method was used in which parallel lines were run across the zone at 3-mile intervals. Along these lines all lands were classified as to agricultural or forest use; the forest land was further classified as to forest-cover type, age and degree of stocking of immature stands, and timber volume per acre of saw-timber stands. Data obtained in samples taken along the strip lines were used to compute a statistical evaluation of land use and the extent and character of the forests in the zone. Because of the intermingled pattern of cover types in the zone and the small size of forest areas, this method was the most accurate and also the most practical within the scope of the survey.

As the forests of the two zones differ considerably in extent and ownership, they will be discussed separately in this report.

## Forest Zone

### Area

The forest zone in Washington County, as mapped by the survey, is comprised of the rugged hilly and mountainous areas in the northern and western portions of the county. In all, the zone includes a total of 216 thousand acres, or approximately 46 percent of the county's land area. Of this total 209 thousand acres was typed as forest land; the remaining 7 thousand acres is made up of small scattered areas of cultivated land from 40 to 400 acres in extent.

### Saw-Timber Types

Saw-timber types (trees 20 inches d.b.h. and larger) in the forest zone occupy approximately 49 thousand acres, or about 23 percent of the total forest land area in the zone. Except for 120 acres of western hemlock type, all of this acreage is occupied by stands in which Douglas-fir comprises 60 percent or more of the volume.

Old-growth Douglas-fir more than 40 inches d.b.h. (type 6) is found on only about 14 thousand acres and no large tracts of this class of timber remain; some 12 or 15 areas are scattered throughout the zone. These vary in extent from 40- to 200-acre tracts in the northern part of the county to one of about 4 thousand acres on the divide between the Scoggins Creek and Gales Creek drainages. A few areas of this type of 1 to 2 thousand acres remain in the vicinity of Saddle Mountain and in the upper headwaters of Gales Creek. A large block of this type of timber of good quality at the head of Scoggins Creek and the South Fork of Tualatin River was burned in the Tillamook fire of 1933. Douglas-fir in this type varies from 40 to 76 inches d.b.h. and from 6 to 12 logs in length; the scale of the average tree is between 5 to 6 thousand board feet. It will cut approximately 15 percent no. 1 logs, 50 percent no. 2 logs, and 35 percent no. 3 logs. A small percentage should be suitable for veneer logs. Western hemlock, western redcedar, grand fir, and noble fir are associate species in the type. All but about 2 percent of the acreage in this type is privately owned.

Old-growth Douglas-fir from 20 to 40 inches d.b.h. (type 7) occupies a total of 9.7 thousand acres in the zone. Like the large old-growth Douglas-fir type, this type occurs as small scattered tracts throughout the forest zone. One area of about 3 thousand acres lies approximately 3 miles west of Forest Grove and several smaller areas are in the upper drainage of Gales Creek. The timber in this type is, in general, much more defective than that in type 6; the percentage of cull trees in the stand is higher and the loss in merchantable trees due to defect and breakage is about the same. Douglas-fir in this type varies from 20 to 40 inches d.b.h. and 6 to 9 logs in length. It will cut approximately 10 percent no. 1 logs, 40 percent no. 2 logs, and 50 percent no. 3 logs.



Some veneer logs will probably be obtained. Associate species are the same as in type 6. About 93 percent of the acreage of this type in the forest zone is privately owned.

Second-growth Douglas-fir from 20 to 40 inches d.b.h. (type 8) covers 25 thousand acres, or approximately 51 percent of the acreage of saw-timber types in the zone. In this type about 92 percent of the volume is Douglas-fir, 3 percent western redcedar, 3 percent grand fir, and 2 percent western hemlock. Approximately 20 percent of the Douglas-fir volume is in old-growth trees more than 40 inches d.b.h., 10 percent in old-growth trees 20 to 40 inches d.b.h., and 70 percent in second-growth trees 20 to 40 inches d.b.h. In general the second-growth timber in this type is sound and thrifty but loss due to defect and breakage is high in the old-growth timber.

Western redcedar found in the three Douglas-fir saw-timber types is large and of excellent quality, although loss through breakage is high. Western hemlock varies in size from 20 to 54 inches d.b.h. and 3 to 9 logs in length. Defect is quite high in this species. Noble fir, which occurs in the zone only at the higher elevations as scattered trees in association with Douglas-fir, is of large size, 30 to 60 inches d.b.h., and excellent quality. The grand fir, which is found in the three Douglas-fir types at the lower elevations as scattered trees, is usually a thrifty timber, with little defect, and suitable for pulpwood.

#### Immature Stands

In the forest zone stands of timber less than saw-timber size occupy a total of 79 thousand acres or about 37 percent of the zone's total area. The virgin stand on half of this acreage was destroyed by fire; on the other half it was removed by logging. The stands, predominantly Douglas-fir, were classified into two types--small second-growth Douglas-fir (type 9) and seedling and sapling Douglas-fir (type 10).

The small second-growth type, in which the trees are from 6 to 20 inches d.b.h., covers a total of 42 thousand acres. Although the stands in this type vary from 20 to 80 years of age, the majority of them are of the 30- and 40-year age class. The degree of stocking of the stands averages quite high. Approximately 29 percent of the type's total acreage is well stocked, 65 percent is of medium stocking, and 6 percent is poorly stocked.

The seedling and sapling type, in which the trees are less than 6 inches d.b.h., occupies 37 thousand acres. Stands in this type are principally of the 10-year age class. Stocking of the stands averages much poorer than in the older pole stands; only about 1 percent of the area in the type is well stocked, 41 percent is of medium stocking, and 58 percent is poorly stocked. The large percentage of poorly stocked stands is the result of fires in recent years that have swept over large areas of these young stands.

## Deforested Lands

Deforested lands total 81 thousand acres or 38 percent of the forest zone's total area. These lands were classified in three types by the survey: nonrestocked old cut-over areas, recent cut-over areas, and nonrestocked burns. The old cut-over areas and burns were examined carefully to determine if they were restocked; the recent cut-over areas were not examined since, in most cases, insufficient time had elapsed since logging to permit reproduction to become established.

The area of old cut-over areas, cut prior to 1930, that are non-restocked total about 13 thousand acres. Of this acreage 80 percent was cut during the decade 1920-1929 and the remainder prior to 1920. Three tracts contain the bulk of the type's acreage--two in the vicinity of Timber and one in the extreme southwestern part of the county. These areas were formerly restocked but fires during the last decade killed all reproduction.

A total of 37 thousand acres of green timber in the forest zone has been cut since the beginning of 1930. This acreage, classified as recent cut-over land, is comprised of a large number of relatively small areas and three large areas from 3 to 7 thousand acres. Two of these areas are near the headwaters of Gales Creek and the other in the northeastern corner of the county in the McKay Creek drainage. Recurring fires since the original slashing fire have burned over much of the recent cut-over land and it is probable that a large percentage will remain nonstocked for some time.

Deforested burns in the forest zone total 31 thousand acres. One area of this type of approximately 25 thousand acres in the southwestern part of the county lies along the crest of the Coast Range. This area, which was deforested in 1933 by the Tillamook fire and reburned in 1939 by the Saddle Mountain fire, was originally forested with an excellent stand of large old-growth Douglas-fir. The remainder of the acreage of deforested burns is in several small areas from 40 to 2,000 acres in extent.

## Saw-Timber Volume

Stands in the forest zone contain a total saw-timber volume of 1,649 million board feet, log scale, Scribner rule. Of this total 1,487 million board feet, or 90 percent, is Douglas-fir; 111 million board feet is western hemlock; and the remainder is chiefly western redcedar and noble fir. The volume of hardwood species is about 6 million board feet.

Approximately 93 percent of the total volume in the zone and an equal portion of the Douglas-fir volume is privately owned.



## Agricultural Zone

### Area

The agricultural zone occupies the central and southeastern portions of the county, and includes the whole of the valley lowland, the more gentle slopes to the north of the valley, and all of the Chehalem Hills to the south of the valley.

A total of 251 thousand acres, or 54 percent of the county's land area, was placed in the zone by the survey. Of this area 172 thousand acres, or approximately 69 percent, was classified as cultivated land or stump pasture; 75.5 thousand acres, or 30 percent, was mapped as forest land; and the remainder of 3.5 thousand acres was nonforest land, principally townsites and highways.

### Cultivated Land and Stump Pasture--Land

The cultivated lands of the agricultural zone are for the most part fertile and suited for a diversity of crops. The bottom lands, level benches, and more gentle slopes are utilized principally for the production of small grains, hay, vegetables, and small fruits. The steeper slopes and rounded ridge tops, particularly in the Chehalem Hills, are chiefly in nut and fruit orchards. The Bureau of the Census reports in 1934 a total of approximately 127 thousand acres in the county classed as crop land or plowable pasture and crops harvested from 89 percent of the acreage. Orchards and vineyards occupied an additional 10 thousand acres.

Areas of cut-over or burned lands, adjacent to cultivated land and obviously a part of a farm unit, that were used chiefly for grazing were classified as stump pastures. Usually most of the debris left from logging had been removed through burning and the area seeded to grasses.

### Forest Land

Forest land in the agricultural zone is usually comprised of small bodies of timber intermingled with the cultivated areas quite uniformly throughout most of the zone. Only on the more rugged topography of the southern part do any contiguous bodies of timber of appreciable extent occur. The forested tracts in the zone are occupied by a great diversity of types, varying from recent cut-over lands to virgin-timber stands, and representing all degrees of stocking, age, stand structure, and quality of timber.

Of the 75.5 thousand acres of forest land in the zone 13.5 thousand acres, or 18 percent, is occupied by stands, predominantly Douglas-fir, of saw-timber size; 24.3 thousand acres, or 32 percent, is stocked with immature Douglas-fir from 6-20 inches d.b.h.; and 16.5 thousand

acres, or 22 percent, is stocked with Douglas-fir seedlings and saplings, 0-6 inches d.b.h. Hardwoods, principally second-growth red alder, occupy 17.4 thousand acres, and 3.9 thousand acres are recent cut-over lands, nonrestocked old cut-over lands, or burns.

The saw-timber stands in the zone contain a merchantable volume of 502 million board feet. Old-growth Douglas-fir comprises 141 million board feet, second-growth Douglas-fir 323 million board feet, grand fir 33 million board feet, and hardwood species 5 million board feet. The volume of old-growth timber is in remanent, partially-cut, stands or in scattered trees in second-growth stands. As a rule this class of timber is defective and of relatively low quality. Most of the volume is in tracts of small extent--from 10 to 40 acres. The volume of second-growth Douglas-fir is chiefly in thrifty, fairly-well stocked, even-aged stands. Although tracts of this timber are usually of small acreage, they average considerably larger than those of the old-growth timber.

Approximately three-fourths of the acreage occupied by immature timber 6-20 inches d.b.h. is old cut-over land and one-fourth old burns. Stands on the burns are from 60 to 80 years of age and are in general of satisfactory stocking; those on the cut-over lands are from 20 to 50 years of age and likewise are principally of satisfactory stocking.

All of the area in the zone occupied by seedling and sapling Douglas-fir, 0-6 inches d.b.h., is cut-over land. Stocking of the stands is quite satisfactory; 41 percent of the type's area is well stocked, 36 percent is medium stocked, and 22 percent is poorly stocked. Stands of this type are principally of the 10-year age class; a few are in the 20- and 30-year age classes.

#### Recapitulation of Type Area and Timber Volume Statistics

The forest zone and the agricultural zone combined contain a total of 284 thousand acres of forest land or 61 percent of the county's land area. Saw-timber types occupy 62 thousand acres or 22 percent of the forest land area; immature types occupy 120 thousand acres or 42 percent; hardwoods stock 17 thousand acres or 6 percent; and the remainder--85 thousand acres or 30 percent--is deforested lands. The area of the detailed forest cover types is shown by ownership class in table 1; the area of generalized forest cover types, also by ownership class, is shown statistically in table 2 and graphically in figure 2; and the area of immature coniferous forest types is shown by age class and degree of stocking in table 3 and figure 3.

Total saw-timber volume in the county is nearly 2.2 billion board feet, of which 91 percent is Douglas-fir. A little over 2 billion board feet or 95 percent of total volume is privately owned and most of the remainder is on federally-owned revested grant lands. Table 5 gives the volume of timber by species and ownership class.

## Utilization of Forests

During the past two or three decades practically all of the cutting of sawlogs in the county has been in the forest zone. Prior to this logging and land-clearing operations had removed all but small scattered tracts of saw timber in the agricultural zone.

Production of sawlogs has fluctuated considerably in recent years because of economic conditions and salvage operations in fire-killed timber. During the 14-year period 1925-1938, the average annual production of sawlogs was approximately 145 million board feet. Peak production of the period was reached in 1936 mainly because of salvage operations, and low production was in 1932, the result of depressed economic conditions. Following the peak year of 1936, production declined appreciably in 1937 and further in 1938; production of the latter year was considerably below the average for the period.

Although there is quite a large number of small and medium-sized mills in the county, the greater part of the volume of sawlogs cut is shipped to Portland mills or the Columbia River log market. A branch line of the Southern Pacific railroad hauls the bulk of the volume of logs exported out of the county and the Consolidated Timber Company line hauls practically all of the remainder; a small volume of logs is transported to Portland by trucks over public highways.

In 1938 there were 18 active mills in the county with a combined 8-hour capacity of approximately one-half million board feet; inactive mills had an additional capacity of one-quarter million board feet. In recent years several mills in the county have burned and have not been replaced. Two shingle mills of a combined capacity of about 200 squares per 8-hour day were active in 1938.

A small volume each of pulpwood, piling, and veneer logs is cut in the county annually. Douglas-fir and oak fuel wood is also cut in small quantities principally in the agricultural zone.

Comparison of results of the original inventory, as of November 1, 1933, and the revised inventory, as of March 1, 1940, reveals a reduction of 1,017 million board feet in the county during the  $6\frac{1}{4}$ -year period. Although the total volume of sawlogs cut during the period cannot be accurately determined at this time, since sawlog production statistics for 1939 and 1940 are not yet available, it is probable that about 90 percent of the reduction was due to cutting and 10 percent to fire. Reduction of Douglas-fir volume during the period amounted to 869 million board feet. Approximately three-fourths of this volume was of old-growth timber more than 40 inches d.b.h., principally in private ownership.

The area of saw-timber types decreased approximately 22 thousand acres during the time between inventories as might be expected in view



of the saw-timber volume reduction. The area of immature stands 6-20 inches d.b.h. increased a little over a thousand acres, however, due to sapling stands growing into pole stands during the interval. The area of seedling and sapling stands, 0-6 inches d.b.h., increased 23 thousand acres, or about 76 percent, indicating the restocking of about half of the acreage of cut-over lands logged between 1920-1929, inclusive, and mapped as recent cut-over land in the original inventory. Comparison of inventories also shows that about two-fifths of the area mapped in 1930 as nonrestocked cut-over land, cut prior to 1920, became restocked by 1940.

### Management of Forest Land

If forests are to remain an important factor in the economy of Washington County, reasonable forest practices will have to be established.

A large part of the forest land has a relatively high productive capacity. In table 4, which shows the site quality class of the forest land, it is seen that approximately 45 percent of the forest land is of site quality class II or better and nearly all the remainder is in class III, a site of medium capacity but capable of producing good timber. Also, the bulk of the forest land in the forest zone is probably better suited, because of topography, for the production of timber than any other use. In the agricultural zone the topography and character of soil of a large portion of the forested areas are favorable for agricultural use but cost of clearing is usually high. Most of the forested areas in the agricultural zone are now grazed to a varying extent, depending on character and density of forest cover and forage values. A small acreage of cut-over land in the forest zone is now being grazed by sheep.

At present the greatest problem of management is fire protection. During the last decade loss from fire has been particularly heavy in the county both of merchantable timber and immature stands. Fires in 1932 and 1933 killed approximately one and a half billion board feet of some of the finest timber, and subsequent fires have not only destroyed an appreciable volume of additional timber but have killed reproduction that had restocked the areas denuded in 1932 and 1933. Several of the burns and nonrestocked cut-over areas are so remote from seed supply that restocking is doubtful.

In the forest zone of the county sustained-yield management of forest lands is only possible through the consolidation, under stable ownership, of the large number of individual holdings. Federally-owned revested land grants in the county totaling about 11 thousand acres are being placed under sustained-yield management and farm forestry projects have been started in parts of the agricultural zone by the Soil Conservation Service.

It is probable that most of the old-growth saw timber in the small scattered tracts in the agricultural zone will be cut for fuel wood, but the thrifty second-growth stands are capable of furnishing considerable piling material.

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

TABLE 1. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS  
DATA CORRECTED TO MARCH 1, 1940

| SUR-<br>VEY<br>TYPE<br>NO. | TYPE DEFINITION  | PRIVATE | STATE,<br>AVAILABLE<br>FOR<br>CUTTING | COUNTY | FEDERAL,<br>AVAILABLE FOR CUTTING |                  | TOTAL   |
|----------------------------|--|---------|---------------------------------------|--------|-----------------------------------|------------------|---------|
|                            |  |         |                                       |        | REVESTED<br>LAND<br>GRANTS        | PUBLIC<br>DOMAIN |         |
| 4                          | WOODLAND   |         |                                       |        |                                   |                  |         |
| 4                          | OAK-MADRONE: FOREST CONTAINING OVER 60% OF OAK OR MADRONE                                      | 695     |                                       |        |                                   |                  | 695     |
| 6                          | DOUGLAS-FIR: FOREST CONTAINING 60% OR MORE OF DOUGLAS-FIR                                      |         |                                       |        |                                   |                  |         |
| 6                          | DOUGLAS-FIR, LARGE OLD GROWTH: MORE THAN 40" D.B.H.  | 14,275  | 85                                    | 205    | 980                               |                  | 15,545  |
| 7                          | DOUGLAS-FIR, SMALL OLD GROWTH: 22 TO 40" D.B.H.  | 12,010  |                                       | 100    | 600                               | 15               | 12,725  |
| 8                          | DOUGLAS-FIR, LARGE SECOND GROWTH: 22 TO 40" D.B.H.   | 30,200  | 40                                    | 335    | 2,115                             | 80               | 32,770  |
| 9                          | DOUGLAS-FIR, SMALL SECOND GROWTH: 6 TO 20" D.B.H.  | 63,355  | 475                                   | 1,030  | 1,370                             | 130              | 66,360  |
| 10                         | DOUGLAS-FIR SEEDLINGS AND SAPLINGS: LESS THAN 6" D.B.H.  | 50,525  | 235                                   | 1,900  | 1,140                             | 55               | 53,855  |
| 14                         | WESTERN HEMLOCK: FOREST CONTAINING 50% OR MORE OF WESTERN HEMLOCK                              |         |                                       |        |                                   |                  |         |
| 14                         | WESTERN HEMLOCK, LARGE: MORE THAN 20" D.B.H.   | 120     |                                       |        |                                   |                  | 120     |
| 29                         | GRAND FIR: FOREST CONTAINING 50% OR MORE OF GRAND FIR  |         |                                       |        |                                   |                  |         |
| 29                         | GRAND FIR, LARGE: 20" OR MORE D.B.H.   | 950     |                                       |        |                                   |                  | 950     |
| 31.5                       | HARDWOODS: FOREST CONTAINING 50% OR MORE OF HARDWOODS  |         |                                       |        |                                   |                  |         |
| 31.5                       | HARDWOODS, LARGE: 12" OR MORE D.B.H.   | 2,460   |                                       |        |                                   |                  | 2,460   |
| 31                         | HARDWOODS, SMALL: LESS THAN 12" D.B.H.   | 14,325  |                                       |        |                                   |                  | 14,325  |
| 35                         | NONRESTOCKED CUTOVER: CLEAR CUT AREA NOT SATISFACTORILY RESTOCKED                              |         |                                       |        |                                   |                  |         |
| 35                         | CLEAR CUT PRIOR TO 1920  | 2,770   | 40                                    | 765    |                                   |                  | 3,575   |
| 35A                        | CLEAR CUT FROM 1920 TO 1929, INCLUSIVE   | 9,745   |                                       | 380    | 635                               |                  | 10,760  |
| 36                         | RECENT CUTOVER: CLEAR CUT SINCE BEGINNING OF 1930  | 34,000  |                                       | 2,660  | 2,570                             |                  | 39,230  |
| 37                         | DEFORESTED AREA: NONRESTOCKED AREA DEFORESTED OTHERWISE THAN BY CUTTING                        |         |                                       |        |                                   |                  |         |
| 37                         | DEFORESTED BURN  | 28,490  | 5                                     | 590    | 2,000                             |                  | 31,085  |
|                            | TOTAL FOREST TYPES   | 263,920 | 880                                   | 7,965  | 11,410                            | 280              | 284,455 |
| 2                          | NONFOREST LAND: CULTIVATED, GRASS, BRUSH, BARRENS, URBAN AREAS, AND UNMEANDERED WATER SURFACES |         |                                       |        |                                   |                  |         |
| 2                          | GRASS, BRUSH, BARRENS, URBAN AREAS, AND UNMEANDERED WATER SURFACES                             | 3,680   |                                       | 5      |                                   |                  | 3,685   |
| 3                          | CULTIVATED AREAS   | 179,560 |                                       | 70     |                                   |                  | 179,630 |
|                            | TOTAL  | 447,160 | 880                                   | 8,040  | 11,410                            | 280              | 467,770 |

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

TABLE 2. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS  
DATA CORRECTED TO MARCH 1, 1940

| TYPE DEFINITION   | :                | :       | :         | :      | FEDERAL,              |        | :       |
|---|------------------|---------|-----------|--------|-----------------------|--------|---------|
|   | :                | :       | STATE,    | :      | AVAILABLE FOR CUTTING |        | :       |
|   | :                | PRIVATE | AVAILABLE | COUNTY | REVESTED              | :      | TOTAL   |
|   | :                | :       | FOR       | :      | LAND                  | PUBLIC | :       |
|   | :                | CUTTING | :         | :      | GRANTS                | DOMAIN | :       |
| HARDWOODS   | :                | :       | :         | :      | :                     | :      | :       |
| SURVEY TYPES 31 AND 31.5                                | :                | 16,785  | :         | :      | :                     | :      | 16,785  |
| CONIFERS MORE THAN ABOUT 20" D.B.H.                     | :                | :       | :         | :      | :                     | :      | :       |
| SURVEY TYPES 6, 7, 8, 14, AND 29                        | :                | 57,555  | 125       | 640    | 3,695                 | 95     | 62,110  |
| CONIFERS 6 TO 20" D.B.H.                                | ON CUTOVER AREAS | 24,810  | 90        | 275    | :                     | :      | 25,175  |
| SURVEY TYPE 9   | ON OLD BURNS     | 38,545  | 385       | 755    | 1,370                 | 130    | 41,185  |
|   | TOTAL            | 63,355  | 475       | 1,030  | 1,370                 | 130    | 66,360  |
| CONIFERS 0 TO 6" D.B.H.                                 | ON CUTOVER AREAS | 42,460  | 190       | 1,490  | 335                   | 40     | 44,515  |
| SURVEY TYPE 10  | ON OLD BURNS     | 8,065   | 45        | 410    | 805                   | 15     | 9,340   |
|   | TOTAL            | 50,525  | 235       | 1,900  | 1,140                 | 55     | 53,855  |
| NONCOMMERCIAL AREAS                                     | :                | :       | :         | :      | :                     | :      | :       |
| SURVEY TYPE 4   | :                | 695     | :         | :      | :                     | :      | 695     |
| RECENT CUTOVER AREAS: CLEAR CUT SINCE BEGINNING OF 1930 | :                | :       | :         | :      | :                     | :      | :       |
| SURVEY TYPE 36  | :                | 34,000  | :         | 2,660  | 2,570                 | :      | 39,230  |
| NONRESTOCKED CUTOVER AREAS AND DEFORESTED BURNS         | :                | :       | :         | :      | :                     | :      | :       |
| SURVEY TYPES 35, 35A, AND 37                            | :                | 41,005  | 45        | 1,735  | 2,635                 | :      | 45,420  |
| <hr/>   |                  |         |           |        |                       |        |         |
| TOTAL FOREST TYPES                                      | :                | 263,920 | 880       | 7,965  | 11,410                | 280    | 284,455 |
| <hr/>   |                  |         |           |        |                       |        |         |
| NONFOREST LAND  | :                | :       | :         | :      | :                     | :      | :       |
| SURVEY TYPES 2 AND 3                                    | :                | 183,240 | :         | 75     | :                     | :      | 183,315 |
| <hr/>   |                  |         |           |        |                       |        |         |
| TOTAL   | :                | 447,160 | 880       | 8,040  | 11,410                | 280    | 467,770 |



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

TABLE 3. AREA, IN ACRES, OF CERTAIN IMMATURE CONIFEROUS FOREST TYPES,  
BY AGE CLASS AND DEGREE OF STOCKING  
DATA CORRECTED TO MARCH 1, 1940

|         |          | TYPE NUMBER AND NAME |              |  |               |
|---------|----------|----------------------|--------------|--|---------------|
|         |          | 10                   | 9            |  |               |
| AGE     | DEGREE   | DOUGLAS-FIR          | DOUGLAS-FIR  |  |               |
| CLASS   | OF       | SEEDLINGS            | SMALL        |  |               |
| (YEARS) | STOCKING | AND                  | SECOND       |  |               |
|         |          | SAPLINGS             | GROWTH       |  |               |
|         |          |                      |              |  |               |
| 10      | GOOD     | 1,485                |              |  | 1,485         |
|         | MEDIUM   | 16,450               |              |  | 16,450        |
|         | POOR     | <u>24,970</u>        |              |  | <u>24,970</u> |
|         | TOTAL    | 42,905               |              |  | 42,905        |
| 20      | GOOD     | 4,735                | 1,135        |  | 5,870         |
|         | MEDIUM   | 4,275                | 2,095        |  | 6,370         |
|         | POOR     | <u>605</u>           |              |  | <u>605</u>    |
|         | TOTAL    | 9,615                | 3,230        |  | 12,845        |
| 30      | GOOD     | 1,050                | 5,425        |  | 6,475         |
|         | MEDIUM   | 285                  | 16,215       |  | 16,500        |
|         | POOR     |                      | <u>1,100</u> |  | <u>1,100</u>  |
|         | TOTAL    | 1,335                | 22,740       |  | 24,075        |
| 40      | GOOD     |                      | 8,025        |  | 8,025         |
|         | MEDIUM   |                      | 9,740        |  | 9,740         |
|         | POOR     |                      | <u>1,215</u> |  | <u>1,215</u>  |
|         | TOTAL    |                      | 18,980       |  | 18,980        |
| 50      | GOOD     |                      | 2,105        |  | 2,105         |
|         | MEDIUM   |                      | 4,005        |  | 4,005         |
|         | POOR     |                      | <u>995</u>   |  | <u>995</u>    |
|         | TOTAL    |                      | 7,105        |  | 7,105         |
| 60      | GOOD     |                      | 4,095        |  | 4,095         |
|         | MEDIUM   |                      | 4,215        |  | 4,215         |
|         | POOR     |                      | <u>1,495</u> |  | <u>1,495</u>  |
|         | TOTAL    |                      | 9,805        |  | 9,805         |
| 70      | GOOD     |                      | 735          |  | 735           |
|         | MEDIUM   |                      | 3,025        |  | 3,025         |
|         | POOR     |                      | <u>75</u>    |  | <u>75</u>     |
|         | TOTAL    |                      | 3,835        |  | 3,835         |
| 80      | GOOD     |                      |              |  |               |
|         | MEDIUM   |                      | 505          |  | 505           |
|         | POOR     |                      | <u>160</u>   |  | <u>160</u>    |
|         | TOTAL    |                      | 665          |  | 665           |
| TOTAL   | GOOD     | 7,270                | 21,520       |  | 28,790        |
| ALL     | MEDIUM   | 21,010               | 39,800       |  | 60,810        |
| AGES    | POOR     | <u>25,575</u>        | <u>5,040</u> |  | <u>30,615</u> |
|         | TOTAL    | 53,855               | 66,360       |  | 120,215       |

FOREST STATISTICS FOR WASHINGTON COUNTY, OREGON  
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TABLE 4. LAND AREA, FOREST LAND AREA, AND COMMERCIAL CONIFER AREAS,  
BY SITE QUALITY CLASS<sup>1/</sup>  
DATA CORRECTED TO MARCH 1, 1940

| KIND OF FOREST AND SITE             | TOTAL AREA |         | AREA IN : COMMERCIAL |          |
|-------------------------------------|------------|---------|----------------------|----------|
|                                     | ACRES      | PERCENT | FOREST LAND          | CONIFERS |
| COMMERCIAL CONIFER                  |            |         |                      |          |
| DOUGLAS-FIR                         |            |         |                      |          |
| CLASS I                             | 4,005      | 0.9     | 1.4                  | 1.5      |
| CLASS II                            | 124,410    | 26.6    | 43.8                 | 46.6     |
| CLASS III                           | 133,220    | 28.5    | 46.8                 | 49.9     |
| CLASS IV                            | 5,340      | 1.1     | 1.9                  | 2.0      |
| TOTAL COMMERCIAL CONIFER            | 266,975    | 57.1    | 93.9                 | 100.0    |
| OAK-MADRONE                         | 695        | 0.1     | 0.2                  |          |
| HARDWOOD                            | 16,785     | 3.6     | 5.9                  |          |
| TOTAL OTHER THAN COMMERCIAL CONIFER | 17,480     | 3.7     | 6.1                  |          |
| ALL FOREST TYPES                    | 284,455    | 60.8    | 100.0                |          |
| NONFOREST TYPES                     | 183,315    | 39.2    |                      |          |
| GRAND TOTAL                         | 467,770    | 100.0   |                      |          |

<sup>1/</sup> 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 TYPES, CLASS I BEING THE HIGHEST. IN THE SURVEY DOUGLAS-FIR CLASSIFICATIONS WERE USED NOT ONLY FOR TYPES IN WHICH THIS SPECIES IS DOMINANT BUT ALSO FOR OTHER TYPES FOR WHICH NO SITE QUALITY CLASSIFICATIONS HAVE BEEN DEVELOPED.

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

TABLE 5. VOLUME OF TIMBER BY SPECIES AND OWNERSHIP CLASS  
DATA CORRECTED TO MARCH 1, 1940

TREES 16" OR MORE IN D.B.H.<sup>1/</sup>  
THOUSANDS OF BOARD FEET, LOG SCALE, SCRIBNER RULE

| SUR-: | SPECIES <sup>2/</sup>           | PRIVATE   | STATE,<br>AVAILABLE<br>FOR<br>CUTTING | COUNTY | FEDERAL,<br>AVAILABLE FOR CUTTING |                                    | TOTAL     |
|-------|---------------------------------|-----------|---------------------------------------|--------|-----------------------------------|------------------------------------|-----------|
|       |                                 |           |                                       |        | REVESTED                          | PUBLIC<br>LAND<br>GRANTS<br>DOMAIN |           |
| DA :  | LARGE OLD-GROWTH DOUGLAS-FIR    | 702,150   | 2,271                                 | 4,071  | 39,265                            | 761                                | 748,518   |
| DB :  | SMALL OLD-GROWTH DOUGLAS-FIR    | 405,517   | 238                                   | 1,220  | 7,836                             | 122                                | 414,933   |
| DC :  | LARGE SECOND-GROWTH DOUGLAS-FIR | 621,320   | 1,566                                 | 5,155  | 29,311                            | 1,240                              | 658,592   |
| DD :  | SMALL SECOND-GROWTH DOUGLAS-FIR | 118,052   | 944                                   | 681    | 8,751                             | 102                                | 128,530   |
| HA :  | LARGE WESTERN HEMLOCK           | 97,866    |                                       | 202    | 585                               |                                    | 98,653    |
| HB :  | SMALL WESTERN HEMLOCK           | 12,614    |                                       | 23     | 65                                |                                    | 12,702    |
| C :   | WESTERN REDCEDAR, LIVE          | 19,694    |                                       |        | 2,027                             |                                    | 21,721    |
| KC :  | WESTERN REDCEDAR, DEAD          | 406       |                                       |        |                                   |                                    | 406       |
| W :   | WESTERN WHITE PINE              | 220       |                                       |        |                                   |                                    | 220       |
| WF :  | GRAND FIR                       | 37,759    |                                       | 58     | 632                               |                                    | 38,449    |
| NF :  | NOBLE FIR                       | 17,186    |                                       | 315    |                                   |                                    | 17,501    |
| RA :  | RED ALDER                       | 3,447     | 5                                     | 27     | 184                               | 5                                  | 3,668     |
| OM :  | BIGLEAF MAPLE                   | 2,461     | 4                                     | 27     | 184                               | 5                                  | 2,681     |
| ASH : | OREGON ASH                      | 2,828     |                                       |        |                                   |                                    | 2,828     |
| BC :  | NORTHERN BLACK COTTONWOOD       | 1,000     |                                       |        |                                   |                                    | 1,000     |
| OO :  | OREGON WHITE OAK                | 500       |                                       |        |                                   |                                    | 500       |
| TOTAL |                                 | 2,043,020 | 5,028                                 | 11,779 | 88,840                            | 2,235                              | 2,150,902 |

<sup>1/</sup> TREES OF HARDWOOD SPECIES TAKEN FROM 12" AND MORE D.B.H.

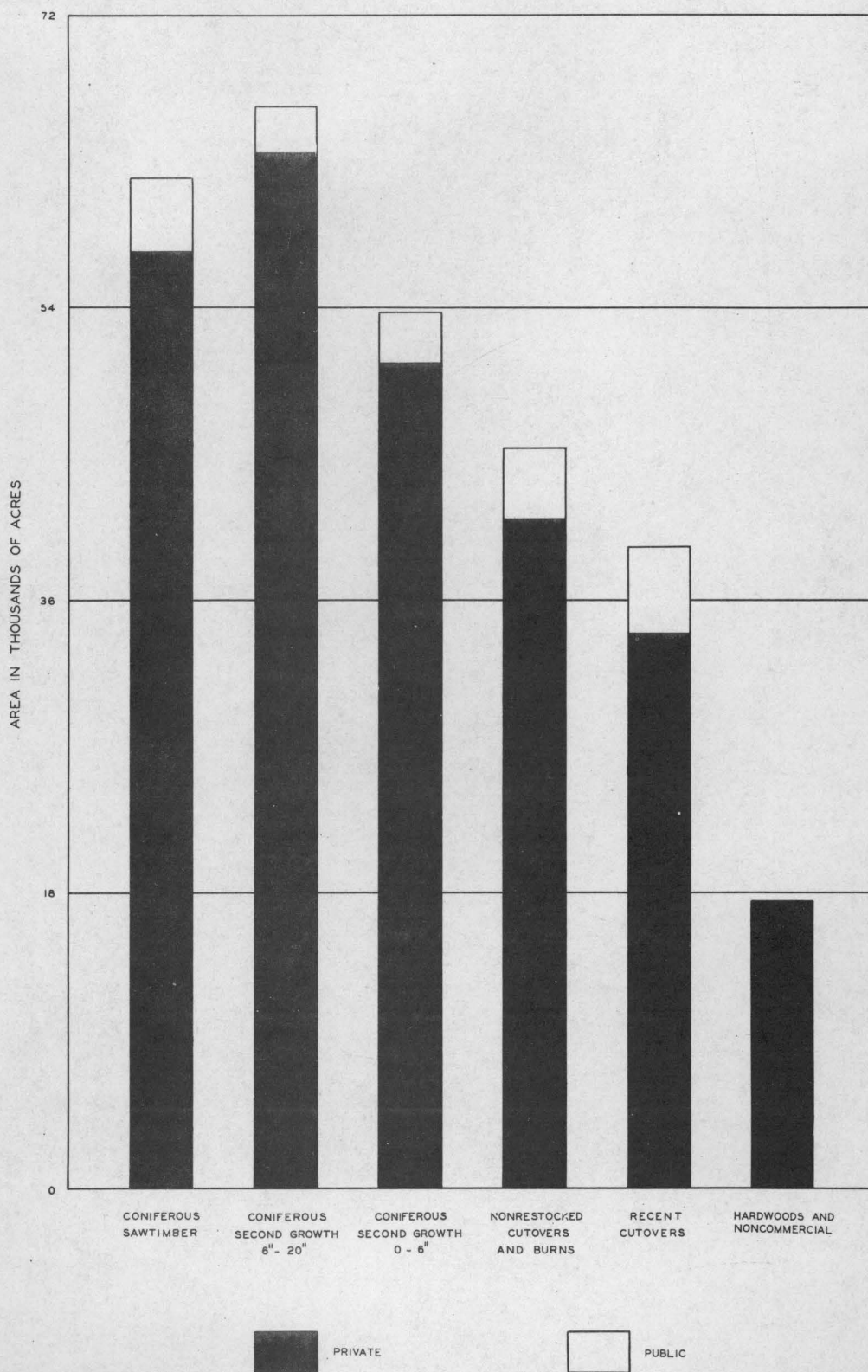
<sup>2/</sup> IN ADDITION TO THE SPECIES LISTED, PACIFIC SILVER FIR AND PONDEROSA PINE ARE KNOWN TO OCCUR IN THE COUNTY, BUT IN NEGLIGIBLE QUANTITIES ONLY.



# FOREST STATISTICS FOR WASHINGTON COUNTY, OREGON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 2. GENERALIZED FOREST TYPES BY OWNERSHIP CLASS (FROM TABLE 2.)



# FOREST STATISTICS FOR WASHINGTON COUNTY, OREGON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 3. AGE CLASS AND STOCKING OF IMMATURE CONIFEROUS STANDS (FROM TABLE 3.)

