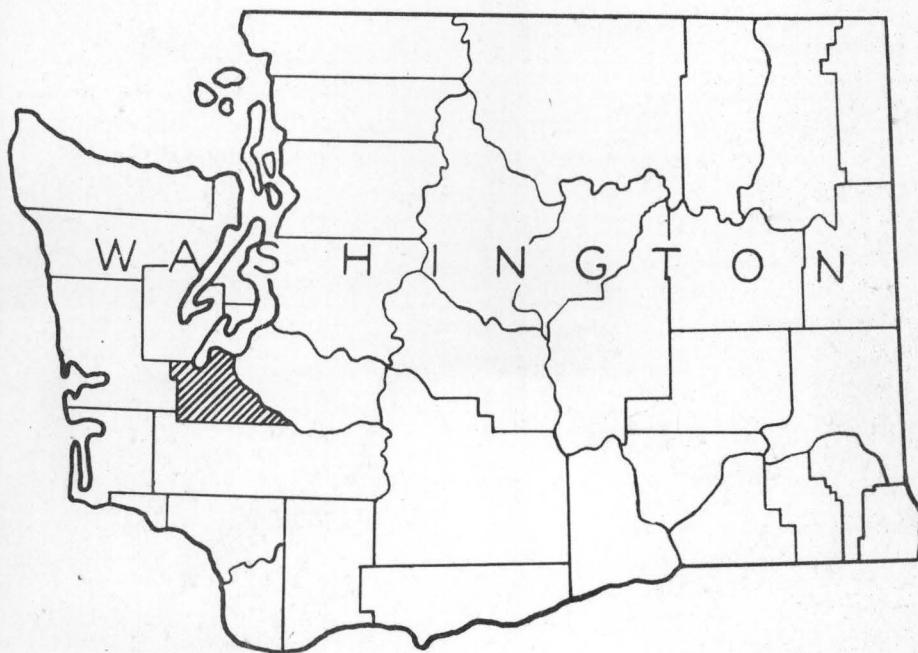


# FOREST STATISTICS FOR THURSTON COUNTY, WASHINGTON

FROM THE INVENTORY PHASE OF THE FOREST SURVEY  
REVISED IN 1939



U. S. DEPARTMENT OF AGRICULTURE                      FOREST SERVICE  
PACIFIC NORTHWEST FOREST AND RANGE EXPERIMENT STATION  
STEPHEN N. WYCKOFF DIRECTOR

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PORTLAND, OREGON

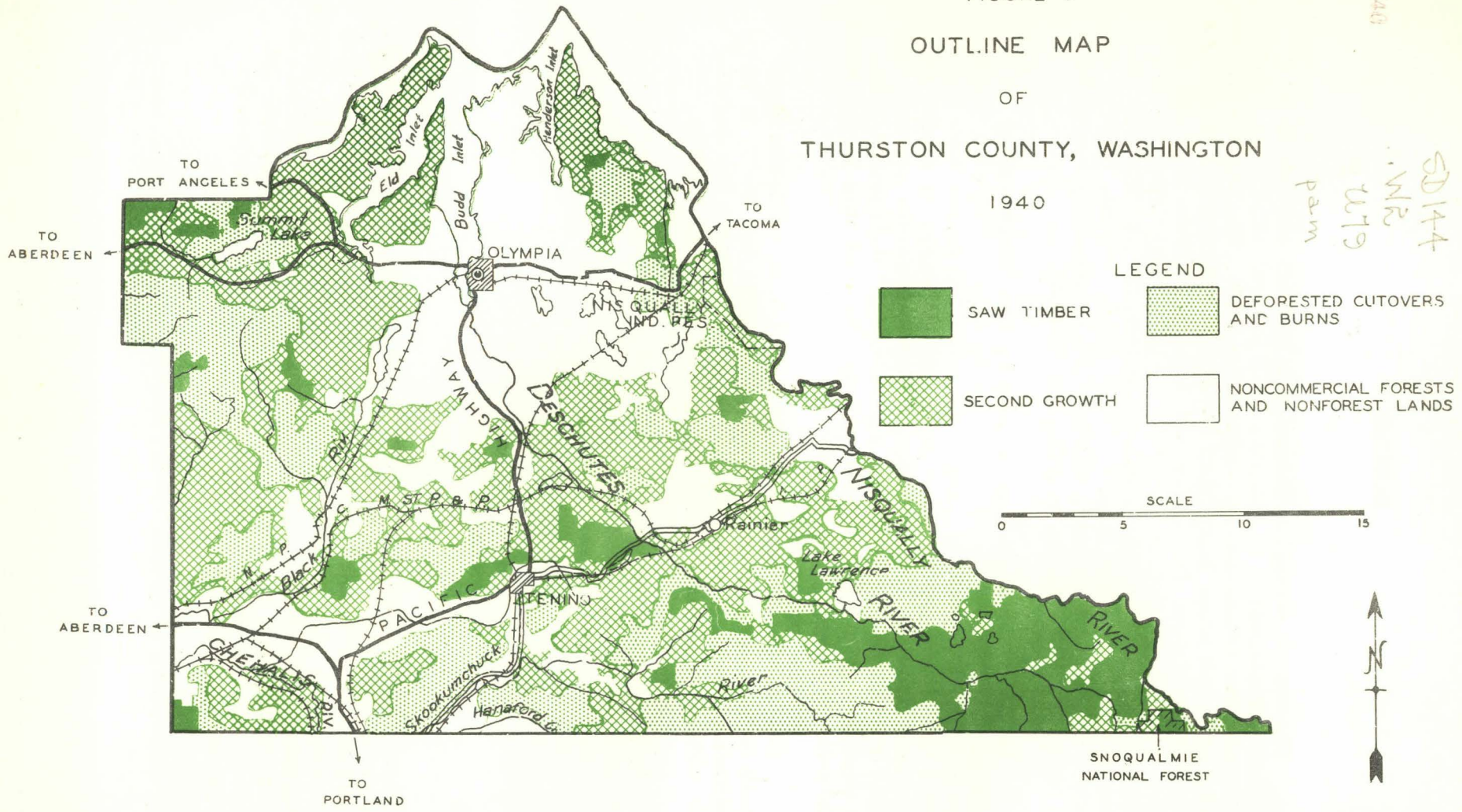
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FIGURE I.  
OUTLINE MAP  
OF  
THURSTON COUNTY, WASHINGTON

1940



## FOREWORD

The forest survey, a Nation-wide project consisting of a detailed investigation of the country's present and future forest resources, was authorized by Congress in 1928. The Pacific Northwest Forest and Range Experiment Station was designated to conduct the forest survey of Washington and Oregon, and work was commenced in the Douglas fir region in 1930.\* The initial inventory of Thurston County, Washington, was carried on during 1932 and the early part of 1933, and in 1934 a statistical report, "Forest Statistics for Thurston County, Washington", summarizing results of the inventory as of March 1, 1933, was issued.

As part of the project of keeping the forest survey of Washington and Oregon up to date, the forests of Thurston County were reinventoried in the summer of 1939. The reinventory consisted of examination in the field of areas logged or burned over since March 1, 1933, reexamination of all deforested cut-over and burned areas, and adjustment in the office of statistical data. The results of this reinventory are presented in this report which supersedes the one issued in 1934.

The methods used in the survey, detailed definitions of forest types and timber volume specifications, are given in an explanatory text, "The Forest Survey of the Douglas Fir Region." This should be referred to in connection with this report.

\* 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 THURSTON COUNTY, WASHINGTON<sup>1/</sup>

By Edward D. Buell<sup>2/</sup>

Because of the accessibility of the forests to tidewater, the quality of the timber, and favorable logging conditions, logging began at an early date in Thurston County, Washington, and much of the original stand has been cut. The present saw-timber volume of 1.4 billion board feet is only about one-seventh of the estimated original stand.

The region now within the county's boundaries was settled early in the history of the State of Washington; Fort Nisqually, established at the mouth of the Nisqually River in 1840, was one of the first white settlements on Puget Sound.

Although the forests were utilized from the first and played an important part in the economic development of the county, the bulk of the saw-timber volume has been cut in the last two decades. If the present rate of depletion continues practically all of the old-growth timber in the county will have been removed within a century after harvesting began.

## Location and Description of County

Thurston County is located in the central part of western Washington at the southern extremity of Puget Sound. It is irregular in shape; its greatest length east and west is approximately 45 miles and width north and south about 30 miles (figure 1). The total land area is 467,495 acres. Elevations vary from sea level on the Sound to about 3,000 feet in the southeastern portion of the county. Generally speaking, Thurston County is less rugged and more accessible than most of the western Washington counties. About 70 percent of its area is a level or slightly rolling plain lying between the foothills of the Cascade and Coast Ranges and extending northeasterly and southwesterly across the entire county. Scattered over this plain are numerous treeless prairies ranging in size from less than one hundred acres to over one thousand acres.

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1/ 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.

2/ The field and office work of the revised forest inventory of Thurston County, Washington, was done by M. J. Lauridsen, B. C. Baker, E. D. Buell, D. Lester Lynch, P. F. Liniger, Edna L. Hunt, W. E. Zeuthen, and T. J. Rowe.

Two drainage systems divide the county into nearly equal parts. The northern part lies in the drainage basins of the Nisqually and Deschutes Rivers which flow north into Puget Sound while the southern part is tributary to the Skookumchuck and Black Rivers which flow south into the Chehalis River (figure 1).

Thurston County has a uniform climate similar to that of other Puget Sound localities, with cool summers, mild winters and moderately heavy precipitation. The weather bureau station at Olympia since it was established in 1877 has recorded an average annual precipitation of 52 inches. The prairie section of the county receives less moisture than Olympia while at higher elevations there is more.

Transportation facilities are good. Transcontinental rail service is available and State and county highways form an excellent road system. Most important in the utilization of the county's forest resources is the cheap water transportation afforded by Puget Sound. The Harbor of Olympia accommodates vessels with a draft up to 29 feet. Raft and barge service between Olympia and other points on the Sound is an important feature. Many logs produced in the county are rafted to manufacturing plants outside its borders and a large portion of the volume of lumber manufactured in the county is shipped to market by boat. Quantities of logs from territory to the south are dumped into the Sound at Olympia in transit to other Puget Sound industrial centers.

Thurston County had a population of 31,351 people in 1930. Approximately one-half of these people lived in cities and villages and the remainder lived on farms, in small hamlets and logging camps. Olympia is the county seat, State capital, and principal city. It had 11,733 inhabitants in 1930. The rural population is uniformly distributed except where topography limits settlement.

#### Forest and Land-Use Types and Area

The forest land of Thurston County amounts to 353,809 acres and is occupied by 17 different forest-cover types. Nonforest land totals 113,686 acres and is comprised principally of agricultural areas and grass covered prairies. Table 1 gives acreages, by ownership class, for individual types; table 2 combines the type areas into nine generalized groups; and table 3 gives supplementary information concerning certain immature coniferous forest types. Data relative to the generalized and immature types are shown graphically in figures 2 and 3. A small scale county map showing four broad cover types is presented in figure 1. A detailed 1-inch-to-the-mile county type map showing type data as mapped in the field is available.<sup>3/</sup>

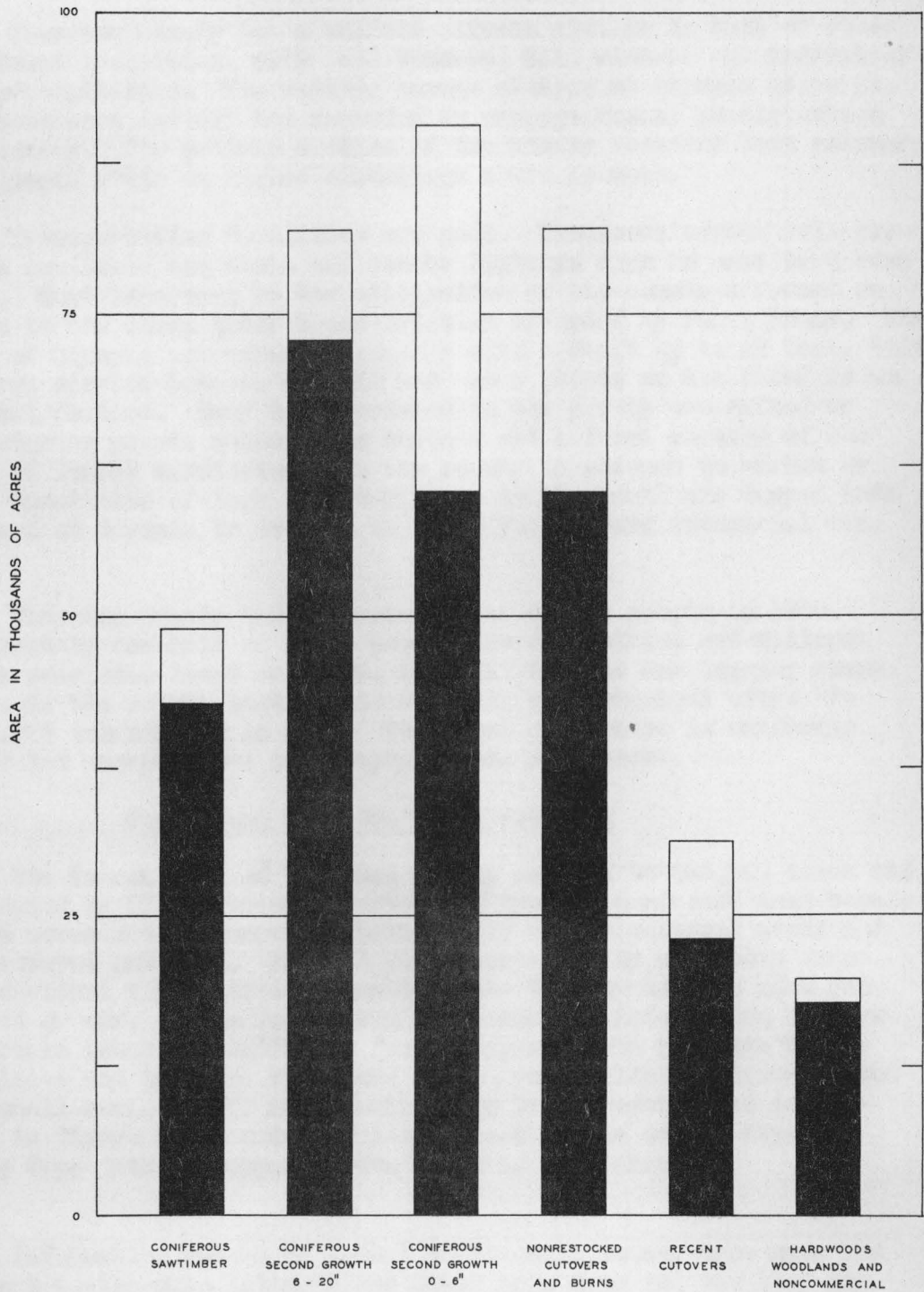
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<sup>3/</sup> For information regarding 1-inch-to-the-mile county type maps and  $\frac{1}{4}$ -inch-to-the-mile lithographed State type maps and how they may be obtained, address Director, Pacific Northwest Forest and Range Experiment Station, 423 U. S. Court House, Portland, Oreg.

# FOREST STATISTICS FOR THURSTON COUNTY, WASHINGTON

FROM INVENTORY PHASE OF FOREST SURVEY

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



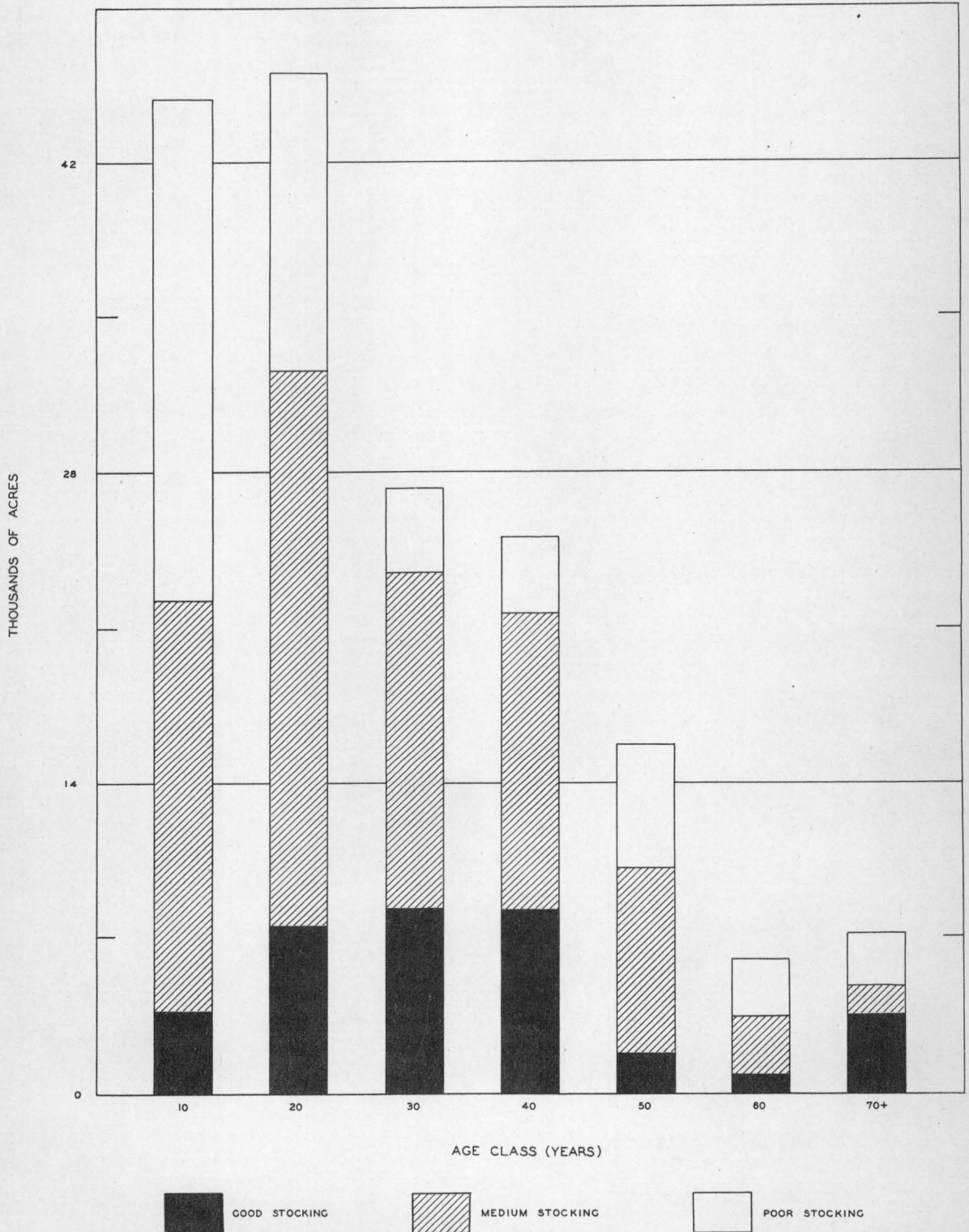
■ PRIVATE

□ INDIAN AND PUBLIC

# FOREST STATISTICS FOR THURSTON COUNTY, WASHINGTON

FROM INVENTORY PHASE OF FOREST SURVEY

FIGURE 3. AGE CLASS AND STOCKING OF IMMATURE CONIFEROUS STANDS (FROM TABLE 4)



Coniferous saw-timber stands, in which the timber averages about 20 inches or more in diameter, occupy approximately 49 thousand acres. About 40 thousand acres, or 82 percent, of this acreage is in one body of timber in the southeastern portion of the county. Small areas varying in size from 40 to 2,000 acres occur as isolated bodies scattered throughout the remainder of the county.

An outstanding characteristic of the saw-timber stands of Thurston County is the high percentage of Douglas fir types. The only forested area not occupied by a stand predominantly Douglas fir is 340 acres of western red cedar type along the Nisqually River. Old-growth Douglas fir stands occupy about two-thirds of the saw-timber area and second-growth Douglas fir stands one-third.

Forty-two thousand acres, or 86 percent, of the acreage of coniferous saw-timber types is privately owned and the remainder is principally in State ownership.

Immature conifers less than sawlog size cover 172 thousand acres, or nearly half the forest land acreage in the county, and are uniformly distributed over its whole area. They consist entirely of Douglas fir types except for 869 acres predominantly western hemlock. Nearly 92 percent of the area is restocked cut-over land and 8 percent restocked burns.

Immature types comprised of trees 6 to 20 inches d.b.h. cover 82 thousand acres. The stands range in age from 20 to 80 years. Stocking conditions are satisfactory over most of the area occupied by this group. Approximately 28 percent is fully stocked, 51 percent is medium stocked, and 21 percent is poorly stocked.

Areas occupied by the reproduction types, in which most of the trees are less than 6 inches d.b.h., total 90 thousand acres. Types in this group are found only in the 10- and 20-year age classes in Thurston County. Stocking conditions are less satisfactory than in the larger size group. About 12 percent of the acreage is fully stocked, 48 percent medium stocked, and 40 percent poorly stocked.

Approximately 77 percent of the acreage of immature coniferous types is in private ownership, 17 percent is State owned, and 6 percent is in the county, municipal, Indian, and Federal ownerships combined.

Recent cut-over areas total 31 thousand acres in Thurston County. Although they are located chiefly in the southeast and northwest parts of the county, small bodies are distributed throughout the forested area. Lands in this group include all areas clear cut between January 1, 1930, and September 1, 1939. In the reinventory the elapsed time since cutting was considered to be too short for the thorough establishment of seedlings and no classification of stocking conditions was undertaken. If a seed supply is available or no reburns occur after the slashing fire, it is reasonable to expect satisfactory stocking conditions to develop.



Deforested areas consist of deforested burns and nonrestocked cutovers. Deforested burns occur in small patches and total only 800 acres. Nonrestocked cut-over areas are distributed throughout the entire county. In size they range from less than 40 acres to several thousand acres. Most of the large areas are adjacent to recent cut-over land where logging has taken place in the last two decades. Nonrestocked cutovers are divided into two classes; those logged before 1920 and those logged between 1920 and 1929, inclusive.

The area of nonrestocked cutovers logged prior to 1920 amounts to 24,776 acres, an increase of 7,475 acres in area of this type mapped since the 1933 inventory. More intensive typing in the 1939 inventory of cut-over land used for grazing purposes accounts for some of the increase because certain areas classified as farm land in 1933 were classified as nonrestocked cutovers in 1939. The remainder is the result of fires that killed reproduction on land that was clear cut prior to 1920 and had restocked by 1933.

The amount of land clear cut between 1920 and 1929 and now nonrestocked is 56,385 acres. Recurring fires following logging contribute greatly to the nonrestocking of this land. Lack of seed supply prolongs the time required to reestablish a new crop in some instances, especially when the first crop of seedlings that start after logging is destroyed. A gradual decrease in the acreage of this type may be expected.

Hardwood types occupy a total of about 19 thousand acres in the county. They are found principally on the bottom lands along the Nisqually, Skookumchuck, Deschutes, and Black Rivers. Narrow stringers also occur along smaller streams. Most of the hardwood stands are composed of red alder; some are a mixture of red alder and bigleaf maple. Oregon ash occupies moist swales. Approximately 62 percent of the acreage of hardwood types is stocked with immature stands.

#### Site Quality of Forest Land

Site quality, or productive capacity, of the forest land of Thurston County is presented statistically in table 4. Commercial conifer sites comprise 95 percent of the forest area and 72 percent of the total area of the county. Site II occurs along the southern boundary and in the western part of the county; site III, the most prevalent, is well distributed over the county; and site IV is found bordering the prairies, near the shore of Puget Sound, and along the Nisqually River. Site V is found in such a small quantity that it is unimportant. Hardwood site occurs mostly as narrow belts bordering streams.

The productive capacity of the forest land of Thurston County is average as compared to western Washington as a whole.

## Saw-Timber Volume

The total saw-timber volume in the county is 1.4 billion board feet. Private owners hold 89.1 percent, the State of Washington 9.9 percent, and the remainder is divided among county, Indian, and Federal ownership classes. Only 687 thousand board feet, located in the Millersylvania State Park, is reserved from cutting by statute. Table 5 gives the volume by species and ownership class.

Coniferous species comprise approximately 98 percent of the saw-timber volume of the county. The volume of Douglas fir far exceeds that of any other species, making up 90 percent of the total. The other species in order of importance are western red cedar, western hemlock, balsam firs, and Sitka spruce. The hardwood species consist of red alder, bigleaf maple, northern black cottonwood, and Oregon ash.

The Douglas fir volume amounts to over 1.2 billion board feet, of which close to one-half is found in trees more than 40 inches in diameter, the so-called "yellow fir" prized highly in the lumber trade. The remaining Douglas fir volume is divided into three groups, small old growth, large second growth, and small second growth.

Hardwoods because of their scarcity are of little importance. They are cut mostly by farmers, truckers, and other local workers and are utilized chiefly for fuel wood and specialties.

## Forest Industries

From the time of the first white settlement, the harvesting and manufacturing of lumber has been a leading industrial activity in Thurston County. The employment and taxable wealth supplied by the county's forest industries are very important to the present economic status of the county. Some of the smaller communities depend entirely upon the forest for their continued existence. The daily capacity of the logging operations with headquarters in Thurston County are more than double that of the installed daily capacity of the sawmills. However, some of the large logging operators obtain a considerable proportion of their cut from adjacent counties.

Logging operations centered in the county have a combined capacity of 2,755 thousand board feet per 8-hour shift and range in size from 5 to 1,500 thousand board feet per shift. Some of the larger operators in the county also log in adjacent Lewis and Grays Harbor Counties. One operation at Vail, logging in both Thurston and Lewis Counties, transports its logs to a point on Puget Sound near Olympia where they are sorted and then rafted to Everett for manufacture.

The logging practice most commonly followed is clear cutting followed by broadcast burning. The equipment installed on logging operations is chiefly of the highspeed, heavy type and railroads are

used in transporting the logs to mill or market. Recently tractor logging and truck transportation have shown a marked increase, especially in parts of the county where the areas of timber are rather isolated and the size of the material is small as on tie operations.

Wood-using plants, consisting of sawmills, shingle mills, veneer plants, wood-working plants and a pulp and paper plant, center in the vicinity of Olympia. The total installed capacity of all sawmills in the county is approximately 1,100 thousand board feet per 8-hour shift, the shingle mills operate an aggregate of 35 machines, and the veneer plants have a total of 5 lathes, 10 driers, and 10 clippers. In addition to the sawmills located at Olympia, one of 200 thousand feet capacity is located at Bucoda, and one of 160 thousand feet capacity at Bordeaux. Both of these outlying plants obtain a large part of their raw material from adjacent counties.

### Forest Depletion

Forest depletion in Thurston County is due almost entirely to cutting and fire; the drain from insects, wind throw, and forest diseases is negligible.

Cutting depletion is by far the greatest drain on the volume of saw timber in the county and sawlog production accounts for 75 percent of all the material removed. The remainder is used for veneer blocks, shingle bolts, fuel wood, posts and similar products.

The average annual cut of material of sawlog size for the years 1925 to 1938, inclusive, was slightly less than 200 million board feet. Approximately 79 percent of the sawlog volume cut annually was Douglas fir. Western hemlock and western red cedar ranked second and third, respectively, and constituted about 20 percent; the remaining volume was made up of Sitka spruce, balsam firs, and hardwood species.

Between 1933 and 1939 the total volume of saw timber in the county was reduced by cutting from 2,074 million board feet to 1,393 million board feet, a depletion of 681 million board feet or nearly a third. Approximately 83 percent of the volume cut was Douglas fir. The volume in private ownership was reduced by 688 million feet, of which 13 million feet was due to acquisition of private holdings by the State and county and not to depletion.

The area of saw-timber types was reduced from 61,512 acres in 1933 to 48,832 acres in 1939. Of the 12,680 acres depleted all but 365 acres were occupied by stands predominantly Douglas fir, a high proportion of which was old-growth timber more than 40 inches in diameter.

Fire depletion in Thurston County occurs largely in stands less than saw-timber size. Loss of sawlog volume or saw-timber type acreage

was negligible between 1933 to 1939. However, damage to small second-growth stands and on areas occupied by seedlings was considerable. According to the annual reports of the State Division of Forestry, 375 fires burned over 22,491 acres in Thurston County from December 1, 1933, to November 30, 1938. These fires destroyed a large proportion of the seedlings, saplings and poles that may have occupied the areas burned; they reduced soil fertility by causing increased erosion and loss of organic matter; and they destroyed future source of seed by killing trees left after logging.

### Forest Growth

Forest growth statistics for the county were compiled from data gathered in the original inventory. As these data have not changed materially during the intervening years no new growth calculations were made following the 1939 survey. Volume increment in coniferous stands was computed in cubic feet for trees 5.1 inches or more d.b.h. and in board feet for trees 15.1 inches or more d.b.h. estimated in 32-foot logs to a 12-inch top. Hardwood growth was computed for all trees 11.1 inches or more d.b.h. in 8-foot logs to a 10-inch top. Various kinds of growth are recognized and calculated, two common kinds being current annual growth and potential annual growth.

Current annual growth is the increment accumulating during a specified year. This type of growth changes with the continuous change in forest stands and should not be used as a basis in estimating future yields unless careful adjustments are made.

Calculations based on 1933 data listed 6 growing types occupying 173 thousand acres and estimated volume increment for that year at 12,515 thousand cubic feet or 11,508 thousand board feet. Cubic-foot growth exceeds board-foot growth because of the heavy preponderance of second-growth stands under 16 inches d.b.h. Coniferous growing types comprised largely of Douglas fir cover 146 thousand acres. Hardwood growth types consisting mostly of red alder stands cover 27 thousand acres. The remaining 181 thousand acres of forest land was occupied by nongrowing types consisting of old-growth timber, noncommercial timber, and deforested areas.

Potential annual growth, the average annual growth that could be obtained on the whole of the county's commercial forest land under intensive forestry practice, has been estimated to be 34,427 thousand cubic feet or 100,468 thousand board feet.

### Land Use Trends

According to the Bureau of the Census reports agricultural land use in Thurston County did not show any tendency to increase until after 1930. In fact total land in farms declined from 151 thousand acres in 1910 to 140 thousand acres in 1920, increasing slightly to 143 thou-

sand acres in 1930. A marked upward trend attributed in part to the depression born back-to-the-land movement took place between 1930 and 1935. Total land in farms reached 167 thousand acres in 1935; this was accompanied by a decrease in average size of farms from 68 acres in 1930 to 56 acres in 1935 and an increase in number of farms from 2,082 in 1930 to 2,967 in 1935. Total crop land increased from 33 thousand acres in 1930 to 38 thousand acres in 1935. However, the acreage of land in agricultural use will probably not continue to increase and it is reasonable to assume that approximately three-fourths of the county's area will be available for forest management.

#### SUMMARY

A total of 354 thousand acres or three-fourths of the county's land area is forest land.

Only about 49 thousand acres, or 14 percent of the forest land area, supports saw-timber stands. Approximately 86 percent of the acreage of saw timber is privately owned; the remainder is principally State owned.

A total of 172 thousand acres is occupied by immature coniferous stands less than saw-timber size. Stocking conditions on these stands are fair; 69 percent is of medium degree of stocking or better.

Nonrestocked cut-over lands, logged prior to 1920, totaled 25 thousand acres in 1939, an increase of 7.5 thousand acres over the area of this type in 1933. This increase was due in part to fires that killed reproduction on land cut over prior to 1920 and restocked by 1933 and in part to more intensive classification in the reinventory of cut-over land utilized for grazing.

Approximately 56 thousand acres of cut-over land logged between 1920 and 1929 was nonrestocked in 1937. Recurring fires following logging contribute greatly to the nonrestocking of this land.

Between 1933 and 1939 total saw-timber volume in the county was reduced by cutting from 2,074 million board feet to 1,393 million board feet, a depletion of nearly one-third.

Based on data obtained in the 1933 inventory the current annual volume increment of the county's forests was calculated at 11 million board feet and potential annual increment at approximately 100 million board feet.

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

TABLE 1. AREA, IN ACRES, OF ALL FOREST COVER TYPES, BY OWNERSHIP CLASS  
DATA CORRECTED TO SEPTEMBER 1, 1939

SUR- VEY TYPE NO.	TYPE DEFINITION	STATE					FEDERAL				TOTAL
		PRIVATE	AVAILABLE FOR CUTTING	RESERVED FROM CUTTING	COUNTY	MUNICIPAL	INDIAN, TRIBAL AND TRUST ALLOTMENTS	PUBLIC DOMAIN	NATIONAL FOREST, AVAILABLE FOR CUTTING		
4	WOODLAND OAK-MADRONO: FOREST CONTAINING 60% OR MORE OF OAK OR MADRONO	325									325
6	DOUGLAS FIR: FOREST CONTAINING 60% OR MORE OF DOUGLAS FIR										
6	DOUGLAS FIR, LARGE OLD GROWTH: MORE THAN 40" D.B.H.	24,081	3,090		140			35			27,346
7	DOUGLAS FIR, SMALL OLD GROWTH: 22 TO 40" D.B.H.	3,235	1,140		95						4,470
8	DOUGLAS FIR, LARGE SECOND GROWTH: 22 TO 40" D.B.H.	14,421	1,475	90	340			40	310		16,676
9	DOUGLAS FIR, SMALL SECOND GROWTH: 6 TO 20" D.B.H.	72,642	6,165	350	2,110	70		295	10		81,642
10	DOUGLAS FIR SEEDLINGS AND SAPLINGS: LESS THAN 6" D.B.H.	59,917	22,830	10	5,915	130		770	40		89,612
	WESTERN HEMLOCK: FOREST CONTAINING 50% OR MORE OF WESTERN HEMLOCK										
15	WESTERN HEMLOCK, SMALL: 6 TO 20" D.B.H.	235									235
16	WESTERN HEMLOCK SEEDLINGS AND SAPLINGS: LESS THAN 6" D.B.H.	314	285		35						634
	WESTERN RED CEDAR: FOREST CONTAINING 40% OR MORE OF WESTERN RED CEDAR										
17	WESTERN RED CEDAR, LARGE: MORE THAN 24" D.B.H.	340									340
	LOGEPOLE PINE: FORESTS CONTAINING 50% OR MORE OF LOGEPOLE PINE										
26	LOGEPOLE PINE, SMALL: LESS THAN 12" D.B.H.	545			35						580
	HARDWOODS: FOREST CONTAINING 50% OR MORE OF HARDWOODS										
31.5	HARDWOODS, LARGE: 12" OR MORE D.B.H.	5,950	665	15	180			280			7,090
31	HARDWOODS, SMALL: LESS THAN 12" D.B.H.	10,728	745	25	100						11,598
	NONRESTOCKED CUTOVER: CLEAR CUT AREA NOT SATISFACTORILY RESTOCKED										
35	CLEAR CUT PRIOR TO 1920	20,416	2,255		2,105						24,776
35A	CLEAR CUT FROM 1920 TO 1929, INCLUSIVE	39,015	11,435		5,685	60		190			56,385
36	RECENT CUTOVER: CLEAR CUT SINCE BEGINNING OF 1930	23,175	7,290	10	650	20			80		31,225
	DEFORESTED AREA: NONRESTOCKED AREA DEFORESTED OTHERWISE THAN BY CUTTING										
37	DEFORESTED BURN	825									825
38	NONCOMMERCIAL ROCKY AREAS	50									50
	<b>TOTAL FOREST TYPES</b>	<b>276,214</b>	<b>57,375</b>	<b>500</b>	<b>17,390</b>	<b>280</b>	<b>1,570</b>	<b>160</b>	<b>320</b>	<b>353,809</b>	
	NONFOREST LAND: CULTIVATED, GRASS, BRUSH, BARRENS, URBAN AREAS, AND UNMEANDERED WATER SURFACES										
2	GRASS, BRUSH, BARRENS, URBAN AREAS, AND UNMEANDERED WATER SURFACES	10,857	120	30	385	135					11,527
3	CULTIVATED AREAS	100,139	1,115	195	220	245	230	15			102,159
	<b>TOTAL</b>	<b>387,210</b>	<b>58,610</b>	<b>725</b>	<b>17,995</b>	<b>660</b>	<b>1,800</b>	<b>175</b>	<b>320</b>	<b>467,495</b>	

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

TABLE 2. AREA, IN ACRES, OF GENERALIZED FOREST TYPES, BY OWNERSHIP CLASS  
DATA CORRECTED TO SEPTEMBER 1, 1939

TYPE DEFINITION	STATE			COUNTY	MUNICIPAL	INDIAN, TRIBAL AND TRUST ALLOTMENTS	FEDERAL		TOTAL
	PRIVATE	AVAILABLE FOR CUTTING	RESERVED FROM CUTTING				PUBLIC DOMAIN	NATIONAL FOREST, AVAILABLE FOR CUTTING	
WOODLAND: OAK-MADRONO SURVEY TYPE 4	325								325
HARDWOODS: ALDER, MAPLE, COTTONWOOD, AND ASH SURVEY TYPES 31 AND 31.5	16,678	1,410	40	280		280			18,688
CONIFERS MORE THAN ABOUT 20" D.B.H. SURVEY TYPES 6, 7, 8, AND 17	42,077	5,705	90	575		35	40	350	48,832
CONIFERS 6 TO 20" D.B.H. SURVEY TYPES 9 AND 15	ON CUTOVER AREAS 61,786	4,050	350	1,940	70	205			68,401
	ON OLD BURNS 11,091	2,115		170		90		10	13,476
	TOTAL 72,877	6,165	350	2,110	70	295		10	81,877
CONIFERS LESS THAN 6" D.B.H. SURVEY TYPES 10 AND 16	ON CUTOVER AREAS 59,508	23,025	10	5,950	130	770	40		89,433
	ON OLD BURNS 723	90							813
	TOTAL 60,231	23,115	10	5,950	130	770	40		90,246
NONCOMMERCIAL AREAS SURVEY TYPES 26 AND 38	595			35					630
RECENT CUTOVER AREAS: CLEAR CUT SINCE BEGINNING OF 1930 SURVEY TYPE 36	23,175	7,290	10	650	20		80		31,225
NONRESTOCKED CUTOVER AREAS AND DEFORESTED BURNS SURVEY TYPES 35, 35A, AND 37	60,256	13,690		7,790	60	190			81,986
<b>TOTAL FOREST TYPES</b>	<b>276,214</b>	<b>57,375</b>	<b>500</b>	<b>17,390</b>	<b>280</b>	<b>1,570</b>	<b>160</b>	<b>320</b>	<b>353,809</b>
NONFOREST LAND SURVEY TYPES 2 AND 3	110,996	1,235	225	605	380	230	15		113,686
<b>TOTAL</b>	<b>387,210</b>	<b>58,610</b>	<b>725</b>	<b>17,995</b>	<b>660</b>	<b>1,800</b>	<b>175</b>	<b>320</b>	<b>467,495</b>

FOREST STATISTICS FOR THURSTON COUNTY, WASHINGTON  
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 SEPTEMBER 1, 1939

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, SMALL SECOND GROWTH	
10	GOOD	3,715				3,715
	MEDIUM	18,537	90			18,627
	POOR	22,453	45			22,498
	TOTAL	44,705	135			44,840
20	GOOD	7,321	79	79		7,479
	MEDIUM	24,326	370	408		25,104
	POOR	13,260	50	85		13,395
	TOTAL	44,907	499	572		45,978
30	GOOD			8,364		8,364
	MEDIUM			15,172		15,172
	POOR			3,714	55	3,769
	TOTAL			27,250	55	27,305
40	GOOD			8,223		8,223
	MEDIUM			13,492		13,492
	POOR			3,337		3,337
	TOTAL			25,052		25,052
50	GOOD			1,840		1,840
	MEDIUM			8,328	35	8,363
	POOR			5,510	66	5,576
	TOTAL			15,678	101	15,779
60	GOOD			820		820
	MEDIUM			2,690		2,690
	POOR			2,451	79	2,530
	TOTAL			5,961	79	6,040
70	GOOD					
	MEDIUM			1,218		1,218
	POOR			1,894		1,894
	TOTAL			3,112		3,112
80	GOOD			3,490		3,490
	MEDIUM			130		130
	POOR			397		397
	TOTAL			4,017		4,017
TOTAL	GOOD	11,036	79	22,816		33,931
ALL	MEDIUM	42,863	460	41,438	35	84,796
AGES	POOR	35,713	95	17,388	200	53,396
	TOTAL	89,612	634	81,642	235	172,123



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

TABLE 4. LAND AREA, FOREST LAND AREA, AND COMMERCIAL CONIFER AREAS,  
BY SITE QUALITY CLASS<sup>1/</sup>  
DATA CORRECTED TO SEPTEMBER 1, 1939

KIND OF FOREST AND SITE	TOTAL AREA		AREA IN	AREA IN
	ACRES	PERCENT	FOREST LAND	COMMERCIAL CONIFERS
COMMERCIAL CONIFER				
DOUGLAS FIR				
CLASS II	62,884	13.4	17.8	18.8
CLASS III	215,087	46.1	60.8	64.4
CLASS IV	54,522	11.6	15.4	16.3
CLASS V	1,673	0.4	0.5	0.5
TOTAL COMMERCIAL CONIFER	334,166	71.5	94.5	100.0
LOGEPOLE PINE	580	0.1	0.2	
NONCOMMERCIAL ROCKY	50	0.1	0.1	
OAK-MADRONE	325			
HARDWOOD	18,688	4.0	5.2	
TOTAL OTHER THAN COMMERCIAL CONIFER	19,643	4.2	5.5	
ALL FOREST TYPES	353,809	75.7	100.0	
NONFOREST TYPES	113,686	24.3		
GRAND TOTAL	467,495	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 THURSTON COUNTY, WASHINGTON  
FROM INVENTORY PHASE OF FOREST SURVEY

TABLE 5. VOLUME OF TIMBER BY SPECIES AND OWNERSHIP CLASS  
DATA CORRECTED TO SEPTEMBER 1, 1939

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

SUR- VEY SYM- BOL :	SPECIES <sup>2/</sup>	STATE			COUNTY	FEDERAL			TOTAL
		PRIVATE	AVAILABLE FOR CUTTING	RESERVED FROM CUTTING		INDIAN, TRIBAL AND TRUST ALLOTMENTS:	NATIONAL FOREST, AVAILABLE FOR CUTTING:		
DA :	LARGE OLD-GROWTH DOUGLAS FIR	503,494	59,115		1,719	242	51		564,621
DB :	SMALL OLD-GROWTH DOUGLAS FIR	243,866	37,062		1,627	103			282,658
DC :	LARGE SECOND-GROWTH DOUGLAS FIR	239,123	17,656	483	2,220		121	4,904	264,507
DD :	SMALL SECOND-GROWTH DOUGLAS FIR	113,565	12,703	174	819	54	23	158	127,496
SA :	LARGE SITKA SPRUCE	1,175							1,175
HA :	LARGE WESTERN HEMLOCK	17,414	534						17,948
HB :	SMALL WESTERN HEMLOCK	11,623	356						11,979
C :	WESTERN RED CEDAR, LIVE	62,983	4,973		342				68,298
KC :	WESTERN RED CEDAR, DEAD	8,382							8,382
WF :	LOWLAND WHITE FIR	3,331	144						3,475
NF :	NOBLE FIR	558							558
RA :	RED ALDER	12,006	1,709	30	280	352	3		14,380
OM :	BIGLEAF MAPLE	5,153	695		28	244	5		6,125
BC :	BLACK COTTONWOOD	2,880	195		48	131	1		3,255
ASH :	OREGON ASH	2,167	88		30				2,285
TOTAL		1,227,720	135,230	687	7,113	1,126	204	5,062	1,377,142

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

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