United States
Department of
Agriculture

Forest Service

Pacific Northwest
Forest and Range
Experiment Station

Resource Bulletin
PNW-117

October 1984

Timber Resource Statistics for the Ketchikan Inventory Unit, Alaska, 1974

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Abstract

van Hees, Willem W. S. Timber resource statistics for the Ketchikan inventory unit, Alaska, 1974. Resour. Bull. PNW-117. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station; 1984. 33 p.

Statistics on forest area, total gross and net timber volumes, and annual net growth and mortality are presented from the 1974 timber inventory of the Ketchikan.unit, Alaska. Timberland area is estimated at 1.16 million acres (470 040 ha), net growing stock volume at 6.39 billion cubic feet (181.04 million m^3), and annual net growth and mortality at -33.12 million cubic feet and 55.56 million cubic feet (-0.94 and 1.57 million m^3), respectively.

Keywords: Forest surveys, timber resources, timber inventory resources (forest), statistics (forest), Alaska (southeast), southeast Alaska.

Summary

This report for the 3.304-million-acre (1.337-million-ha) Ketchikan timber inventory unit is the fifth in a series of six reports for southeast Alaska. The Ketchikan unit is at the southern end of the southeast Alaska panhandle and stretches from near Bradfield Canal at the northern end to Dixon Entrance and the Canadian border on the southern end. It is bounded on the west by Clarence Strait and on the east by the Canadian border. Except for cities, towns, private inholdings, and public land withdrawals, the unit is entirely within the Tongass National Forest.

This is the first general reinventory of the forests in the Ketchikan unit, which were first inventoried in 1957. It is also the second remeasurement of the growth and mortality plots established in 1957; they were also remeasured in 1968.

Statistics on forest area, total gross and net timber volumes, and annual net growth and mortality are presented from the 1974 timber resources inventory of the Ketchikan unit. Timberland area is estimated at 1.16 million acres (470 040 ha), net growing stock volume at 6.39 billion cubic feet (181.04 million m^3), and net annual growth and mortality at -33.12 and 55.56 million cubic feet (-0.94 and 1.57 million m^3), respectively.

Preface

Forest Inventory and Analysis (formerly Forest Survey) is a nationwide project of the USDA Forest Service authorized by the Forest and Rangeland Renewable Resources Research Act of 1978. Work units of the project, located at Forest Service Experiment Stations, conduct forest resource inventories throughout the SO States. The Pacific Northwest Forest and Range Experiment Station at Portland, Oregon, is responsible for inventories in Alaska, California, Hawaii, Oregon, and Washington.

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Highlights

	Thousand acres	*Thousand hectares*
Total Ketchikan inventory unit area:	3,304.83	1 337.42
With forests	2,214.27	896.08
With nonforest	1,070.33	433.15
With non-Census water	20.23	8.19
With Census water	1/	1/
Forested area:		
Timberland	1,161.50	470.04
Other forest land	1,052.77	426.04
Timberland composition:		
Old-growth sawtimber	1,106.51	447.79
Young-growth sawtimber	20.13	8.15
Poletimber	7.53	3.05
Seedlings and saplings, and nonstocked	27.33	11.06
Timberland forest type composition:		
Pacific silver fir	6.78	2.74
Sitka spruce	51.89	21.00
Hemlock-spruce	91.14	36.88
Western redcedar	149.01	60.30
Western hemlock	582.73	235.82
Mountain hemlock	173.31	70.14
Alaska-cedar	94.90	38.40
Lodgepole pine	1/	1/
Other softwoods	1/	1/
Red alder	0.69	0.28
Black Cottonwood	11.04	4.47
Other hardwoods	1/	1/

1/ No data were collected.

	All Growing Stock		Sawtimber Growing Stock	
	Million cubic feet 2/	Million cubic meters 2/	Million board feet 3/	Million cubic meters 4/
Volumes on timberland:				
Total gross volume	7,163.23	202.84	37,695.41	188.81
Total net volume	6,393.43	181.04	27,675.15	163.87
Annual net growth	-33.12	-.94	-180.19	-.96
Annual net mortality	55.56	1.57	253.80	1.32

2/ Volume of roundwood for live trees 5.0 inches (12.7 cm) in d.b.h. and larger.

3/ Net volume, International 1/4-inch rule, for trees 11.0 inches (28 cm) in d.b.h. and larger.

4/ Volume of roundwood for trees 11.0 inches (28 cm) in d.b.h. and larger.

Introduction

This report for the 3.304-million-acre (1.337-million-ha) Ketchikan timber inventory unit is the fifth in a series of six reports for southeast Alaska. The Ketchikan inventory unit is between 54°45' and 56°30' north latitude and 130°00' and 132°00' west longitude in the panhandle of southeast Alaska (fig. 1). Except for cities, towns, private inholdings, and public land withdrawals, the unit is entirely within the Tongass National Forest.

Although the city of Ketchikan has an elevation of only 15 feet (4.6 m) above sea level, the unit itself is mostly mountainous. The Ketchikan unit has a cool maritime climate. Summer temperatures range from 48 °F to 66 "F (8.9 "C to 18.9 °C) and winter temperatures vary between 30 °F and 42 °F (-1.1 °C to 6.1 °C). Annual precipitation is approximately 150 inches (381 cm), which includes about 30 inches (76 cm) of snow.

Most of the unit lies in a geological classification known as coastal foothills. These hills are composed of slate, phyllite, quartzite, and schist with interlayered beds of marble and gneiss. Other areas in the unit contain intrusive granitic rocks.

The geology creates two general soil types. On mountain tops and slopes above timberline there are gravelly soils that support little or no vegetation. Below these elevations soils also tend to be gravelly but begin to include silt and loam; they usually develop over shallow bedrock with rock outcroppings.

This is the first general reinventory of the forests in the Ketchikan unit, which were first inventoried in 1957. It is also the second remeasurement of the growth and mortality plots established in 1957; they were also remeasured in 1968.

Statistics on forest area, total gross and net timber volumes, and annual net growth and mortality are presented from the 1974 timber resources inventory of the Ketchikan unit. Timberland area is estimated at 1.16 million acres (470 040 ha), net growing stock volume at 6.39 billion cubic feet (181.04 million m^3), and net annual growth and mortality at -33.12 and 55.56 million cubic feet (-0.94 and 1.57 million m^3), respectively.

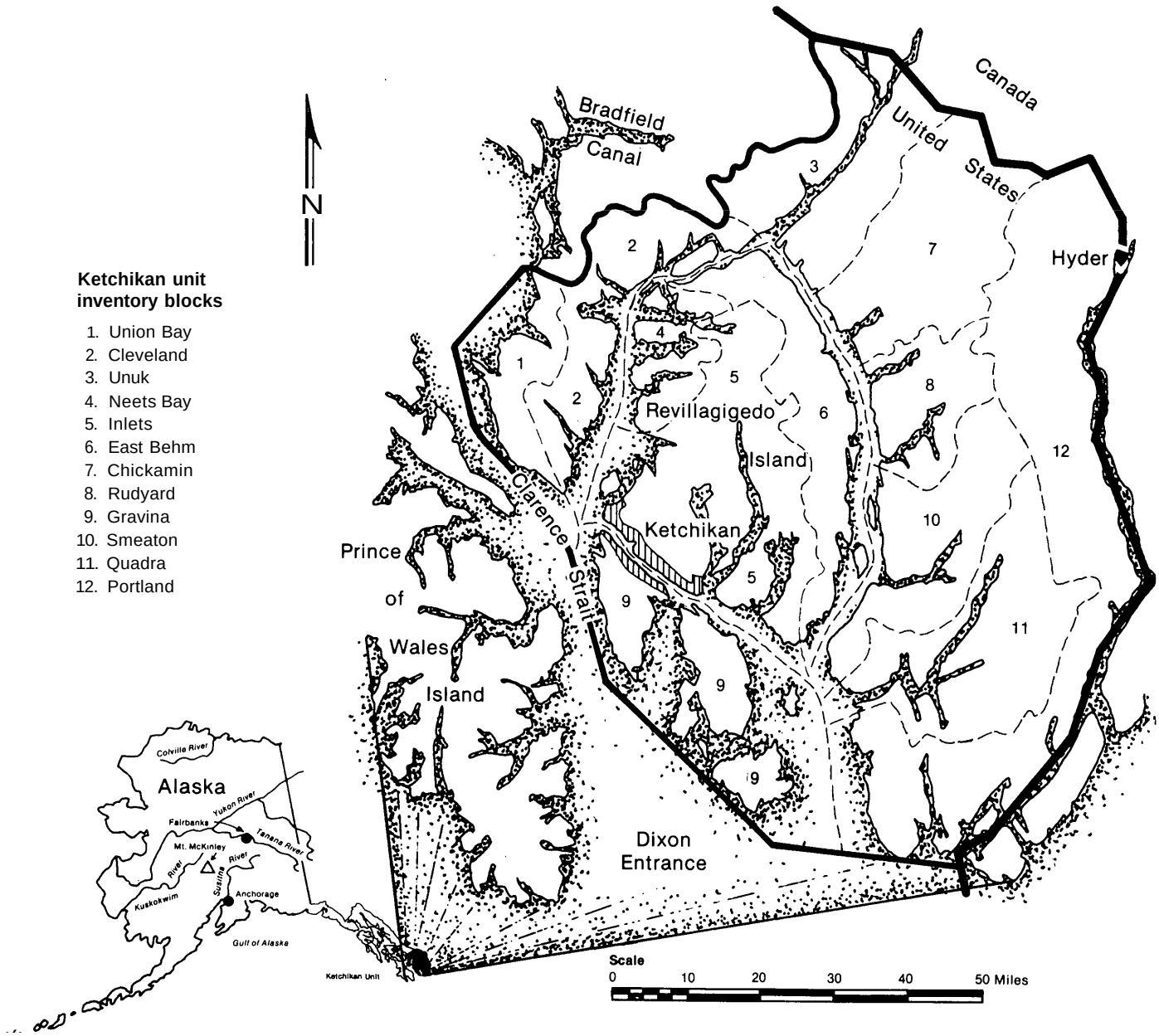

Figure 1.--Ketchikan inventory unit.

Inventory Procedures

The estimates of area and timber volumes from the 1974 timber reinventory are based on a double sampling (2-phase) technique (Bickford 1952). In the first sampling phase, 15,867 photo points were systematically distributed over 1:15,840 scale aerial photographs, then interpreted. Each photo point was classified by land type. From the 15,867 photo points, a field sample of 203 ground plots was selected. Tree measurements were made on these plots in the second sampling phase. Corrected area classifications and measurements of volume on these ground plots served as the basis for the area and volume estimates presented in this report.

Estimates of growth and mortality volumes presented are from 1974 remeasurements of 78 timber inve'ntory plots established in 1957. Growth information from the reinventory plots was based on increment borings; the mortality estimates were based on estimations of the number of years since the trees died. Because mortality information is difficult to obtain this way, we used both the mortality and growth information from the remeasurement data rather than that from the reinventory data. The area base for the 1974 estimates of growth and mortality was calibrated to coincide with the area found in the 1974 timber reinventory.

Ownership Statistics

Statistics on land ownership are not presented in this report because of uncertainties of land status changes associated with Alaska Native and State of Alaska land selections and wilderness area withdrawals. These changes in land status are the result of Federal legislation: the Alaska Statehood Act of 1958, Public Law 85-508; the Alaska Native Claims Settlement Act of 1971, Public Law 92-203; and the Alaska National Interest Lands Conservation Act, Public Law 96-487. Alaska Native land selections and decisions on wilderness withdrawals seemed nearly settled as of 1982, but Alaska State selections will remain uncertain for the next 5-10 years. Fieldwork for our study was completed in 1974; we have delayed publishing the results, anticipating that shifts in land ownership would be resolved by now and the information on ownership could be reprocessed and resummarized for inclusion here.

With the promise of further delays in resolving ownership changes, we decided to release the statistics available now. Statistics on ownership and reserved land status plus a resource analysis will be presented in the future when the status of land shifts is clearer. It is clear now, however, that the Alaska Native and State of Alaska land selections are concentrating more on timberlands, which will: leave a reduced' proportion of the better timberland in Federal ownership.

Timber Harvesting

A summary of timber volumes cut in the Ketchikan area of the Tongass National Forest are provided in table 24. This area coincides with the inventory boundaries used by Forest Inventory and Analysis (FIA); the volume-cut figures provide an estimate of the amount of logging activity occurring in the area from shortly after the 1974 inventory through 1980.

Reliability of Inventory Data

All area and volume statistics reported here are estimates based on sampling and are subject to sampling error. Sampling errors for all the estimates presented in the tables are available on request. The reliability of the inventory is expressed in terms of relative sampling error at the 68-percent confidence level.

	Design sampling error	Sampling error achieved	Sampling error of the total estimate
		Percent	
Timberland'area:			
Per million acres	3.0	2.8	
For the total 1.16 million acres			2.6
Other forest land area:			
Per million acres	10.0	5.7	
For the total 1.05 million acres			5.6
Net growing stock volume on timberland:			
Per billion cubic feet	10.0	10.6	
For the total 6.39 billion ft3			*4.2*
Net growth of growing stock on timberland:			
Per billion cubic feet	10.0	1.7	
For the total 47.62 million ft3			7.9

For the Ketchikan inventory unit, we estimate 6.393 billion cubic feet of net growing-stock volume, ± 10.6 percent, yielding 68-percent confidence limits of 5.715 and 7.071 billion cubic feet. A 68-percent confidence level means that upon repeated sampling, about 68 percent of the confidence intervals constructed for each sample would capture the true value of the parameter being estimated.

Terminology 5/

Allowable cut--The volume of timber that could be cut on timberland during a given period under specified management plans for sustained production, such as those in effect on National Forests.

Census water--Areas of water classed as water by the Bureau of the Censua that are at least 40 acres (16 ha) in size with a minimum width of one-eighth mile (200 m). (Also see non-Census water.)

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

Commercial species--A tree species' suitable for industrial wood products.

Cull logs--Softwood sawtimber logs with two-thirds or more of the board-foot volume in cull material. Hardwood sawtimber logs with one-half or more of the volume in cull material.

Cull material--Portions of a tree unusable for industrial products because of rot, form, or other defect.

Cull trees--Live trees of sawtimber or poletimber size that are not merchantable for saw logs nor are they likely to become merchantable because of defect, rot, or species.

D.b.h.--Diameter at breast height, a point 4-112 feet (1.37 m) above the ground on the uphill side of a tree, where, on a normally formed tree, the diameter is measured.

Diameter class--A classification of trees based on diameter of the tree outside the bark measured at breast height, 4-112 feet (1.37 m) above the ground. D.b.h. is the common abbreviation for "diameter at breast height." Each 2-inch diameter class is assigned to the appropriate even inch at midpoint. For example, the 6-inch class includes trees 5.0 through 6.9 inches d.b.h.

Established seedling--A tree 6.0 inches (15.24 cm) tall, up to 1.0 inch (2.54 cm) in diameter, with good coloration, no evidence of disease, and with a root system preferably in contact with the mineral soil. For seedlings growing on stumps or logs to be tallied, they must be well enough established to survive after the supporting material has decayed.

5/ Terminology from USDA Forest Service, Forest Service Handbook, Title 4813.1, 1967, and the manual of field instructions for the forest survey of coastal Alaska, 1970.

Forest land--Land at least 16.7 percent stocked by live trees of any size, or land formerly having such tree cover and not currently developed for nonforest use. Includes chaparral areas in the western United States and afforested areas. The minimum area for classification as forest land or subclasses of forest land is 1 acre (0.4 ha). Roadside, streamside, and shelterbelt strips of timber must be at least 120 feet (36 m) wide to be classified as forest land. Unimproved roads and trails, streams, and clearings in forest areas must be less than 120 feet wide to be classified as forest land. (Also see timberland, other forest land, reserved forest land, and nonforest land.)

Forest trees--Woody plants having a well-developed stem and usually more than 12 feet tall, including both growing stock and cull trees.

Forest types--A classification of forest land based on the species forming a plurality of stocking on the area currently occupied by tree cover. The following summarizes the forest types of coastal Alaska:

Alaska-cedar--Forests in which Alaska-cedar comprises the plurality of the stocking. Common associates are mountain or western hemlock, lodgepole pine, western redcedar, and occasionally Sitka spruce.

Black cottonwood--Forests in which cottonwood comprises the plurality of the stocking. Common associates in southeast Alaska are red alder and Sitka spruce.

Fir-spruce--Forests in which subalpine or Pacific silver fir in combination with Sitka spruce comprises the plurality of the stocking. Common associates are black cottonwood, mountain hemlock, and western hemlock.

Hemlock-spruce--Forests in which 50 percent or more of the stand is western hemlock or mountain hemlock and where Sitka spruce comprises 30-49 percent of the stocking. Common associates are Alaska-cedar, western redcedar, and occasionally cottonwood, red alder, or lodgepole pine.

Lodgepole *pine*--Forests in which lodgepole pine comprises the plurality of the stocking. Common associates are mountain hemlock, Alaska-cedar, and western hemlock.

Mountain hemlock--Forests in which mountain hemlock comprises the plurality of the stocking. Common associates are western hemlock and Alaska-cedar.

Other hardwoods--Forests in which noncommercial hardwoods, such as willow and alder other than red alder, comprise the plurality of the stocking. Common associates are black cottonwood and Sitka spruce.

Other softwoods--Forests in which noncommercial softwoods, such as Pacific yew, and junipers comprise the plurality of the stocking. Common associates are Alaska-cedar and mountain hemlock.

Pacific silver fir--Forests in which Pacific silver fir comprises the plurality of the stocking. Common associates are black cottonwood, Sitka spruce, mountain hemlock, and western hemlock.

Red alder--Forests in which red alder comprises the plurality of the stocking. Common associates are black cottonwood, Sitka spruce, western hemlock, and occasionally western redcedar and/or Alaska-cedar.

Sftka spruce--Forests in which Sitka spruce comprises the plurality of the stocking. Common associates are western hemlock, western redcedar, and occasionally cottonwood, red alder, and Alaska-cedar.

Subalpine ffr--Forests in which subalpine fir comprises the plurality of the stocking. Common associates are black cottonwood, Sitka spruce, mountain hemlock, and western hemlock.

True fir--Forests in which Pacific silver and subalpine fir comprise the plurality of the stocking. Common associates are black cottonwood, Sitka spruce, mountain hemlock, and western hemlock.

Western hemlock--Forests in which western hemlock comprises the plurality of the stocking. Common associates are Sitka spruce, Alaska-cedar, western redcedar, mountain hemlock, and occasionally cottonwood, red alder, or lodgepole pine.

Western redcedar--Forests in which western redcedar comprises the plurality of the stocking. Common associates are Sitka spruce, western hemlock, Alaska-cedar, and occasionally cottonwood, red alder, and mountain hemlock.

Gross growth--Net annual growth plus the annual growth on mortality.

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

Growing stock volume--Net volume in cubic feet of live sawtimber and poletimber growing stock trees from stump to a minimum 4.0-inch (10 cm) top (of central stem) outside the bark. Net volume equals gross volume less deductions for rot and missing bole sections.

Growth--See net annual growth, gross growth, and ingrowth.

Hardwoods-41) Trees that are angiosperms, usually broad-leaved and often deciduous. (2) Forests predominantly cottonwood or red alder, singly or in combination.

Ingrowth--The net volume of trees that grew into poletimber or sawtimber growing stock during a specified year.

Inoperable timberland--Includes areas of timberland that are presently inoperable because of marginal volume (usually less than 20,000 board feet per acre) or rough, rocky, cliffy, or otherwise broken terrain. This also includes pockets of high volume timberland that are isolated or more than one-fourth mile (396 m) from operable timberland areas. (Also see operable timberland.)

International 1/4-inch rule--The standard board-foot log rule adopted nationally by the USDA Forest Service for the presentation of inventory volume statistics.

Land area--Area reported as land by the Bureau of the Census. Total land area includes dry land and land temporarily or partially covered by water such as marshes, swamps, and river flood plains (omitting tidal flats below mean high tide); streams, sloughs, estuaries, and canals less than one-eighth mile (200 m) wide; and lakes, reservoirs, and ponds less than 40 acres (16 ha) in area. (Also see non-Census water.)

Land class--A classification of land by major use, such as timberland, other forest, and nonforest. The minimum size area for classification is 1 acre (0.4 ha).

Log grades--A classification of logs based on external characteristics as indicators of quality or value.

Management blocks--Units delineated for timber management by the National Forest System of the USDA Forest Service, usually oriented to islands and/or watershed complexes.

Mean annual increment (MAI)--A measure of the productivity of forest land in terms of the average increase in cubic-foot volume per acre per year. The FIA minimum standard for timberland is the ability to produce 20 cubic feet per acre (1.4 m^3/ha) per year.

Merchantable height--Height of a tree expressed in the number of 16-foot (5-m) logs to a merchantable top.

Merchantable saw log--For softwood sawtimber, a merchantable saw log must be at least 12 feet (3.6 m) long to a minimum top of 7.0 inches (18 cm) outside the bark or to a top diameter inside the bark that is 40 percent of d.b.h. At least one-third of its board-foot volume must be in sound, recoverable wood. For hardwood sawtimber, a merchantable saw log must be at least 8 feet (2.5 m) long to a minimum top of 9.0 inches (23 cm) outside the bark or to a top diameter inside the bark that is 40 percent of d.b.h. At least half its board-foot volume must be in sound, recoverable wood.

Herchantable stem--For softwoods, the portion of the tree between the 1-foot (0.3-m) stump and either the top diameter of 7.0 inches (18 cm) outside the bark or to a top diameter inside the bark that is 40 percent of d.b.h., whichever is larger. For hardwoods, the portion of the tree between the 1-foot stump and either the top diameter of 9.0 inches (23 cm) outside the bark or to a top diameter inside the bark that is 40 percent of d.b.h., whichever is larger.

Herchantable top--The point on the bole of sawtimber trees above which a saw log cannot be produced. The minimum merchantable top is 7.0 inches (18 cm) outside the bark for softwoods, and 9.0 inches (23 cm) outside the bark for hardwoods.

Merchantable tree--A merchantable tree must be producing or be capable of producing at least one merchantable saw log that is at least SO-percent sound for hardwoods or 33-percent sound for softwoods, board-foot measure. All poletimber that is less than SO-percent sound, cubic-foot measure, and all saplings with any sign of rot are not considered merchantable trees, but rotten culls. All trees that are of such poor form that they will never produce a merchantable saw log are not classed as merchantable trees, but as sound culls or rough trees.

Mortality--The number of or the sound wood volume from live trees dying from natural causes during a specified period.

Mortality of growing stock--The volume of sound wood in live sawtimber and poletimber trees dying annually from natural causes during a specified period.

Mortality of sawtimber--The net board-foot volume of sawtimber trees dying annually from natural causes during a specified period.

Mortality tree--On plots being measured for the first time, a tree of commercial species at least 1 inch (2.54 cm) in d.b.h. or larger that has died within the past 5 years; on plots being remeasured, a tree of commercial species at least 1 inch in d.b.h. that has died since the previous measurement was made.

Net annual growth--The increase in net volume of wood for growing stock trees during a specified year. Components of net annual growth are: (a) the increment in net volume of trees alive at the beginning of the specified year, including that on periodic mortality, plus (b) the net volume of trees reaching sawtimber or poletimber size during the year, minus (c) the net volume of trees that died during the year, minus (d) the net volume lost to tree decay during the year.

Net volume--The gross volume of a tree less deductions for rot, sweep, or other defect affecting product use.

Non-Census water--Streams, sloughs, estuaries, and canals between 120 feet (36 m) and one-eighth mile (200 m) wide; and lakes, reservoirs, and ponds between 1 and 40 acres (0.4 and 16 ha) in area. (Also see Census water.)

Noncommercial species--Tree species of typically small size, poor form, or inferior quality that normally is not suitable for industrial products.

Nonforest land--Land that does not qualify as forest land. Includes land that has never supported forests and lands formerly forested where forest use is precluded by development for nonforest uses. Included are lands used for agricultural crops, improved pasture, residential areas, city parks, improved roads, operating railroads and their right-of-way clearings, and pipeline clearings. If intermingled in forest areas, unimproved roads, streams, canals, and nonforest strips must be more than 120 feet (36 m) wide, and clearings or other areas must be 1 acre (0.4 ha) or larger to qualify as nonforest land.

Nonstocked land--Timberland less than 16.7 percent stocked with growing stock trees.

Old-growth stands--Stands with at least 50 percent of the live-tree stocking per acre comprised of old-growth trees.

Old-growth trees--Trees that have reached or passed the age of physiological maturity, assumed to be 150 years for coastal Alaska.

Operable timberland--All timberland considered silviculturally and economically operable. This includes areas on stable soils, on slopes that are not too steep to log without causing serious site damage, and stands valuable enough to pay the logging costs using the methods and costs in effect at the time of the inventory. Stands that require new, undeveloped logging methods are not in the operable class.

Other forest land--Unproductive forest land incapable of yielding crops of industrial wood because of adverse site conditions. This includes sterile or poorly drained forest land, subalpine forests, and steep rocky areas where topographic conditions are likely to prevent management for timber production indefinitely. In coastal Alaska, this includes forest lands that are not capable of producing 8,000 board feet per acre (net International 1/4-inch rule).

Poletimber stands--Stands at least 16.7 percent stocked with growing stock trees, with half or more of this stocking in poletimber and sawtimber trees, and with poletimber stocking exceeding that of sawtimber.

Poletimber trees--Growing stock trees 5.0 to 10.9 inches (12.5 to 27.5 cm) in d.b.h.

Quality saw log--See merchantable saw log.

Reserved forest land--Forest land withdrawn from timber utilization through statute or administrative regulation.

Rotten trees--Live trees at least 5.0 inches (12.7 cm) in d.b.h. that do not contain a saw log and are not likely to, primarily because of rot.

Rotten cull trees--Live trees that do not contain a merchantable saw log and are not likely to, primarily because of rot.

Rough trees--Live trees that do not contain a merchantable saw log and are not likely to, primarily because of roughness, poor form, or they are noncommercial species.

Salvable dead trees--Standing or down dead trees of commercial species at least 11.0 inches (28 cm) in d.b.h., containing at least 50 percent of their volume in sound wood, and with at least one merchantable saw log.

Sapling stands--See seedling and sapling stands.

Sapling trees--Trees 1.0 to 4.9 inches (2.5 to 12.5 cm) in d.b.h.

Saw log--A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet (2.5 m) long, sound and straight, and with a minimum small-end diameter of 6.0 inches (15 cm) inside the bark for softwoods and 8.0 inches (20 cm) for hardwoods.

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

Saw-log top--The point on the bole of sawtimber trees above which a saw log cannot be produced. The minimum top diameter is 7.0 inches (18 cm) outside the bark for softwoods and 9.0 inches (23 cm) inches outside the bark for hardwoods.

Sawtimber stands--Stands at least 16.7 percent stocked with growing stock trees, with half or more of this stocking in sawtimber or poletimber trees, and with sawtimber stocking at least equal to that of poletimber.

Sawtimber trees--Growing stock trees at least 11.0 inches (28 cm) in d.b.h.

Sawtimber volume--Net volume of sawtimber trees measured in board feet. Net volume equals gross volume less deduction for rot, sweep, crook, and other defects that affect use for lumber.

Scribner, bureau scale--A common timber scaling rule using 32-foot log lengths.

Scribner rule--The common board-foot timber scaling rule used locally in determining volume of sawtimber.

Seedling and sapling stands--Stands at least 16.7 percent stocked with growing stock trees and with saplings and/or seedlings comprising more than half this stocking.

Seedling--An established tree less than 1.0 inch (2.5 cm) in d.b.h.

Site class--A classification of forest land based on its capacity to grow crops of industrial wood.

Softwoods--Coniferous trees, usually evergreen with needles or scalelike leaves. Species in coastal Alaska are Sitka spruce, western hemlock, mountain hemlock, Alaska-cedar, western red-cedar, lodgepole pine, Pacific silver fir, subalpine fir, and Pacific yew.

Sound cull tree--See rough tree.

Stand age class--A classification of forest land based on the predominant age of trees in a given stand.

Stand size class--A classification of forest land based on the predominant size of timber present: sawtimber, poletimber, or seedlings and saplings.

Stocking--A measure of the area occupied by trees of specified classes. FIA forest inventories consider three categories of stocking: all live trees, growing stock trees, and desirable trees.. Stocking of all live trees is used to delineate forest land and forest types. Stocking of growing stock trees is used in classifications of stand size and stand age. Stocking of desirable trees is used to delineate area condition classes.

Stump height--For all timber volume estimates, 1 foot (0.3 m).

Timber harvest--Volume of roundwood removed from forest land for products.

Timberland--Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. Areas qualifying as timberland could produce in excess of 20 cubic feet per acre (1.4 m^3/ha) per year of industrial wood under management. In old-growth forests of coastal Alaska, this is equated to stands that could produce 8,000 board feet per acre (net International 1/4-inch rule).

Tree size class--A classification of sawtimber trees, poletimber trees, saplings, and seedlings based on the diameter at breast height.

Upper-stem portion--The bole of sawtimber trees above the saw-log top--7.0 inches (18 cm) outside the bark for softwoods and 9.0 inches (23 cm) outside the bark for hardwoods--to a minimum top diameter of 4.0 inches (10-cm) outside the bark, or to the point where the central stem breaks into limbs.

Volume of growing stock--Volume of sound wood in the bole of live growing stock sawtimber and poletimber trees from stump to a minimum 4.0-inch (10-cm) top outside the bark or to the point where the central stem breaks into limbs.

Volume of salvable dead sawtimber-sized trees--Net volume of standing or down, dead, sawtimber-sized trees that contain SO-percent sound.board-foot volume.

Volume of sawtimber-,-Net volume of the saw-log portion of live growing stock sawtimber trees expressed in board feet.

Water — See Census water and non-Census water.

Young-growth stands--Stands with at least 50 percent of the live-tree stocking per acre comprised of young-growth trees.

Young-growth trees--Trees that have not passed the age of physiological maturity, assumed to be 150 years for coastal Alaska.

Names of Trees 6/

Common name	Scientific name
Softwoods:	
Alaska-cedar	*Chamaecyparis nootkatensis* (D. Don) Spach
Fir, Pacific silver	*Abies amabilis* (Dougl.) Forbes
Fir, subalpine	*A. lasiocarpa* (Hook.) Nutt.
Hemlock, mountain	*Tsuga mertensfana* (Bong.) Carr.
Hemlock, western	*T. heterophylla* (Raf.) Sarg.
Pine, lodgepole	*Pfnus contorta* Dougl.
Redcedar, western	*Thuja plicata* Donn
Spruce, Sitka	*Picea sitchensfs* (Bong.) Carr.
Yew, Pacific	*Taxus brevifolia* Nutt.
Hardwoods:	
Alder, red	*Alnus rubra* Bong.
Cottonwood, black	*Populus trfchocarpa* Torr. *h* Gray
Willow, Barclay	*Salix barclayf* Anderss.
Willow, Bebb	S. *bebbfana* Sarg.
Willow, feltleaf	S. *alaxensis* (Anderss.) Cov.
Willow, grayleaf	*S. glauca* L.
Willow, hooker	*S. hookeriana* Barratt
Willow, Sitka	S. *sitchensis* Sanson
willow, Pacific	S. *lasiandra* Benth.

6/ Scientific names are according to Viereck and Little (1972).

Tables

Estimates in this report are developed from statistically based samples and therefore are subject to sampling error. Sampling errors for estimates of various sizes are presented in the section "Reliability of Inventory Data."

TABLE 1--AREA OF FOREST LAND BY FOREST TYPE AND FOREST LAND CLASS, KETCHIW UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

FOREST TYPE	TIMBERLAND	OTHER FOREST	ALL CLASSES
		THOUSAND ACRES	
SOFTWOODS:			
PACIFIC SILVER FIR	6.78	--	6.78
ALASKA-CEDAR	94.90	246.14	341.04
HEMLOCK-SPRUCE	91.14	82.09	173.23
SITKA SPRUCE	51.89	--	51.89
WESTERN REDCEDAR	149.01	88.48	237.49
MOUNTAIN HEMLOCK	173.31	2'46.20	419.51
WESTERN HEHLOCK	582.73	328.29	911.02
LODGEPOLE PINE	--	61.57	61.57
OTHER SOFTWOODS			--
TOTAL	1,149.77	1,052.77	2,202.54
HARDWOODS:			
RED ALDER	.69	--	.69
BLACK COTTONWOOD	11.04	--	11.04
OTHER HARDWOODS	--	--	--
TOTAL	11.73	--	11.73
ALL TYPES	1,161.50	1,052.77	2,214.27

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 2--AREA BY LAND CLASS AND MANAGEMENT BLOCK. KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA. 1914 1/

LAND CLASS	UNION BAY	CLEVELAND	UNUK	NEETS BAY	INLETS	EAST BEHM	CHICKAMIN	RUDYARD	GRAVINA	SWEATON	QUADRA	PORTLAND	ALL CLASSES
						ACRES							
TIMBERLAND:													
SEEDLING AND SAPLING, AND NONSTOCKED	--	3,764	--	16,102	6,066	--	698	--	--	--	--	698	27,328
POLETIMBER	--	--	--	--	--	--	--	--	--	--	--	7,528	7,528
SAWTIMBER VOLUME STRATA 2/--													
8,000-20,000	60,960	81,321	40,653	20,315	101,591	20,269	13,558	20,315	54,188	54,031	33,935	108,606	609.747
20,001-30,000	13,355	20,269	27,156	13,513	60,673	20,269	--	13,355	6,119	13,152	54,165	20,292	262.979
30,001-50,000	6,779	6,756	26,688	13,513	62,319	6,756	15,228	6,516	13,333	13,333	20,112	20,112	211,505
50.001 OR UORE	6,156	--	--	--	1,872	13,513	--	--	--	20,269	--	--	42,411
TOTAL	87,850	112,110	94,497	63,443	232,527	60,807	29,484	40,246	74,300	100,785	108,212	157,236	1,161,498
OTHER FOREST LAND:													
ROCKY	--	6,841	--	--	--	--	6,841	6,841	--	6,841	6,841	20,522	54,126
LOW VOLUME 3/	27,363	34,058	6,841	6,119	20.522	13,558	6,841	21.363	21,301	21,240	20.461	88,868	307,194
MUSKEG FOREST	20.522	20,522	--	13,620	41,044	21,363	6.841	6,841	54,126	20,522	6,841	54,726	273,561
HIGH ELEVATION FOREST	6,841	13.681	34,204	20.522	116,292	34,204	20.522	21,363	6,841	13,681	41,044	61,566	396,761
SLIDE ZONE	--	--	--	--	--	6,841	--	--	--	--	--	13,681	20,522
OTHER NONPRODUCTIVE	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	54.126	15,102	41,045	40,921	111,858	81,966	41,045	68,408	88,868	68.284	15.187	239,363	1,052,110
NONFOREST:													
FARMS AND GRASSLANDS	--	--	--	--	--	--	--	--	--	--	--	--	--
ALDER SHRUBLAND	--	--	20,195	--	6,732	--	20,195	20,195	--	--	--	13,463	80,780
NOW-ALDER SHRUBLAND	--	6,732	40,390	--	13,463	13,463	67.311	20,195	--	33,658	26,927	80,780	302,924
ALPINE MEADOW	--	6,732	--	6,732	13,463	--	6,732	20,195	--	--	13,463	13,463	80,780
HUSKEG MEADOW	6,732	--	--	--	--	6,732	--	--	--	--	--	--	13,463
URBAN AND OTHER	--	--	--	--	--	--	--	--	--	--	--	--	--
ALPINE ROCK	--	--	67,317	--	13,463	26,927	141,365	20.195	--	20.195	40,390	121,170	451,021
ICE AND SNOWFIELDS	--	--	26,927	--	--	--	61,317	--	--	--	--	47,122	141,365
TOTAL	6,732	13,464	154,829	6,732	47,121	47,122	302,926	80,780	--	53,853	80,780	275,998	1,070,333
NON-CENSUS WATER 4/	--	--	--	--	6,743	--	--	6,743	--	--	6,743	--	20,230
ALL LANDS	149,309	200,675	290,368	111,095	464,251	189,894	373.453	196,177	163,168	222,922	270,921	672,597	3,304,830

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Board feet Scribner scale, except base value of 8,000 board feet, which is International 1/4-inch rule.

3/ Less than 8,000 board feet per acre, International 1/4-inch rule.

4/ Water as classified by Forest Inventory and Analysis standards.

TABLE 3--NUMBER OF GROWING STOCK TREES ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)							
	SEEDLINGS LESS THAN 1.0	1.0-10.9	11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
				THOUSAND TREES				
SOFTWOODS:								
PACIFIC SILVER FIR	36,447.45	8.621.38	820.48	418.60	112.87	4.39	--	46,425.18
ALASKA-CEDAR	97.561.12	41,195.92	8,344.60	1,560.31	180.20	8.26	7.12	148.851.52
SITKA SPRUCE	120,038.11	18.494.28	3,554.76	2.258.55	915.28	379.52	180.75	145,821.25
LODGEPOLE PINE	621.52	1.416 .ll	74.64	17.42	--	--	--	2,129.69
WSTERN RED CEDAR	76.572.73	27.382.19	8.244.99	2,763.89	512.62	67.64	5.95	115,470.00
WSTERN HEMLOCK	1,692,205.78	256,933.91	26.796.53	7.605.17	2.173.39	400.78	40.59	1,986.156.13
MOUNTAIN HEMLOCK	178.369.67	61.797.80	10.358.78	2,833.69	611.27	28.15	--	253.999.35
TOTAL	2.201.816.38	415.761.61	58,194.78	17,457.63	4.505.61	888.73	234.40	2,698,859.13
HARDWOODS:								
RED ALDER	2,179.95	5,244.71	359.55	--	--	--	--	7,784.24
BLACK COTTONWOOD	1,312.39	1,715.42	60.94	18.05	40.05	11.44	--	3,158.29
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	3.492.34	6,960.15	420.49	18.05	40.05	11.44	--	10,942.53
ALL SPECIES	2,205.308.71	422,721.77	58,615.26	11,475.60	4.545.66	900.17	234.40	2,709,801.66

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 4--NUMBER OF GROWING STOCK TREKS ON OLD-GROWTH TIMBERLAND BY SPECIBS AND DIAMETER CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

ALL SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)							
	SEEDLINGS LESS THAN 1.0	1.0-10.9	11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	CLASSES
				THOUSAND TREES				
SOFTWOODS:								
PACIFIC SILVER FIR	34,701.02	8,071.78	820.48	418.60	112.87	4.39	--	44,129.14
ALASKA-CEDAR	97,561.12	41,195.92	8,344.60	1.560.31	180.20	8.26	7.12	148,857.52
SITKA SPRUCE	103.617.32	14,805.11	2,991.79	2,124.18	896.16	356.00	180.75	124.971.31
LODGEPOLE PIUE	621.52	1,416.11	74.64	17.42	--	--	--	2.129.69
WESTERN REDCEDAR	76.326.69	27.246.49	8,244.99	2,763.89	512.62	61.64	5.95	115.168.26
WESTERN HEMLOCK	1,602,016.69	247.599.43	25,603.91	7,535.99	2.146.95	400.78	40.59	1,885,344.33
MOUNTAIN HEMLOCK	177,334.48	60,248.75	10.245.58	2,833.69	611.27	28.15	--	251,301.91
TOTAL	2,092,178.83	400.583.60	56,325.99	17,254.08	4.460.06	865.21	234.40	2.571.902.16
HARDWOODS:								
RED ALDER	621.52	2.933.23	249.32	--	--	--	--	3,804.07
BLACK COTTONWOOD	--	--	--	9.47	40.05	11.44	--	60.96
OTHER -OS-	--	--	--	--	--	--	--	--
TOTAL	621.52	2,933.23	249.32	9.47	40.05	11.44	--	3.865.03
ALL SPSOIBS	2,092,800.34	403.516.83	56,575.31	17.263.55	4,500.11	876.65	234.40	2.575.767.19

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 5--NUMBER OF GROWING STOCK TREES ON YOUNG-GROWTH TIMBERLAND BY SPKCIBS AND DIAMETER CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)							
	SEEDLINGS LESS THAN 1.0	1.0-10.9	11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
				THOUSAND TREES				
SOFTWOODS:								
PACIFIC SILVER FIR	1.796.44	549.60	--	--	--	--	--	2,296.04
ALASKA-CEDAR	--	--	--	--	--	--	--	
SITKA SPRUCE	16.420.79	3,689.17	562.97	134.37	19.12	23.52	--	20.849.94
LODGEPOLE PINE	--	--	--	--	--	--	--	--
WESTERN REDCEDAR	246.04	55.70	--	--	--	--	--	301.74
WESTERN HEMLOCK	90,189.09	9,334.48	1,192.62	69.18	26.44	--	--	100.811.80
MOUNTAIN HEMLOCK	1,035.19	1,549.05	113.20	--	--	--	--	2,697.44
TOTAL	109,637.55	15,178.01	1.868.79	203.55	45.55	23.52	--	126,956.97
HARDWOODS:								
RED ALDER	1,558.43	2.311.51	110.23	--	--	--	--	3.980.17
BLACK COTTONWOOD	1,312.39	1.715.42	60.94	8.58	--	--	--	3.097.33
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	2.810.82	4,026.93	171.17	8.58	--	--	--	7,077.50
ALL SPKCIBS	112.508.37	19.204.94	2.039.95	212.13	45.55	23.52	--	134.034.47

Estimates u e subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 6--NUMBER OF GROWING STOCK HORTALITY TREES PER YEAR ON TIHBERLAND BY SPECIES AND DIAHETER CLASS, RETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	DIAHETER CLASS (INCHES AT BREAST HEIGHT)						
	1.0-10.9	11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
			THOUSAND TREES				
SOFTWOODS:							
PACIFIC SILVER FIR	310.76	--	--	--	--	--	310.76
ALASKA-CEDAR	--	79.86	26.38	29.75	--	--	135.99
SITKA SPRUCE	929.13	54.66	105.69	41.57	3.85	--	1,134.90
LODGEPOLE PINE	--	--	--	--	--	--	--
WESTERN REDCEDAR	715.03	74.23	62.51	25.79	--	--	877.62
WESTERN HEMLOCK	3,715.97	986.63	313.133	91.80	8.85	3.92	5,121.00
MOUNTAIN HEMLOCK	780.a5	103.06	27.47	7.84	4.39	--	923.61
TOTAL	6,451.74	1,298.44	535.94	196.75	17.09	3.92	8,503.88
HARDVOODS:							
RED ALDER	--	--	--	--	--	--	--
BLACK COTTONWOOD	--	--	9.39	--	--	--	9.39
OTHER HARDVOODS	--	--	--	--	--	--	--
TOTAL	--	--	9.39	--	--	--	9.39
ALL SPECIES	6,451.74	1,298.44	545.33	196.75	17.09	3.92	8,513.27

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 7--NET VOLUME OF GROWING STOCK ON TIMBERLAND, IN CUBIC FEET AND VOLUME PER ACRE, BY FOREST TYPE AND STAND SIZE CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

FOREST TYPE AND UNIT	SAWTIMBER		POLETIMBER	SEEDLINGS AND SAPLINGS	NONSTOCKED	ALL CLASSES
	OLD GROWTH	YOUNG GROWTH				
PACIFIC SILVER FIR:						
FT3	39,069,890	--	--	--	--	39,069,890
ACRES	6,779	--	--	--	--	6,779
FT^3/ACRE	5,763	--	--	--	--	5,763
ALASKA CEDAR:						
FT3	442,119,347	--	--	--	--	442,119,347
ACRES	94,902	--	--	--	--	94,902
FT^3/ACRE	4.659	--	--	--	--	4,659
HEMLOCK-SPRUCE:						
FT3	608,873,555	30,227,409	--	0	--	639,100,906
ACRES	73,622	6,779	--	10,734	--	91,136
FT^3/ACRE	8,270	4,459	--	0	--	7,013
SITKA SPRUCE:						
FT^3	302,113,606	35,915,856	--	167,861	--	338,197,321
ACRES	44,413	6,779	--	698	--	51,890
FT^3/ACRE	6,802	5,298	--	240	--	6,518
WESTERN REDCEDAR:						
FT^3	563,573,286	--	--	--	--	563,573,286
ACRES	149,005	--	--	--	--	149,005
FT^3/ACRE	3,782	--	--	--	--	3,782
MOUNTAIN HEMLOCK:						
Fr3	903,210,125	--	3,495,224	--	--	906,705,350
ACRES	169,550	--	3,764	--	--	173,315
FT^3/ACRE	5,327	--	929	--	--	5,231
WESTERN HEMLOCK:						
FT^3	3,356,224,678	51,154,228	--	5,840,187	--	3,413,219,072
ACRES	561,657	6,576	--	14,498	--	582,732
FT^3/ACRE	5,976	7,779	--	403	--	5,857
LODGEPOLE PINE:						
FT3	--	--	--	--	--	
ACRES	--	--	--	--	--	--
FT^3/ACRE	--	--	--	--	--	--
RED ALDER:						
FT^3	--	--	--	--	0	0
ACRES	--	--	--	--	698	698
FT^3/ACRE	--	--	--	--	0	0
BLACK COTTONWOOD:						
FT^3	44,210,360	--	7,095,345	141,501	--	51,447,205
ACRES	6,576	--	3,764	698	--	11,038
FT^3/ACRE	6,723	--	1,885	203	--	4,661
ALL TYPES:						
FT^3	6,259,394,157	117,297,493	10,590,569	6,149,549	0	6,393,431,744
ACRES	1,106,506	20,134	7,528	26,629	698	1,161,496
FT^3/ACRE	5,657	5,826	1,407	231	0	5,504

Estimates are subject to sampling error.

— = no data were collected.

1/ Totals may be off because of rounding.

TABLE 8--NET VOLW OF SAWTIMBER ON TIHBERLAND, IN BOARD FEET INTERNATIONAL 1/4-INCH RULE AND VOLUME PER ACRE, BY FOREST TYPE AND STAND SIZE CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

FOREST TYPE AND UNITS	SAWTIMBER		POLETIMBER	SEEDLINGS AND SAPLINGS	NONSTOCKED	ALL CLASSES
	OLD GROWTH	YOUNG GROWTH				
PACIFIC SILVER FIR:						
FBM 2/	150,341,096	--	--	--	--	150,341,096
ACRES	6,779	--	--	--	--	6,779
FBM/ACRE	22,177	--	--	--	--	22,177
ALASKA-CEDAR:						
FBM	1,691,096,921	--	--	--	--	1,691,096,921
ACRES	94,902	--	--	--	--	94,902
FBM/ACRE	17,819	--	--	--	--	17,819
HEMLOCK-SPRUCE:						
FBU	3,156,377,260	149,416,884	--	0	--	3,305,794,131
ACRES	73,622	6,779	--	10,734	--	91,136
FBM/ACRE	42,872	22,041	--	0	--	36,273
SITKA SPRUCE:						
FBM	1,619,437,376	181,374,691	--	0	--	1,800,812,032
ACRES	44,413	6,779	--	698	--	51,890
FBM/ACRE	36,463	26,755	--	0	--	34,704
WESTERN REDCEDAR:						
FBM	2,012,586,604	--	--	--	--	2,012,586,604
ACRES	149,005	--	--	--	--	149,005
FBM/ACRE	13,507	--	--	--	--	13,507
UOUNTAIN HEHLOCK:						
FBM	3,729,842,752	--	3,343,093	--	--	3,733,185,862
ACRES	169,550	--	3,764	--	--	173,315
FBM/ACRE	21,998	--	888	--	--	21,540
WESTERN HEHLOCK:						
FBM	14,466,583,763	245,555,804	--	13,086,099	--	14,725,225,600
ACRES	561,657	6,576	--	14,498	--	582,732
FBM/ACRE	25,757	37,341	--	903	--	25,269
LODGEPOLE PINE:						
FBU	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FBM/ACRE	--	--	--	--	--	--
RED ALDER:						
FBM	--	--	--	--	0	0
ACRES	--	--	--	--	698	698
FBM/ACRE	--	--	--	--	0	0
BLACK COTTONWOOD:						
FBM	248,050,950	--	8,056,724	0	--	256,107,674
ACRES	6,576	--	3,764	698	--	11,038
FBM/ACRE	37,721	--	2,140	0	--	23,202
ALL TYPES:						
FBM	27,074,313,516	576,347,366	11,399,817	13,086,099	0	27,675,146,284
ACRES	1,106,506	20,134	7,528	26,629	698	1,161,496
FBM/ACRE	24,468	28,626	1,514	491	0	23,827

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ FBU = board-foot measure, International 1/4-inch rule.

TABLE 9--NET VOLUME OF TIMBER, CUBIC FEET, ON TIMBERLAND BY CLASS OF TIMBER AND BY SOFTWOODS AND HARDWOODS. KETCHIKAN UNIT, SOUTHEAST COASTAL, ALASKA, 1974 1/

CLASS OF TIMBER	SOFTWOODS	HARDWOODS	ALL SPECIES
	MILLION CUBIC FEET		
SAWTIMBER TREES:			
SAW-LOG PORTION	5,603.49	33.64	5,637.13
UPPER-STEM PORTION	149.10	0.87	149.98
TOTAL	5,752.60	34.51	5,787.11
POLETIMBER TREES	595.90	10.43	606.33
ALL GROWING STOCK	6,348.49	44.94	6,393.43
ROUGH TREES	5.39	--	5.39
ROTTEN TREES	401.91	1.57	403.48
SALVABLE DEAD TREES	137.50	--	137.50
ALL TIMBER	6,893.29	46.51	6,939.80

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 10--NET V O L W OF SAWTIMBER, INTERNATIONAL 1/4-INCH RULE, ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	DIAHETER CLASS (INCHES AT BREAST HEIGHT) 11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
			MILLION BOARD FEET			
SOFTWOODS:						
PACIFIC SILVER FIR	131.34	344.68	182.61	11.65	--	670.28
ALASKA-CEDAR	692.92	471.78	90.26	11.09	11.81	1,277.86
SITKA SPRUCE	717.12	1,900.66	1,864.12	1,367.74	1,073.32	6,922.97
LODGEPOLE PINE	6.71	4.44	--	--	--	11.15
WESTERN REDCEDAR	689.52	780.43	262.89	59.90	7.99	1,800.74
WESTERN HEMLOCK	4,464.63	4,808.25	2,757.20	829.61	117.92	12,977.62
MOUNTAIN HEMLOCK	1,535.02	1,599.64	638.24	55.21	--	3,828.11
TOTAL	8,237.27	9,909.87	5,795.33	2,335.20	1,211.04	27,488.73
HARDWOODS:						
RED ALDER	55.92	--	--	--	--	55.92
BLACK COTTONWOOD	3.00	14.35	79.59	33.56	--	130.51
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	58.92	14.35	79.59	33.56	--	186.42
ALL SPECIES	8,296.18	9,924.23	5,874.92	2,368.76	1,211.04	27,675.15

Estimates are subject to sampling error.

-- = **no data were collected.**

1/ Totals may be off because of rounding.

TABLE 11--NET VOLUME OF OLD GROWTH, INTERNATIONAL 1/4-INCH RULE, ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, KETCHIW UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT) 11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
			MILLION BOARD PERT			
SOFTWOODS:						
PACIFIC SILVER FIR	131.34	344.68	182.61	11.65	--	670.28
ALASKA-CEDAR	692.92	471.78	90.26	11.09	11.81	1,277.86
SITKA SPRUCE	611.15	1,812.27	1,832.70	1,290.63	1,073.32	6,620.08
LODGEPOLE PINE	6.71	4.44	--	--	--	11.15
WESTERN REDCEDAR	689.52	780.43	262.89	59.90	7.99	1,800.74
WESTERN HEMLOCK	4,284.01	4,758.28	2,721.93	829.61	117.92	12,711.77
MOUNTAIN HEMLOCK	1,525.55	1,599.64	638.54	55.21	--	3,818.64
TOTAL	7,941.21	9,771.52	5,728.64	2,258.09	1,211.04	26,910.52
HARDWOODS:						
RED ALDER	39.34	--	--	--	--	39.34
BLACK COTTONWOOD	--	11.31	79.59	33.56	--	124.47
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	39.34	11.31	79.59	33.56	--	163.80
ALL SPECIES	7,980.54	9,782.84	5,808.23	2,291.65	1,211.04	27,074.32

Estimates are subject to sampling error.

-- = **no data were collected.**

1/ Totals may be off because of rounding.

TABLE 12--NET VOLUME OF YOUNG GROWTH, INTERNATIONAL 1/4-INCH RULE, ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT) 11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
	MILLION BOARD FEET					
SOFTWOODS:						
PACIFIC SILVER FIR	--	--	--	--	--	--
ALASKA-CEDAR	--	--	--	--	--	--
SITKA SPRUCE	105.97	88.39	31.42	77.13	--	302.89
LODGEPOLE PINE	--	--	--	--	--	--
WESTERN REDCEDAR	--	--	--	--	--	--
WESTERN HEMLOCK	180.62	49.97	35.27	--	--	265.85
MOUNTAIN HEMLOCK	9.47	--	--	--	--	9.47
TOTAL	296.06	138.35	66.69	77.13	--	578.21
HARDWOODS:						
RED ALDER	16.58	--	--	--	--	16.58
BLACK COTTONWOOD	3.00	3.04	--	--	--	6.04
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	19.58	3.04	--	--	--	22.62
ALL SPECIES	315.64	141.39	66.69	77.13	--	600.83

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 13--NET VOLUME OF GROWING STOCK, CUBIC PERT, ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT) 5.0-10.9	11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
			MILLION CUBIC FEET				
SOFTWOODS:							
PACIFIC SILVER FIR	9.95	31.02	65.47	35.01	2.30	--	143.75
ALASKA-CEDAR	44.76	193.68	111.89	20.67	2.11	2.19	375.30
SITKA SPRUCE	26.69	151.59	339.06	314.79	224.34	181.73	1,238.20
LODGEPOLE PINE	.43	1.76	1.06	--	--	--	3.25
WESTERN REDCEDAR	46.75	209.97	201.40	63.44	13.16	1.62	536.33
WESTERN HEMLOCK	395.80	993.77	999.27	564.12	166.47	23.60	3,143.08
MOUNTAIN HEMLOCK	71.51	353.09	336.52	136.52	10.99	--	908.64
TOTAL	595.89	1,934.88	2,054.66	1,134.55	419.37	209.13	6,348.49
HARDWOODS:							
RED ALDER	5.50	12.58	--	--	--	--	18.09
BLACK COTTONWOOD	4.93	.84	2.37	13.18	5.55	--	26.86
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	10.43	13.42	2.37	13.18	5.55	--	44.94
ALL SPECIES	606.33	1,948.28	2,057.03	1,147.73	424.92	209.13	6,393.44

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 14--NET VOLUME OF OLD GROWTH, CUBIC FEET, ON TIMBERLAND BY SPECIES AND DIAMETER CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

	DIAHETER CLASS (INCHES AT BREAST HEIGHT)						
SPECIES	5.0-10.b	11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
			MILLION CUBIC FEET				
SOFTWOODS:							
PACIFIC SILVER FIR	9.95	31.02	65.47	35.01	2.30	--	143.?5
ALASKA-CEDAR	44.76	193.68	111.89	20.67	2.11	2.19	375.30
SITKA SPRUCE	24.54	130.20	322.96	309.22	211.49	181.73	1,180.14
LODGEPOLE PINE	0.43	1.76	1.06	--	--	--	3.25
WESTERN REDCEDAR	46.24	209.97	201.40	63.39	13.16	1.62	535.77
WESTERN HEMLOCK	394.23	954.99	988.94	556.10	166.47	23.60	3,084.33
MOUNTAIN HEMLOCK	69.19	350.69	336.52	136.52	10.99	--	903.92
TOTAL	589.34	1,872.31	2,028.23	1,120.91	406.52	209.13	6,226.45
HARDWOODS:							
RED ALDER	3.88	8.63	--	--	--	--	12.51
BLACK COTTONWOOD	--	--	1.71	13.18	5.55	--	20.44
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	3.88	8.63	1.71	13.18	5.55	--	32.94
ALL SPECIES	593.22	1,880.94	2,029.94	1,134.09	412.07	209.13	6,259.40

Estimates are subject to sampling error.

-- = no data were colected.

1/ Totals may be off because of rounding.

TABLE 15--NET VOLUME OF YOUNG GROWTH, CUBIC FEET, ON TIHBERLAND BY SPECIES AND DIAMETER CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	DIAMETER CLASS (INCHES AT BREAST HEIGHT)						
	5.0-10.9	11.0-20.9	21.0-30.9	31.0-40.9	41.0-50.9	51.0 AND LARGER	ALL CLASSES
	MILLION CUBIC FEET						
SOFTWOODS:							
PACIFIC SILVER FIR	--	--	--	--	--	--	--
ALASKA-CEDAR	--	--	--	--	--	--	--
SITKA SPRUCE	2.15	21.39	16.10	5.57	12.85	--	58.06
LODGEPOLE PINE	--	--	--	--	--	--	--
WESTERN REDCEDAR	.51	--	--	.OS	--	--	.56
WESTERN HEMLOCK	1.57	38.78	10.33	8.02	--	--	58.75
MOUNTAIN HEMLOCK	2.32	2.40	--	--	--	--	4.72
TOTAL	6.55	62.57	26.43	13.64	12.85	--	122.04
HARDWOODS:							
RED ALDER	1.62	3.95	--	--	--	--	5.58
BLACK COTTONWOOD	4.93	.84	66	--	--	--	6.42
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	6.55	4.79	.66	--	--	--	12.00
ALL SPECIES	13.11	67.34	27.09	13.64	12.85	--	134.04

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 16--NET ANNUAL GROWTH OF GROWING STOCK, CUBIC FEET, ON TIHBERLAND BY SPECIES AND STAND SIZE CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAUTIHBER	OLD-GROWTH SAWTIHBER	ALL CLASSES
			THOUSAND CUBIC FEET		
SOFTWOODS:					
PACIFIC SILVER FIR	--	--	--	69.09	69.09
ALASKA-CEDAR	111.39	--	--	1,366.26	1,477.64
SITKA SPRUCE	22.24	--	436.88	2/-16,620.15	-16,161.02
LODGEPOLE PINE	--	--	--	--	--
WESTERN REDCEDAR	550.21	--	--	-8,455.71	-7,905.51
WESTERN HEMLOCK	72.98	--	61.84	-11,446.98	-11,312.17
MOUNTAIN HEMLOCK	--	--	--	361.27	361.27
TOTAL	756.82	--	498.71	-34,726.23	-33,470.69
HARDWOODS:					
RED ALDER	--	--	2.89	-10.73	-7.84
BLACK COTTONWOOD	--	--	354.30	--	354.30
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	357.19	-10.73	346.49
ALL SPECIES	756.82	--	855.90	-34,736.96	-33,124.23

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Negative net annual growth indicates that annual mortality exceeded gross annual growth.

TABLE 17--NET ANNUAL GROWTH OF SAWTIMBER, INTERNATIONAL 1/4-INCH RULE, ON TIMBERLAND BY SPECIES AND STAND SIZE CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
SOFTWOODS:					
PACIFIC SILVER FIR	--	--	--	226.80	226.80
ALASKA-CEDAR	--	--	--	4,334.65	4,334.65
SITKA SPRUCE	--	--	3,217.72	2/-103,108.35	-99,890.62
LODGEPOLE PINE	--	--	--	--	--
WESTERN REDCEDAR	--	--	--	-33,174.95	-33,174.95
WESTERN HEMLOCK	--	--	--	-54,778.64	-54,778.64
MOUNTAIN HEMLOCK	--	--	--	1,252.66	1,252.66
TOTAL	--	--	3,217.72	-185,247.83	-182,030.10
HARDWOODS:					
RED ALDER	--	--	11.95	502.71	-490.76
BLACK COTTONWOOD	--	--	2,327.54	--	2,327.54
OTHER HARDWOODS	--			--	--
TOTAL	--	--	2,339.49	-502.71	1,836.78
ALL SPECIES	--	--	5,557.22	-185,750.54	-180,193.32

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Negative net annual growth indicates that annual mortality exceeded gross annual growth.

TABLE 18--NET ANNUAL GROWTH OF GROWING STOCK, CUBIC FEET, ON TIMBERLAND BY FOREST TYPE AND STAND SIZE CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIHBER	ALL CLASSES
			THOUSAND CUBIC FEET		
ALASKA-CEDAR	--	--	--	--	--
HEMLOCK-SPRUCE	--	--	--	1,759.68	1,759.68
SITKA SPRUCE	--	--	530.75	-9,507.03	-8,976.28
WESTERN REDCEDAR	--	--	--	2/-3,051.98	-3,051.98
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEHLOCK	756.82	--	--	-23,937.63	-23,180.80
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	325.15	--	325.15
ALL TYPES	756.82	--	855.90	-34,736.96	-33,124.24

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Negative net annual growth indicates that annual mortality exceeded gross annual growth.

TABLE 19--NET ANNUAL GROWTH OF SAWTIMBER, INTERNATIONAL 1/4-INCH RULE, ON TIMBERLAND BY FOREST TYPE AND STAND SIZE CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
ALASKA-CEDAR	--	--	--	--	--
HEMLOCK-SPRUCE	--	--	--	3,622.31	3,622.31
SITKA SPRUCE	--	--	2,877.91	-69,860.93	-66,983.01
WESTERN REDCEDAR	--	--	--	2/ -9,143.92	-9,143.92
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	--	--	-110,368.00	-110,368.00
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	2,679.30	--	2,679.30
ALL TYPES	--	--	5,557.22	-185,750.54	-180,193.33

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Negative net annual growth indicates that annual mortality exceeded gross annual growth.

TABLE 20--AVERAGE ANNUAL MORTALITY OF GROWING STOCK, CUBIC FEET, ON TIMBERLAND BY SPECIES AND STAND SIZE CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIHBER	ALL CLASSES
			THOUSAND CUBIC FEET		
SOFTWOODS:					
PACIFIC SILVER FIR					
ALASKA-CEDAR				--	--
SITKA SPRUCE				19,516.69	19,516.69
LODGEPOLE PINE	--	--	--	--	--
WESTERN REDCEDAR	--	--	--	1,046.09	1,046.09
WESTERN HEMLOCK	--	--	--	34,499.59	34,499.59
MOUNTAIN HEMLOCK	--	--	--	--	--
TOTAL	--	--	--	55,062.37	55,062.37
HARDWOODS:					
RED ALDER	--	--	--	147.05	147.05
BLACK COTTONWOOD	--	--	349.99	--	349.99
OTHER HARDWOODS	--	--	--	--	--
TOTAL			349.99	147.05	497.04
ALL SPECIES	--	--	349.99	55,209.42	55,559.41

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 21--AVERAGE ANNUAL MORTALITY OF SAWTIMBER, INTERNATIONAL 1/4-INCH RULE, ON TIHBERLAND BY SPECIES AND STAND SIZE CLASS, KETCHIKAN UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIHBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
SOFTWOODS:					
PACIFIC SILVER FIR	--	--	--	--	--
ALASKA-CEDAR	--	--	--	--	--
SITKA SPRUCE	--	--	--	102,543.15	102,543.15
LODGEPOLE PINE	--	--	--	--	--
WESTERN REDCEDAR	--	--	--	3,314.79	3,314.79
WESTERN HEMLOCK	--	--	--	145,501.37	145,501.37
MOUNTAIN HEHLOCK	--	--	--	--	--
TOTAL	--	--	--	251,359.31	251,359.31
HARDWOODS:					
RED ALDER	--	--	--	555.20	555.20
BLACK COTTONWOOD	--	--	1,884.52	--	1,884.52
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	1,884.52	555.20	2,439.72
ALL SPECIES	--	--	1,884.52	251,914.50	253,799.02

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 22--AVERAGE ANNUAL MORTALITY OF GROWING STOCK, CUBIC FEET, ON TIMBERLAND BY FOREST TYPE AND STAND SIZE CLASS, KETCHIW UNIT, SOUTHEAST COASTAL ALASKA, 1974 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAYTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
ALASKA-CEDAR	--	--	--	--	--
HEMLOCK-SPRUCE	--	--	--	--	--
SITKA SPRUCE	--	--	349.99	6,244.65	6,594.64
WESTERN REDCEDAR	--	--	--	1,046.09	1,046.09
TRUE FIR	--	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	--	--	47,918.68	47,918.68
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	--	349.99	55,209.42	55,559.41

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 23--AVERAGE ANNUAL HORTALITY OF SAWTIMBER, INTERNATIONAL 1/4-INCH RULE, ON TIHBERLAND BY FOREST TYPE *AND* SI'AND SIZE CLASS, KETCHIKAN WIT, SOUTHEAST COASTAL ALASKA, 1974 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUGEGROWTH SAWTIMBER	OLD-GROWTH SAYTIMBER	*ALL* CLASSES
			THOUSAND BOARD FEET		
ALASKA-CEDAR	--	--	--	--	--
HEMLOCK-SPRUCE	--	--	--	--	--
SITKA SPRUCE	--	--	1,884.52	29,338.07'	31,222.59
WESTERN REDCEDAR	--	--	--	3,314.79	3,314.79
TRUE FIR	--	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	--	--	219,261.64	219,261.64
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	--	1,884.52	251,914.50	253,799.02

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

TABLE 24--SUMMARY OF TIHBER HARVEST IN THE KETCHIW INVENTORY UNIT, SOUTHEAST COASTAL ALASKA, 1974-80

YEAR OF HARVEST	VOLUME CUT, INTERNATIONAL 114-INCH RULE	VOLUME CUT SCRIBNER RULE, BUREAU SCALE 1/	VALUE
	THOUSAND BOARD FEET		*DOLLARS*
1974	25,694.25	21,583.17	$ 55,900.42
1975	14,114.17	11,855.90	283,237.43
1976	26,470.36	22,235.10	531,196.54
1977	13,682.42	11,493.23	274,573.19
1978	21,355.54	17,938.65	428,554.35
1979	22,633.42	19,012.07	454,217.49
1980	23,456.04	19,703.07	1,441,870.37
TOTAL	147,406.20	123,821.19	3,469,549.79

1/ Scribner, Bureau scale volume = International 1/4-inch volume x 0.84. (Bones, James E. Relating products output to inventory estimates on the Tongass Forest. Juneau, *AK:* Northern Forest Experiment Station; 1963. Office Report.)

Acknowledgments

The USDA Forest Service, Alaska Region, Juneau, Alaska, provided generous assistance to and funding for this inventory.

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Timber operability classification by: Douglas A. Cronlund.

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Statistical report prepared by: Willem W.S. van Hees.

Metric Equivalents

1 inch = 2.54 centimeters (cm)
1 foot = 0.3048 meter (m)
1 mile = 1.609 kilometers (km)
1 acre = 0.4047 hectares (ha)
1 cubic foot = 0.0283 cubic meter (m^3)
1 cubic foot per acre = 0.07 cubic meter per hectare (m^3/ha)
20 cubic feet per acre = 1.4 cubic meters per hectare (m^3/ha)
1 square foot basal area per acre = 0.2296 square meter per hectare (m^2/ha)

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Statistics on forest area, total gross and net timber volumes, and annual net growth and mortality are presented from the 1974 timber inventory of the Ketchikan.unit, Alaska. Timberland area is estimated at 1.16 million acres (470 040 ha), net growing stock volume at 6.39 billion cubic feet (181.04 million m^3), and annual net growth and mortality at -33.12 million cubic feet and 55.56 million cubic feet (-0.94 and 1.57 million m^3), respectively.

Keywords: Forest surveys, timber resources, timber inventory resources (forest), statistice (forest), Alaska (southeast), southeast Alaska.

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

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