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Timber Resource Statistics for the Juneau Inventory Unit, Alaska, 1970

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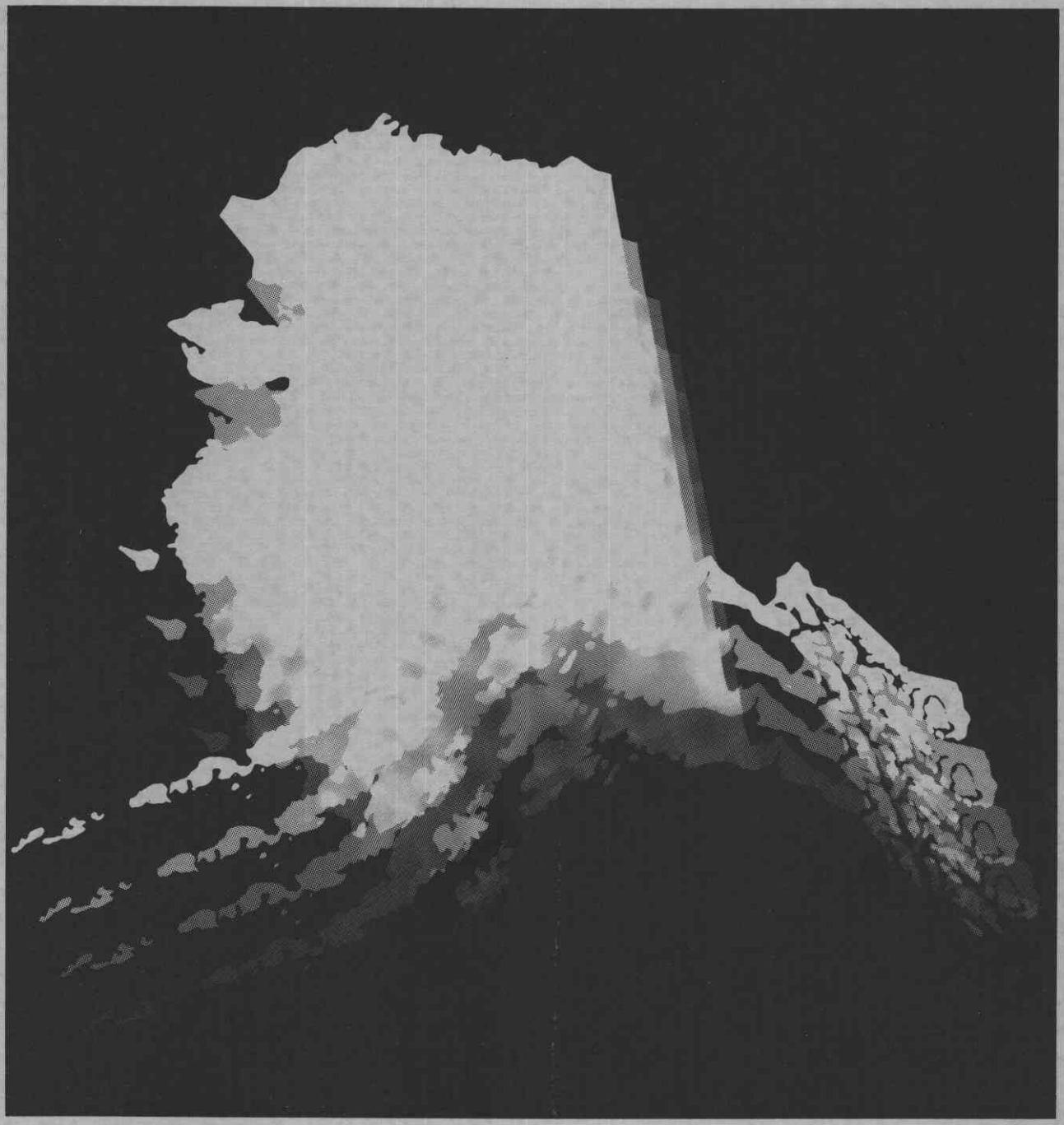

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Abstract

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Statistics on forest area, total gross and net timber volumes, and annual net growth and mortality are presented for the 1970 timber inventory of the Juneau unit, Alaska. Estimates for commercial forest land area total 1.3 million acres (535 000 ha) with a net growing stock volume of 8.3 billion cubic feet (234 million m^3), and annual net growth and mortality of 13.5 and 37.9 million cubic feet (0.4 and 1.1 million m^3), respectively.

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

Summary

This report for the 3.2-million-acre (1.3-million-ha) Juneau timber inventory unit is the first in a series of six reports for southeast Alaska. The Juneau inventory unit is situated in the northern panhandle of southeast Alaska, and includes the mainland from the border of the Tongass National Forest at White Pass on the Canadian border, just north of Skagway, south to Port Houghton. The unit also includes all National Forest lands on the Chilkat peninsula, as well as on Admiralty, Douglas, and other small islands in Lynn Canal and Seymour Passage.

This effort is the first general reinventory of the forests in the Juneau unit, originally inventoried in 1954. It is also the second remeasurement of the growth and mortality plots established in 1954 and first remeasured in 1964.

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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 50 States. The Pacific Northwest Forest and Range Experiment Station at Portland, Oregon, is responsible for inventories in the States of Alaska, California, Hawaii, Oregon, and Washington.

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Highlights

	Thousand acres	*Thousand hectares*
Total Juneau inventory unit area:	3,208.9	1 298.6
With forests	1,891.1	765.3
With nonforest	1,311.1	530.6
With non-Census water	6.7	2.7
With Census water	1/	1/
Forested area:		
Timberland	1,321.6	534.9
Other forest land	569.5	230.5
Timberland composition:		
Old-growth sawtimber	1,224.6	495.6
Young-growth sawtimber	67.7	27.4
Poletimber	6.8	2.7
Seedlings and saplings, and nonstocked	22.6	9.1
Timberland forest type composition:		
Sitka spruce	121.4	49.1
True fir	1/	1/
Hemlock-spruce	221.7	89 .7
Western hemlock	680.7	275.5
Mountain hemlock	250.5	101.4
Alaska-cedar	47.4	19.2
Lodgepole pine	1/	1/
Other softwoods	1/	1/
Red alder	1/	1/
Black cottonwood	1/	1/
Other hardwoods	1/	1/

	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	9,217.8	260.9	47,704.8	241.7
Total net volume	8,264.9	233.9	36,795.9	216.0
Annual net growth	13.5	0.4	58.8	.1
Annual net mortality	37.9	1.1	175.0	1.1

1/ A sample was not encountered.
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 (12.7 cm) in d.b.h. and larger.

Introduction

This report for the 3.2-million-acre (1.3-million-ha) Juneau timber inventory unit is the first in a series of six reports for southeast Alaska. The Juneau inventory unit is situated in the northern panhandle of southeast Alaska, and includes the mainland from the border of the Tongass National Forest at White Pass on the Canadian border, just north of Skagway south to Port Houghton (fig. 1). The unit also includes all National Forest lands on the Chilkat peninsula, as well as on Admiralty, Douglas, and other small islands in Lynn Canal and Seymour Passage.

This effort is the first general reinventory of the forests in the Juneau unit, first inventoried in 1954. It is also the second remeasurement of the growth and mortality plots established in 1954 and first remeasured in 1964.

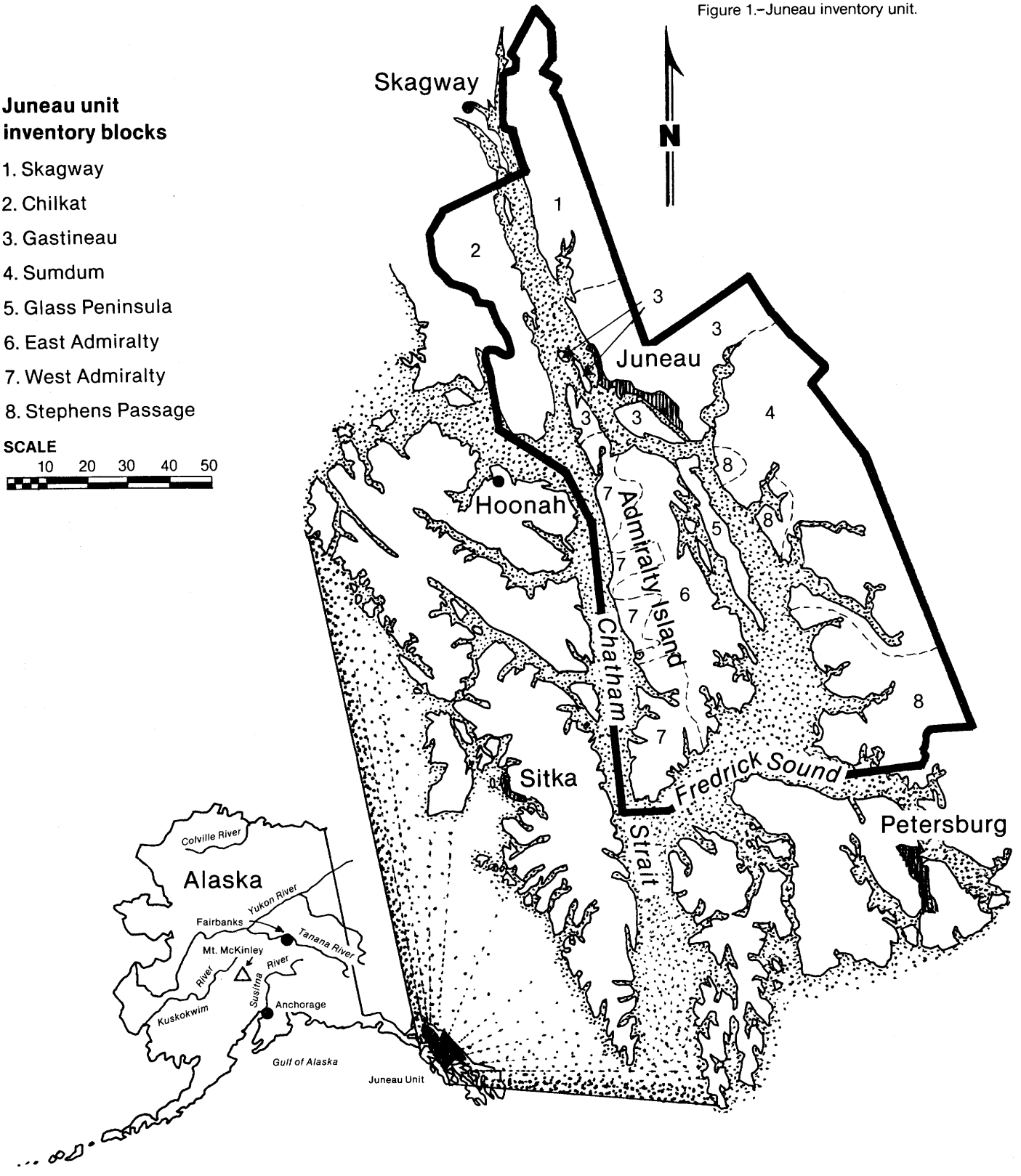
Inventory Procedures

The estimates of area and timber volumes for the 1970 timber reinventory are based on a double sampling (2-phase) procedure (Bickford 1952). In the first phase of the sampling study, 14,405 photo points were systematically distributed over 1:15,840-scale aerial photographs, and were then interpreted. Each photo point was classified by land type, volume class, stand size class, forest type, crown closure, and operability class. Of the 14,405 photo plots, 214 were measured on the ground in the second phase of sampling. Area classifications and measurements of volume on these ground plots serve as the basis for the area and volume estimates presented here.

Growth and mortality estimates were available from the 1970 reinventory ground plots. This growth information was based on increment borings; the mortality estimates were based on estimations of the number of years since the tree died. Because mortality information is difficult to obtain in this way, we used both the mortality and growth information from the 1970 remeasurement data rather than that from the 1970 reinventory data.

The 1970 remeasurement study utilized 36 timber inventory plots established in 1954 and originally remeasured in 1964. The total volume base for the 1970 growth and mortality remeasurement study was calibrated to coincide with that found in the 1970 timber reinventory study prior to compiling the remeasurement growth and mortality volumes.

Figure 1.–Juneau inventory unit.



Ownership Statistics

Statistics on ownership of the land base 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 land status changes are the result of three national legislative acts (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 were still indefinite at the end of 1981, and the Alaska State selections will remain uncertain for the next 5-10 years. Fieldwork for our study was completed in 1970; we have delayed publishing the results, anticipating that shifts in land ownership would be resolved by now and the information on new ownership patterns 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 more clear. It is clear now, however, that the Alaska Native and Alaska State land selections are concentrating more on timberlands than previously, which will leave a smaller proportion of the better timberland in Federal ownership.

Timber Harvesting

A summary of timber volumes cut in the Chatham and North Tongass areas of the Tongass National Forest is provided in table 24. Although these areas do not coincide exactly with the inventory boundaries used by Forest Inventory and Analysis (FIA), the volume-cut figures provide an understanding of the amount of logging activity occurring in the area from the time of the Juneau unit inventory, in 1970, 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 estimate
		Percent	
Area:			
Timberland, per million acres	3.0	2.39	± 2.08, for 1.321 million acres
Other forest land, per million acres	10.0	3.89	± 5.16, for 0.569 million acres
Net volume:			
Timberland, per billion cubic feet	10.0	8.08	± 2.81, for 8.265 billion ft^3
Net growth:			
Timberland, per billion cubic feet	10.0	9.20	± 79.00 for 0.013 billion ft^3

For the Juneau inventory unit, we estimate 8.265 billion cubic feet of net growing stock volume, ± 2.81 percent, yielding 68-percent confidence limits of 8.033 and 8.497 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.

We met our design sampling error for timberland area (3 percent), for other forest land area (10 percent), and for cubic-foot net volume and net growth (both 10 percent).

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 Census that are at least 40 acres (16 ha) in size and 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 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 4½ 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 bark measured at breast height, 4½ 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 had decayed.

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[5]/ Terminology is from USDA Forest Service, Forest Service Handbook, Title 4813.1, 1967, and the manual fo 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 (3.6 m) 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 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.

Sitka 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 fir — 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 firs 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 — (1) 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 (402 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 of its board-foot volume must be in sound, recoverable wood.

Merchantable 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.

Merchantable 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, an 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 50-percent sound for hardwoods or 33-percent sound for softwoods, board-foot measure. All poletimber that is less than 50-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 (2.5 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 — Areas of water classed as land by the Bureau of the Census, but that are 1-40 acres (0.4-16 ha) in size with a minimum width of 120 feet (36 m) and a maximum width of one-eighth mile (200 m). (Also see Census water.)

Noncommercial species — A 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 which 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 (23 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 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 redcedar, 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 1.0 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 50-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 mertensia* (Bong.) Carr.
Hemlock, western	*T. heterophylla* (Raf.) Sarg.
Pine, lodgepole	*Pinus contorta* Dougl.
Redcedar, western	*Thuja plicata* Donn
Spruce, Sitka	*Picea sitchensis* (Bong.) Carr.
Yew, Pacific	*Taxus brevifolia* Nutt.
Hardwoods:	
Alder, red	*Alnus rubra* Bong.
Cottonwood, black	*Populus trichocarpa* Torr. & Gray
Willow, Barclay	*Salix barclayi* Anderss.
Willow, Bebb	*S. bebbiana* 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, Juneau unit, southeast coastal Alaska, 1970 1/

FOREST TYPE	TIMBERLAND	OTHER FOREST	ALL CLASSES
		ACRES	
SOFTWOODS:			
TRUE FIR 2/	--	--	--
SITKA SPRUCE	121,432	5,235	173,789
HEMLOCK-SITKA SPRUCE	221,671	31,066	252,737
WESTERN HEMLOCK	680,673	166,319	846,992
MOUNTAIN HEMLOCK	250,480	218,759	469,239
ALASKA-CEDAR	47,378	62,132	109,510
LODGEPOLE PINE	--	38,832	38,832
OTHER SOFTWOODS	--	--	--
TOTAL	1,321,635	569,466	1,891,101
HARDWOODS:			
BLACK COTTONWOOD	--	--	--
RED ALDER	--	--	--
OTHER HARDWOODS	--	--	--
TOTAL	--	--	--
ALL TYPES	1,321,635	569,466	1,891,101

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Subalpine fir and Pacific silver fir.

Table 2 — Area by land class and management block, Juneau unit, southeast coastal Alaska, 1970 1/

LAND CLASS	SKAGWAY	CHILKAT	GASTINEAU	SUNDUM	GLASS PENINSULA	EAST ADMIRALTY	WEST ADMIRALTY	STEPHENS PASSAGE	ALL BLOCKS
				ACRES					
TIMBERLAND:									
SEEDLING AND SAPLING, AND NONSTOCKED	4,789	13,032	--	--	--	--	4,789	--	22,610
POLETIMBER	--	--	--	--	--	--	6,762	--	6,762
SAWTIMBER VOLUME STRATA 2/--									
8,000-20,000	27,084	20,311	54,209	27,084	27,084	121,901	92,784	60,896	431,353
20,001-30,000	27,091	20,312	40,650	33,871	27,108	108,376	74,571	108,459	440,438
30,001-50,000	13,559	33,895	27,115	13,558	13,542	122,088	94,964	54,265	372,986
50,001 OR MORE	--	6,779	--	6,787	--	--	33,920	--	47,486
TOTAL	72,523	94,329	121,974	81,300	67,734	352,365	307,790	223,620	1,321,635
OTHER FOREST LAND:									
ROCKY	7,766	--	7,768	16,009	--	7,766	--	--	39,309
LOW VOLUME 3/	7,767	29,059	14,528	6,762	21,291	51,829	--	36,842	168,078
MUSKEG FOREST	--	15,532	--	7,766	7,768	46,599	15,533	37,828	131,026
HIGH ELEVATION FOREST	23,362	15,533	--	15,534	7,765	45,595	31,066	38,832	177,687
RECURRENT SLIDE AREA	--	--	--	--	--	--	--	7,767	7,767
OTHER NONPRODUCTIVE	--	--	--	46,599	--	--	--	--	46,599
TOTAL	37,895	60,124	22,296	92,670	36,824	151,789	46,599	121,269	569,466
NONFOREST:									
FARMSTEAD AND PASTURE	--	--	--	--	--	--	--	--	--
NATURAL GRASSLAND	--	--	--	--	--	--	--	--	--
ALDER SHRUBLAND	20,487	6,829	13,658	13,592	--	--	--	--	54,566
NON-ALDER SHRUBLAND	27,316	61,462	34,145	54,633	--	47,804	13,658	--	239,018
ALPINE MEADOW	--	47,804	13,658	13,658	--	40,974	20,488	13,658	150,240
MUSKEG MEADOW	6,829	6,829	--	--	--	--	--	13,658	27,316
URBAN AND OTHER	--	--	--	--	--	--	--	--	--
ALPINE ROCK	143,411	81,949	68,291	218,530	6,829	40,974	13,658	68,291	641,933
ICE AND SNOWFIELDS	68,291	34,145	27,317	54,632	--	--	--	13,658	198,043
TOTAL	266,334	239,018	157,069	355,045	6,829	129,752	47,804	109,265	1,311,116
WATER 4/	3,342	--	3,341	--	--	--	--	--	6,683
ALL LANDS	380,094	393,471	304,680	529,015	111,387	633,906	402,193	454,154	3,208,900

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 volume 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.

Table 3 — Number of growing stock trees on timberland by species and diameter class, Juneau unit, southeast coastal Alaska, 1970 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:								
SUBALPINE FIR	5,283.07	756.99	--	--	--	--	--	6,040.06
ALASKA-CEDAR	31,658.03	17,061.60	6,090.60	1,030.52	109.34	3.99	--	55,954.09
SITKA SPRUCE	264,507.75	47,641.42	14,148.75	5,198.18	1,561.85	339.36	92.43	333,489.74
LODGEPOLE PINE	--	--	--	--	--	--	--	--
WESTERN HEMLOCK	745,734.37	234,007.51	39,019.29	13,419.05	3,307.45	505.32	48.18	1,036,041.16
MOUNTAIN HEMLOCK	193,097.99	85,415.92	15,824.42	4,370.17	553.63	57.63	--	299,319.76
TOTAL	1,240,281.21	384,883.44	75,083.06	24,017.92	5,532.27	906.30	140.61	1,730,844.81
HARDWOODS:								
RED ALDER	4,570.31	3,831.07	119.74	--	--	--	--	8,521.11
BLACK COTTONWOOD	--	--	333.34	16.07	--	--	--	349.41
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	4,570.31	3,831.07	453.08	16.07	--	--	--	8,870.52
ALL SPECIES	1,244,851.50	388,714.51	75,536.14	24,033.99	5,532.27	906.31	140.61	1,739,715.32

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

Table 4 — Number of growing stock trees on old-growth timberland by species and diameter class, Juneau unit, southeast coastal Alaska, 1970 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:								
SUBALPINE FIR	--	--	--	--	--	--	--	--
ALASKA-CEDAR	31,658.03	17,061.60	6,090.60	1,030.52	109.34	3.99	--	55,954.09
SITKA SPRUCE	238,212.77	36,459.07	10,723.34	4,506.06	1,428.83	319.57	90.53	291,740.17
LODGEPOLE PINE	--	--	--	--	--	--	--	--
WESTERN HEMLOCK	687,254.79	219,937.58	37,376.34	13,347.94	3,242.33	492.70	48.18	961,699.83
MOUNTAIN HEMLOCK	193,097.99	84,125.10	15,585.98	4,370.17	553.63	57.63	--	297,790.50
TOTAL	1,150,223.58	357,583.35	69,776.26	23,254.69	5,334.13	873.89	138.71	1,607,184.59
HARDWOODS:								
RED ALDER	--	2,861.66	119.74	--	--	--	--	2,981.40
BLACK COTTONWOOD	--	--	--	--	--	--	--	--
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	--	2,861.66	119.74	--	--	--	--	2,981.40
ALL SPECIES	1,150,223.57	360,445.01	69,895.99	23,254.69	5,334.13	873.89	138.70	1,610,165.99

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 species and diameter class, Juneau unit, southeast coastal Alaska, 1970 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:								
SUBALPINE FIR	5,283.07	756.99	--	--	--	--	--	6,040.06
ALASKA-CEDAR	--	--	--	--	--	--	--	--
SITKA SPRUCE	26,294.98	11,182.36	3,425.41	692.12	133.01	19.79	2.91	41,750.57
LODGEPOLE PINE	--	--	--	--	--	--	--	--
WESTERN HEMLOCK	58,479.58	14,069.93	1,642.96	71.11	65.12	12.62	--	74,341.33
MOUNTAIN HEMLOCK	--	1,290.82	238.44	--	--	--	--	1,529.26
TOTAL	90,057.63	27,300.10	5,306.81	763.23	198.13	32.41	2.91	123,661.22
HARDWOODS:								
RED ALDER	4,570.31	969.41	--	--	--	--	--	5,539.71
BLACK COTTONWOOD	--	--	333.34	16.07	--	--	--	349.41
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	4,570.31	969.41	333.34	16.07	--	--	--	5,889.12
ALL SPECIES	94,627.93	28,269.50	5,640.15	779.30	198.14	32.42	2.91	129,550.34

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

Table 6 — Number of growing stock mortality trees per year on timberland by species and diameter class, Juneau unit, southeast coastal Alaska, 1970 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:								
SUBALPINE FIR	--	--	--	--	--	--	--	--
ALASKA-CEDAR	--	--	115.03	51.16	6.70	--	--	172.88
SITKA SPRUCE	--	3,093.86	423.73	57.01	64.54	--	--	3,639.14
LODGEPOLE PINE	--	--	--	--	--	--	--	--
WESTERN HEMLOCK	--	13,122.55	1,661.93	583.16	153.14	32.95	1.90	15,555.62
MOUNTAIN HEMLOCK	--	1,590.66	202.97	45.20	27.10	--	--	1,865.93
TOTAL	--	17,807.07	2,403.66	736.53	251.48	32.95	1.90	21,233.57
HARDWOODS:								
RED ALDER	--	219.55	--	--	--	--	--	219.55
BLACK COTTONWOOD	--	--	52.20	--	--	--	--	52.20
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	--	219.55	52.20	--	--	--	--	271.75
ALL SPECIES	--	18,026.62	2,455.86	736.52	251.47	32.95	1.90	21,505.32

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, Juneau unit, southeast coastal Alaska, 1970 1/

FOREST TYPE AND UNIT	SAWTIMBER		POLETIMBER	SEEDLINGS AND SAPLINGS	NONSTOCKED	ALL CLASSES
	OLD GROWTH	YOUNG GROWTH				
TRUE FIR: 2/						
FT^3	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FT^3/ACRE	--	--	--	--	--	--
HEMLOCK-SPRUCE:						
FT^3	1,230,105,723	120,635,486	--	0	--	1,350,741,209
ACRES	196,570	20,312	--	4,789	--	221,671
FT^3/ACRE	6,258	5,939	--	0	--	6,093
WESTERN REDCEDAR:						
FT^3	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FT^3/ACRE	--	--	--	--	--	--
SITKA SPRUCE:						
FT^3	447,082,944	304,424,675	--	6,927,070	--	758,252,689
ACRES	61,013	47,388	--	13,032	--	121,432
FT^3/ACRE	7,328	6,420	--	532	--	6,244
MOUNTAIN HEMLOCK:						
FT^3	1,266,001,984	--	--	--	--	1,266,001,984
ACRES	250,480	--	--	--	--	250,480
FT^3/ACRE	5,054	--	--	--	--	5,054
WESTERN HEMLOCK:						
FT^3	4,595,909,011	--	29,760,372	0	--	4,625,669,383
ACRES	669,122	--	6,762	4,789	--	680,673
FT^3/ACRE	6,869	--	4,401	0	--	6,796
ALASKA-CEDAR:						
FT^3	264,103,421	--	--	--	--	264,103,421
ACRES	47,379	--	--	--	--	47,379
FT^3/ACRE	5,574	--	--	--	--	5,574
LODGEPOLE PINE:						
FT^3	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FT^3/ACRE	--	--	--	--	--	--
RED ALDER:						
FT^3	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FT^3/ACRE	--	--	--	--	--	--
BLACK COTTONWOOD:						
FT^3	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FT^3/ACRE	--	--	--	--	--	--
ALL TYPES:						
FT^3	7,803,203,083	424,878,162	29,760,372	6,927,070	--	8,264,768,687
ACRES	1,224,563	67,700	6,762	22,610	--	1,321,636
FT^3/ACRE	6,372	6,276	4,401	306	--	6,253

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Subalpine fir and Pacific silver fir.

Table 8 — Net volume of sawtimber on timberland, in board feet International 1/4-inch rule and volume per acre, by forest type and stand size class, Juneau unit, southeast coastal Alaska, 1970 1/

FOREST TYPE AND UNIT	SAWTIMBER		POLETIMBER	SEEDLINGS AND SAPLINGS	NONSTOCKED	ALL CLASSES
	OLD GROWTH	YOUNG GROWTH				
TRUE FIR: 2/						
FBM 3/	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FBM/ACRE	--	--	--	--	--	--
HEMLOCK-SPRUCE:						
FBM	5,678,273,984	468,005,088	--	0	--	6,146,279,072
ACRES	196,570	20,312	--	4,789	--	221,671
FBM/ACRE	28,887	23,041	--	0	--	27,727
WESTERN REDCEDAR:						
FBM	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FBM/ACRE	--	--	--	--	--	--
SITKA SPRUCE:						
FBM	2,174,802,330	1,490,184,083	--	7,803,933	--	3,672,790,346
ACRES	61,013	47,388	--	13,032	--	121,432
FBM/ACRE	35,645	31,446	--	599	--	30,246
MOUNTAIN HEMLOCK:						
FBM	5,257,046,950	--	--	--	--	5,257,046,950
ACRES	250,480	--	--	--	--	250,480
FBM/ACRE	20,988	--	--	--	--	20,988
WESTERN HEMLOCK:						
FBM	20,776,588,883	--	19,730,518	0	--	20,796,319,401
ACRES	669,122	--	6,762	4,789	--	680,673
FBM/ACRE	31,051	--	2,918	0	--	30,553
ALASKA-CEDAR:						
FBM	923,450,534	--	--	--	--	923,450,534
ACRES	47,379	--	--	--	--	47,379
FBM/ACRE	19,491	--	--	--	--	19,491
LODGEPOLE PINE:						
FBM	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FBM/ACRE	--	--	--	--	--	--
RED ALDER:						
FBM	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FBM/ACRE	--	--	--	--	--	--
BLACK COTTONWOOD:						
FBM	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FBM/ACRE	--	--	--	--	--	--
ALL TYPES:						
FBM	34,810,162,682	1,958,189,171	19,730,518	7,803,933	--	36,795,886,304
ACRES	1,224,563	67,700	6,762	22,610	--	1,321,636
FBM/ACRE	28,427	28,925	2,918	345	--	27,841

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Subalpine fir and Pacific silver fir.

3/ FBM = 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, Juneau unit, southeast coastal Alaska, 1970 1/

CLASS OF TIMBER	SOFTWOODS	HARDWOODS	ALL SPECIES
		MILLION CUBIC FEET	
SAWTIMBER TREES:			
SAW-LOG PORTION	7,415.37	14.99	7,430.36
UPPER-STEM PORTION	203.27	0.52	203.79
TOTAL	7,618.64	15.51	7,634.15
POLETIMBER TREES	629.93	0.70	630.62
ALL GROWING STOCK	8,248.56	16.21	8,264.77
ROUGH TREES	4.68	--	4.68
ROTTEN TREES	224.94	0.80	225.74
SALVABLE DEAD TREES	159.08	--	159.08
ALL TIMBER	8,637.27	17.00	8,654.27

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

Table 10 — Net volume of sawtimber, International 1/4-inch rule, on timberland by species and diameter class, Juneau unit, southeast coastal Alaska, 1970 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:						
SUBALPINE FIR	--	--	--	--	--	--
ALASKA-CEDAR	503.28	311.98	53.63	4.46	--	873.34
SITKA SPRUCE	2,679.16	3,944.10	2,673.01	1,056.27	457.78	10,810.34
LODGEPOLE PINE	--	--	--	--	--	--
WESTERN HEMLOCK	6,884.40	8,082.32	4,001.11	989.21	115.80	20,072.84
MOUNTAIN HEMLOCK	2,273.34	2,132.08	488.17	76.04	--	4,969.63
TOTAL	12,340.19	14,470.48	7,215.93	2,125.98	573.58	36,726.15
HARDWOODS:						
RED ALDER	15.77	--	--	--	--	15.77
BLACK COTTONWOOD	48.52	5.45	--	--	--	53.97
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	64.29	5.45	--	--	--	69.74
ALL SPECIES	12,404.48	14,475.93	7,215.93	2,125.98	573.58	36,795.89

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, Juneau unit, southeast coastal Alaska, 1970 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:						
SUBALPINE FIR	--	--	--	--	--	--
ALASKA-CEDAR	503.28	311.98	53.63	4.46	--	873.34
SITKA SPRUCE	1,939.82	3,385.60	2,495.80	1,001.11	450.68	9,273.01
LODGEPOLE PINE	--	--	--	--	--	--
WESTERN HEMLOCK	6,634.11	8,049.58	3,933.35	962.93	115.80	19,695.77
MOUNTAIN HEMLOCK	2,255.99	2,132.08	488.17	76.04	--	4,952.28
TOTAL	11,333.20	13,879.23	6,970.94	2,044.54	566.48	34,794.40
HARDWOODS:						
RED ALDER	15.77	--	--	--	--	15.77
BLACK COTTONWOOD	--	--	--	--	--	--
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	15.77	--	--	--	--	15.77
ALL SPECIES	11,348.97	13,879.23	6,970.94	2,044.54	566.48	34,810.17

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, Juneau unit, southeast coastal Alaska, 1970 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:						
SUBALPINE FIR	--	--	--	--	--	--
ALASKA-CEDAR	--	--	--	--	--	--
SITKA SPRUCE	739.34	558.51	177.22	55.16	7.10	1,537.33
LODGEPOLE PINE	--	--	--	--	--	--
WESTERN HEMLOCK	250.29	32.74	67.77	26.28	--	377.08
MOUNTAIN HEMLOCK	17.35	--	--	--	--	17.35
TOTAL	1,006.98	591.25	244.98	81.44	7.10	1,931.75
HARDWOODS:						
RED ALDER	--	--	--	--	--	--
BLACK COTTONWOOD	48.52	5.45	--	--	--	53.97
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	48.52	5.45	--	--	--	53.97
ALL SPECIES	1,055.51	596.70	244.98	81.44	7.10	1,985.72

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 feet, on timberland by species and diameter class, Juneau unit, southeast coastal Alaska, 1970 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:							
SUBALPINE FIR	2.71	--	--	--	--	--	2.71
ALASKA-CEDAR	47.20	139.23	73.61	12.53	0.86	--	273.43
SITKA SPRUCE	91.67	571.00	715.84	466.67	181.08	78.64	2,104.89
LODGEPOLE PINE	--	--	--	--	--	--	--
WESTERN HEMLOCK	371.19	1,513.05	1,676.70	833.14	204.44	25.91	4,624.42
MOUNTAIN HEMLOCK	117.14	528.63	468.72	110.83	17.80	--	1,243.11
TOTAL	629.92	2,751.92	2,934.85	1,423.16	404.16	104.55	8,248.56
HARDWOODS:							
RED ALDER	0.70	3.53	--	--	--	--	4.23
BLACK COTTONWOOD	--	10.85	1.12	--	--	--	11.98
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	0.70	14.38	1.12	--	--	--	16.21
ALL SPECIES	630.62	2,766.30	2,935.97	1,423.16	404.16	104.55	8,264.77

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, Juneau unit, southeast coastal Alaska, 1970 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:							
SUBALPINE FIR	--	--	--	--	--	--	--
ALASKA-CEDAR	47.20	139.23	73.61	12.53	0.86	--	273.43
SITKA SPRUCE	58.61	432.13	622.33	434.28	171.66	77.30	1,796.31
LODGEPOLE PINE	--	--	--	--	--	--	--
WESTERN HEMLOCK	319.46	1,460.59	1,669.64	817.88	198.95	25.91	4,492.43
MOUNTAIN HEMLOCK	115.43	524.03	468.72	110.83	17.80	--	1,236.80
TOTAL	540.71	2,555.99	2,834.29	1,375.51	389.26	103.21	7,798.97
HARDWOODS:							
RED ALDER	0.70	3.53	--	--	--	--	4.23
BLACK COTTONWOOD	--	--	--	--	--	--	--
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	0.70	3.53	--	--	--	--	4.23
ALL SPECIES	541.41	2,559.52	2,834.29	1,375.51	389.26	103.21	7,803.20

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

Table 15 — Net volume of young growth, cubic feet, on timberland by species and diameter class, Juneau unit, southeast coastal Alaska, 1970 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:							
SUBALPINE FIR	2.71	--	--	--	--	--	2.71
ALASKA-CEDAR	--	--	--	--	--	--	--
SITKA SPRUCE	33.06	138.87	93.51	32.39	9.42	1.34	308.58
LODGEPOLE PINE	--	--	--	--	--	--	--
WESTERN HEMLOCK	51.73	52.46	7.06	15.26	5.49	--	131.99
MOUNTAIN HEMLOCK	1.71	4.60	--	--	--	--	6.31
TOTAL	89.21	195.93	100.56	47.65	14.90	1.34	449.59
HARDWOODS:							
RED ALDER	--	--	--	--	--	--	--
BLACK COTTONWOOD	--	10.85	1.12	--	--	--	11.98
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	--	10.85	1.12	--	--	--	11.98
ALL SPECIES	89.21	206.78	101.69	47.65	14.90	1.34	461.57

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 timberland by species and stand size class, Juneau unit, southeast coastal Alaska, 1970 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
SOFTWOODS:					
SUBALPINE FIR	--	--	6.12	--	6.12
ALASKA-CEDAR	--	--	--	485.75	485.75
SITKA SPRUCE	--	2/ -3.69	1,734.78	6,242.61	7,973.71
LODGEPOLE PINE	--	--	--	40.44	40.44
WESTERN HEMLOCK	--	650.55	1,852.58	2,007.68	4,510.81
MOUNTAIN HEMLOCK	--	--	--	507.70	507.70
TOTAL	--	646.86	3,593.47	9,284.18	13,524.41
HARDWOODS:					
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	-55.86	65.34	9.48
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	-55.86	65.34	9.48
ALL SPECIES	--	646.86	3,537.62	9,349.51	13,533.99

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, Juneau unit, southeast coastal Alaska, 1970 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
SOFTWOODS:					
SUBALPINE FIR	--	--	28.01	--	28.01
ALASKA-CEDAR	--	--	--	844.97	844.97
SITKA SPRUCE	--	116.86	8,043.39	38,328.73	46,488.98
LODGEPOLE PINE	--	--	--	161.45	161.45
WESTERN HEMLOCK	--	355.88	5,102.66	3,844.72	9,303.26
MOUNTAIN HEMLOCK	--	--	--	1,728.86	1,728.86
TOTAL	--	472.75	13,174.06	44,908.72	58,555.52
HARDWOODS:					
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	2/ -201.90	418.83	216.93
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	-201.90	418.83	216.93
ALL SPECIES	--	472.75	12,972.16	45,327.55	58,772.45

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, Juneau unit, southeast coastal Alaska, 1970 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
HEMLOCK-SPRUCE	--	--	244.58	69.53	314.11
SITKA SPRUCE	--	--	1,214.85	3,596.52	4,811.37
TRUE FIR 2/	--	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	646.86	2,078.19	5,683.46	8,408.51
ALASKA-CEDAR	--	--	--	--	--
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	646.86	3,537.62	9,349.51	13,533.99

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Subalpine fir and Pacific silver fir.

Table 19 — Net annual growth of sawtimber, International 1/4-inch rule, on timberland by forest type and stand size class, Juneau unit, southeast coastal Alaska, 1970 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
HEMLOCK-SPRUCE	--	--	1,286.32	1,686.56	2,972.88
SITKA SPRUCE	--	--	5,098.99	20,125.45	25,224.43
TRUE FIR 2/	--	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	472.75	6,586.85	23,515.54	30,575.14
ALASKA-CEDAR	--	--	--	--	--
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	472.75	12,972.16	45,327.55	58,772.45

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Subalpine fir and Pacific silver fir.

Table 20 — Average annual mortality of growing stock, cubic feet, on timberland by species and stand size class, Juneau unit, southeast coastal Alaska, 1970 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
SOFTWOODS:					
SUBALPINE FIR	--	--	--	--	--
ALASKA-CEDAR	--	--	--	547.95	547.95
SITKA SPRUCE	--	--	264.35	10,893.62	11,157.98
LODGEPOLE PINE	--	--	--	--	--
WESTERN HEMLOCK	--	40.18	164.89	25,895.11	26,100.17
MOUNTAIN HEMLOCK	--	--	--	--	--
TOTAL	--	40.18	429.24	37,336.68	37,806.10
HARDWOODS:					
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	110.71	--	110.71
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	110.71	--	110.71
ALL SPECIES	--	40.18	539.95	37,336.68	37,916.80

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 timberland by species and stand size class, Juneau unit, southeast coastal Alaska, 1970 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
SOFTWOODS:					
SUBALPINE FIR	--	--	--	--	--
ALASKA-CEDAR	--	--	--	1,966.77	1,966.77
SITKA SPRUCE	--	--	1,270.90	50,597.94	51,868.84
LODGEPOLE PINE	--	--	--	--	--
WESTERN HEMLOCK	--	64.60	271.97	120,301.22	120,637.79
MOUNTAIN HEMLOCK	--	--	--	--	--
TOTAL	--	64.60	1,542.87	172,865.93	174,473.40
HARDWOODS:					
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	536.63	--	536.63
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	536.63	--	536.63
ALL SPECIES	--	64.60	2,079.51	172,865.93	175,010.04

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, Juneau unit, southeast coastal Alaska, 1970 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
HEMLOCK-SPRUCE	--	--	260.33	8,805.16	9,065.49
SITKA SPRUCE	--	--	110.71	2,582.83	2,693.54
TRUE FIR 2/	--	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	40.18	168.91	25,948.68	26,157.78
ALASKA-CEDAR	--	--	--	--	--
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	40.18	539.95	37,336.68	37,916.80

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Subalpine fir and Pacific silver fir.

Table 23 — Average annual mortality of sawtimber, International 1/4-inch rule, on timberland by forest type and stand size class, Juneau unit, southeast coastal Alaska, 1970 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
HEMLOCK-SPRUCE	--	--	1,170.69	40,518.06	41,688.75
SITKA SPRUCE	--	--	536.63	11,624.57	12,161.20
TRUE FIR 2/	--	--	--	--	--
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	64.60	372.19	120,723.29	121,160.08
ALASKA-CEDAR	--	--	--	--	--
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	64.60	2,079.51	172,865.93	175,010.04

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

2/ Subalpine fir and Pacific silver fir.

Table 24 — Summary of timber harvest, Scribner and International 1/4-inch rules, in the Chatham and North Tongass working circles of the Tongass National Forest, southeast coastal Alaska, 1970-80

WORKING CIRCLE AND YEAR OF HARVEST	VOLUME CUT, INTERNATIONAL 1/4-INCH RULE	VOLUME CUT, SCRIBNER RULE, BUREAU SCALE 1/	VALUE
	- - THOUSAND BOARD FEET - -		DOLLARS
NORTH TONGASS:			
1970	2,974,062.60	2,520,259.60	$1,517,364.19
1971	2,700,787.70	2,288,682.90	1,621,128.19
1972	2,677,856.80	2,269,250.90	1,612,678.56
1973	2,766,105.10	2,344,033.70	1,700,122.04
CHATHAM:			
1974	1,103,448.10	935,076.40	571,006.82
1975	1,524,337.30	1,291,743.40	398,758.96
1976	1,680,595.90	1,424,159.00	598,060.06
1977	1,906,058.20	1,615,218.70	386,239.23
1978	1,482,783.10	1,256,529.80	186,210.70
1979	1,786,677.20	1,514,053.70	220,225.95
1980	1,632,575.30	1,383,465.70	207,111.05
TOTAL	22,235,287.30	18,842,473.80	9,018,905.75

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.)

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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 = 1.3994 cubic meters per hectare (m^3/ha)
1 square foot of basal area per acre = 0.2296 square meters 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 for the 1970 timber inventory of the Juneau unit, Alaska. Estimates for commercial forest land area total 1.3 million acres (535 000 ha) with a net growing stock volume of 8.3 billion cubic feet (234 million m^3), and annual net growth and mortality of 13.5 and 37.9 million cubic feet (0.4 and 1.1 million m^3), respectively.

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

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