United States
Department of
Agriculture

Forest Service

Pacific Northwest
Forest and Range
Experiment Station

Resource Bulletin
PNW-101
March 1983

Timber Resource Statistics for the Sitka Inventory Unit, Alaska, 1971

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Abstract

van Hees, Willem W.S.; LaBau, Vernon J. Timber resource statistics for the Sitka inventory unit, 1971. Resour. Bull. PNW-101. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station; 1983. 35 p.

This report summarizes a 1971 timber resource inventory of the Sitka unit in southeast Alaska. Estimates for timberland total 821,700 acres (332 500 ha) with 4.8 billion cubic feet (137.6 million m^3) of net growing stock volume. Annual net growth is estimated at -36.8 million cubic feet and mortality at 59.7 million cubic feet (-1.0 and 1.7 million m^3, respectively). Detailed tables of forest area, timber volume, growth, and mortality are presented.

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

Summary

This report for the 2.6-million-acre (1.0-million-ha) Sitka timber inventory unit is the second in a series of six reports for southeast Alaska. The Sitka inventory unit includes all of Chichagof and Baranof Islands. Except for cities, towns, and private in-holdings, the unit is entirely within the Tongass National Forest.

This is the first general reinventory of the forests in the Sitka unit, which were first inventoried in 1956. It is also the second remeasurement of the growth and mortality plots established in 1956; they were first remeasured in 1965.

Statistics on forest area, total gross and net timber volumes, and annual net growth and mortality statistics are presented from the 1971 timber resource inventory of the Sitka unit. Estimates for timberland total 821,700 acres (332 500 ha) with a net growing stock volume of 4.8 billion cubic feet (137.6 million m^3). Net annual growth and mortality are estimated at -36.8 and 59.7 million cubic feet (-1.0 and 1.7 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 50 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 Sitka inventory unit area:	2,571.8	1 040.8
With forest	1,665.5	674.0
With nonforest	893.0	361.4
With non-Census water	13.3	5.4
With Census water	34.9	14.1
Forested area:		
Timberland	821.7	332.5
Other forest land	843.8	341.5
Timberland composition:		
Old-growth sawtimber	751.9	304.3
Young-growth sawtimber	36.2	14.6
Poletimber	3.7	1.5
Seedlings and saplings, and nonstocked	29.9	12.1
Timberland forest type composition:		
Sitka spruce	94.3	38.2
Hemlock-spruce	161.1	65.2
Western hemlock	358.3	145.0
Mountain hemlock	127.0	51.4
Alaska-cedar	63.7	25.8
Lodgepole pine	1/	1/
Other softwoods	1/	1/
Red alder	12.5	5.1
Cottonwood-poplar	4.6	1.9
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 of timberland:				
Total gross volume	14,543.4	411.8	32,180.1	143.9
Total net volume	4,858.1	137.6	22,870.5	129.5
Annual net growth	-36.8	-1.0	-186.0	-.9
Annual net mortality	59.7	1.7	312.1	1.7

1/ No data were collected.

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

3/ Net volume, International ¼-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 2.6-million-acre (1.0-million-ha) Sitka timber inventory unit is the second in a series of six reports for southeast Alaska. The Sitka inventory unit lies between 56° and 58°30′ north latitude, and 134°30′ and 136°40′ west longitude in the panhandle of southeast Alaska and includes all of Chichagof and Baranof Islands (fig. 1). Except for cities, towns, and private in-holdings, the unit is entirely within the Tongass National Forest.

Soils of the Sitka unit are generally well drained and strongly acidic, causing only slight or moderate restrictions to tree growth. Predominant soil parent materials include graywacke, slate, schist, limestone, siltstone, gabbro, and dolomite. Additionally, much of Baranof Island and parts of Chichagof Island are covered by ancient deposits of volcanic ash. In places, this ash layer is over 3 feet (0.9 m) thick. Deposits of copper, nickel, and chromium have been found.

The dominant vegetative type is the coastal western hemlock-Sitka spruce forest with alpine tundra and barren ground appearing at elevations above 2,500-3,000 feet (750-900 m).

This is the first general reinventory of the forests in the Sitka unit, which were first inventoried in 1956. It is also the second remeasurement of the growth and mortality plots established in 1956; they were first remeasured in 1965.

Statistics on forest area, total gross and net timber volumes, and annual net growth and mortality statistics are presented for the 1971 timber resource inventory of the Sitka unit. Estimates for timberland total 821,700 acres (332 500 ha) with a net growing stock volume of 4.8 billion cubic feet (137.6 million m^3). Net annual growth and mortality are estimated at -36.8 and 59.7 million cubic feet (-1.0 and 1.7 million m^3), respectively.

Inventory Procedures

The estimates of area and timber volumes for the 1971 timber reinventory are based on a double sampling (2-phase) procedure (Bickford 1952). In the first phase of the sampling study, 11,925 photo points were systematically distributed over 1:15,840-scale aerial photographs, then interpreted. Each photo point was classified by land type , volume class, stand size, forest type, crown closure and operability class. Of the 11,925 photo plots, 189 were measured on the ground in the second phase of the sampling effort. Corrected area classifications and measurements of volume on these ground plots serve as the basis for the area and volume estimates presented in this report.

The estimates of growth and mortality volumes presented are from 1971 remeasurements of 33 timber inventory plots established in 1956. Growth information from the reinventory plots was based on increment borings; the mortality estimates were based on estimates 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 1971 estimates of growth and mortality was calibrated to coincide with the area found in the 1971 timber reinventory.

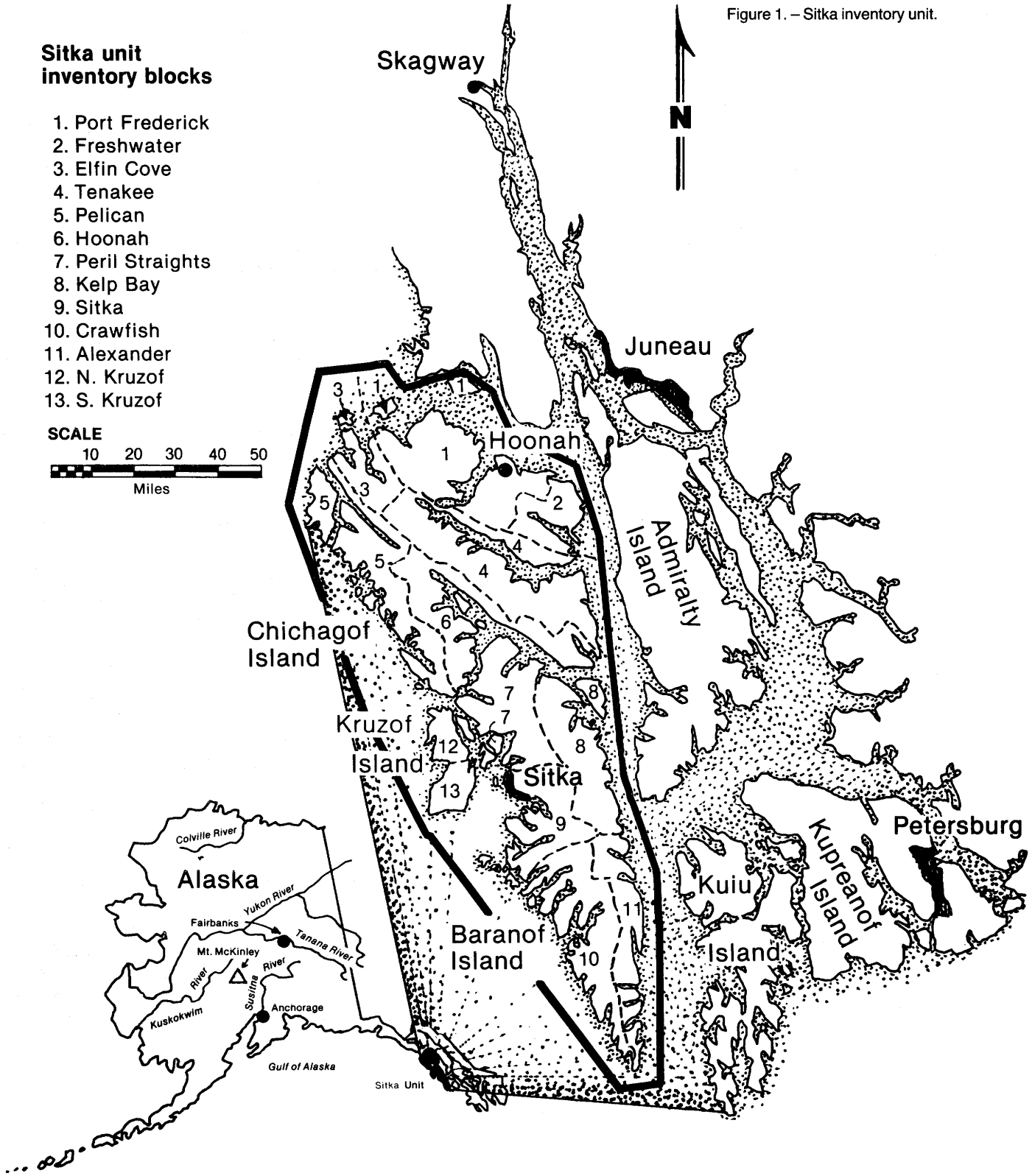

Figure 1. – Sitka inventory unit.

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 land status changes 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 were nearly complete at the end of 1982, but Alaska State selections will remain uncertain for the next 5-10 years. Fieldwork for our study was completed in 1971; we have delayed publishing the results, anticipating that shifts in land ownership would be resolved by now and the information gathered 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 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 Sitka area of the Tongass National Forest is provided in table 24. Although this area does 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 Sitka unit inventory, in 1971, 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	2.2	2.4, for 0.821 million acres
Other forest land, per million acres	10.0	2.6	2.8, for 0.844 million acres
Net volume:			
Timberland, per billion cubic feet	10.0	7.0	3.2, for 4.858 billion ft^3
Net growth:			
Timberland, per billion cubic feet	10.0	16.4	86.2, for -0.036 billion ft^3

For the Sitka inventory unit, we estimate 4.858 billion cubic feet of net growing stock volume ±3.2 percent, yielding 68-percent confidence limits of 4.703 and 5.013 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 total value of the parameter being estimated.

We met our design sampling error for timberland area (3 percent), forest land area (10 percent), and net volume on timberland (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 has decayed.

[5/] Terminology is 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.

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 (396 m) from operable timberland areas. (Also see operable timberland.)

International ¼-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, 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 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 (2.54 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 — 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 ¼-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) 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 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 foot (0.3 m).

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

Timberland — Forest land producing or capable of producing crops in 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 ¼-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 mertensiana* (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, Sitka unit, southeast coastal Alaska, 1971 1/

FOREST TYPE	TIMBERLAND	OTHER FOREST	ALL CLASSES
		THOUSAND ACRES	
SOFTWOODS:			
SITKA SPRUCE	94.35	63.14	157.49
HEMLOCK-SITKA SPRUCE	161.14	135.29	296.43
WESTERN HEMLOCK	358.35	166.86	525.21
MOUNTAIN HEMLOCK	126.99	162.35	289.34
ALASKA-CEDAR	63.71	289.09	352.80
LODGEPOLE PINE	--	27.06	27.06
OTHER SOFTWOODS	--	--	--
TOTAL	804.54	843.79	1,648.33
HARDWOODS:			
BLACK COTTONWOOD	4.59	--	4.59
RED ALDER	12.55	--	12.55
OTHER HARDWOODS	--	--	--
TOTAL	17.14	--	17.14
ALL TYPES	821.68	843.79	1,665.47

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, Sitka unit, southeast coastal Alaska, 1971 1/

LAND CLASS	PORT FREDERICK	FRESHWATER	ELFIN COVE	TENAKEE	PELICAN	HOONAH	PERIL STRAITS	NORTH KRUZOF	SOUTH KRUZOF	SITKA	KELP BAY	CRAWFISH	ALEXANDER	ALL BLOCKS
						ACRES								
TIMBERLAND:														
SEEDLING AND SAPLING, AND NONSTOCKED	4,245	--	--	--	--	4,245	16,979	4,409	--	--	--	--	--	29,878
POLETIMBER	--	--	--	--	--	--	--	--	--	3,714	--	--	--	3,714
SAWTIMBER VOLUME STRATA 2/														
8,000 to 20,000	31,758	21,887	4,588	40,708	22,683	31,937	4,510	4,588	13,765	13,765	4,510	31,758	8,997	235,454
20,001 to 30,000	40,575	40,669	4,588	27,084	22,582	22,503	31,859	4,588	8,817	8,918	9,098	22,763	13,499	257,543
30,001 to 50,000	62,738	13,320	4,409	53,356	13,405	22,137	22,582	17,908	4,502	13,499	22,316	8,910	9,091	268,173
50,001 OR MORE	8,911	9,005	--	8,997	--	--	--	--	--	--	--	--	--	26,913
TOTAL	148,227	84,881	13,585	130,145	58,670	80,822	75,930	31,493	27,084	39,896	35,924	63,431	31,587	821,675
OTHER FOREST LAND:														
ROCKY	--	--	--	--	--	--	--	--	--	4,510	4,510	18,039	9,019	36,078
LOW VOLUME 3/	18,039	9,019	--	22,627	27,058	27,215	9,019	4,510	9,019	9,098	--	36,156	4,510	176,270
MUSKEG FOREST	58,626	9,019	18,039	18,039	81,175	45,097	27,058	9,019	13,608	4,509	9,019	9,020	4,510	306,738
HIGH ELEVATION FOREST	13,529	9,019	18,039	54,116	27,058	27,058	36,078	4,510	--	27,058	40,587	18,039	13,529	288,620
RECURRENT SLIDE ZONE	18,039	4,510	--	--	--	--	--	4,509	--	--	--	4,510	4,510	36,078
OTHER NONPRODUCTIVE	--	--	--	--	--	--	--	--	--	--	--	--	--	--
TOTAL	108,233	31,567	36,078	94,782	135,291	99,370	72,155	22,548	22,627	45,175	54,116	85,764	36,078	843,784
NONFOREST:														
FARMS AND GRASSLANDS	9,020	--	--	--	--	--	--	--	--	--	--	--	--	9,020
ALDER SHRUBLAND	--	4,510	--	22,551	22,550	9,020	27,061	4,510	--	4,510	18,041	--	9,021	121,774
NON-ALDER SHRUBLAND	22,551	13,531	--	27,061	9,020	9,020	--	--	--	4,510	18,040	36,082	18,041	157,856
ALPINE MEADOW	31,571	--	18,041	40,591	45,102	27,061	18,041	--	--	4,510	27,061	31,571	13,530	257,079
MUSKEG MEADOW	4,510	--	--	4,510	27,062	4,510	9,020	4,510	9,021	9,020	--	--	--	72,163
URBAN AND OTHER	--	--	--	--	--	--	--	--	--	--	--	--	--	--
ALPINE ROCK	9,020	13,531	13,531	18,041	40,591	4,510	13,531	--	4,510	18,041	18,041	31,571	45,101	230,019
ICE AND SNOWFIELDS	--	--	--	--	--	--	--	--	--	9,020	31,572	--	--	45,102
TOTAL	76,672	31,572	31,572	112,754	148,835	54,121	67,653	9,020	13,531	49,611	112,755	99,224	85,693	893,013
NON-CENSUS WATER 4/	--	--	4,443	--	4,443	--	--	--	--	--	--	4,442	--	13,328
ALL LANDS	333,132	148,020	85,678	337,681	347,239	234,313	215,738	63,061	63,242	134,682	202,795	252,861	153,358	2,571,800

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 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, Sitka unit, southeast coastal Alaska, 1971 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:								
ALASKA-CEDAR	50,597.50	23,252.46	6,695.58	1,312.25	93.40	5.03	--	81,956.23
SITKA SPRUCE	244,316.72	33,033.58	6,380.68	2,834.23	1,097.34	312.64	118.59	288,093.79
LODGEPOLE PINE	--	--	--	--	--	--	--	--
WESTERN HEMLOCK	445,678.36	114,022.84	19,751.00	7,046.83	1,844.66	312.55	59.26	588,715.51
MOUNTAIN HEMLOCK	115,423.95	47,209.18	7,614.88	2,197.85	267.89	24.54	7.91	172,746.21
TOTAL	856,016.53	217,518.06	40,442.14	13,391.16	3,303.29	654.76	185.76	1,131,511.74
HARDWOODS:								
RED ALDER	11,675.10	5,897.75	410.88	17.43	--	--	--	18,001.17
BLACK COTTONWOOD	972.92	--	--	75.11	26.11	--	--	1,074.14
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	12,648.02	5,897.75	410.88	92.54	26.11	--	--	19,075.31
ALL SPECIES	868,664.56	223,415.81	40,853.03	13,483.72	3,329.40	654.76	185.76	1,150,587.04

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, Sitka unit, southeast coastal Alaska, 1971 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:								
ALASKA-CEDAR	50,597.50	23,252.47	6,679.80	1,303.17	93.40	5.03	--	81,931.37
SITKA SPRUCE	214,758.15	28,801.48	5,543.97	2,568.98	1,024.06	291.76	113.68	253,102.09
LODGEPOLE PINE	--	--	--	--	--	--	--	--
WESTERN HEMLOCK	392,953.80	109,278.53	18,723.81	6,951.48	1,840.99	312.55	59.26	530,120.41
MOUNTAIN HEMLOCK	113,006.43	45,515.27	7,432.29	2,185.51	264.67	24.54	7.91	168,436.61
TOTAL	771,315.88	206,847.75	38,379.87	13,009.14	3,223.12	633.88	180.85	1,033,590.48
HARDWOODS:								
RED ALDER	--	3,091.59	56.16	--	--	--	--	3,147.74
BLACK COTTONWOOD	--	--	--	--	--	--	--	--
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	--	3,091.59	56.16	--	--	--	--	3,147.74
ALL SPECIES	771,315.88	209,939.32	38,436.03	13,009.14	3,223.12	633.88	180.85	1,036,738.22

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, Sitka unit, southeast coastal Alaska, 1971 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:								
ALASKA-CEDAR	--	--	15.78	9.08	--	--	--	24.86
SITKA SPRUCE	29,558.57	4,232.10	836.71	265.25	73.28	20.88	4.91	34,991.70
LODGEPOLE PINE	--	--	--	--	--	--	--	--
WESTERN HEMLOCK	52,724.57	4,744.31	1,027.19	95.36	3.67	--	--	58,595.10
MOUNTAIN HEMLOCK	2,417.52	1,693.92	182.60	12.34	3.22	--	--	4,309.59
TOTAL	84,700.66	10,670.33	2,062.28	382.03	80.17	20.88	4.91	97,921.25
HARDWOODS:								
RED ALDER	11,675.10	2,806.16	354.73	17.44	--	--	--	14,853.42
BLACK COTTONWOOD	972.93	--	--	75.11	26.11	--	--	1,074.14
OTHER HARDWOODS	--	--	--	--	--	--	--	--
TOTAL	12,648.03	2,806.16	354.73	92.55	26.11	--	--	15,927.56
ALL SPECIES	97,348.68	13,476.50	2,417.00	474.58	106.28	20.88	4.91	113,848.82

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 stand size class and diameter class, Sitka unit, southeast coastal Alaska, 1971 1/

STAND SIZE CLASS	DIAMETER 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						
SAWTIMBER STANDS:							
YOUNG GROWTH	1,873.32	19.18	--	1.09	--	--	1,893.60
OLD GROWTH	8,080.12	245.87	178.73	31.33	20.86	--	8,556.93
POLETIMBER	247.60	--	--	--	--	--	247.60
SEEDLINGS AND SAPLINGS	--	--	--	--	--	--	--
NONSTOCKED	--	--	--	--	--	--	--
ALL CLASSES	10,201.04	265.06	178.73	32.43	20.86	--	10,698.13

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, Sitka unit, southeast coastal Alaska, 1971 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	1,024,288,678	--	--	521,610	0	1,024,810,288
ACRES	148,406	--	--	8,490	4,245	161,141
FT^3/ACRE	6,902	--	--	61	0	6,360
WESTERN REDCEDAR:						
FT^3	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FT^3/ACRE	--	--	--	--	--	--
SITKA SPRUCE:						
FT^3	432,321,971	109,634,795	--	47,160	--	542,003,926
ACRES	71,928	18,173	--	4,245	--	94,346
FT^3/ACRE	6,010	6,033	--	11	--	5,244
MOUNTAIN HEMLOCK:						
FT^3	631,582,797	--	--	--	--	631,582,797
ACRES	126,992	--	--	--	--	126,992
FT^3/ACRE	4,973	--	--	--	--	4,973
WESTERN HEMLOCK:						
FT^3	2,291,242,496	43,920,859	--	1,048,911	0	2,336,212,265
ACRES	340,879	8,817	--	4,409	4,245	358,348
FT^3/ACRE	6,722	4,981	--	238	0	6,519
ALASKA-CEDAR:						
FT^3	273,897,667	--	--	--	--	273,897,667
ACRES	63,712	--	--	--	--	63,712
FT^3/ACRE	4,299	--	--	--	--	4,299
LODGEPOLE PINE:						
FT^3	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FT^3/ACRE	--	--	--	--	--	--
RED ALDER:						
FT^3	--	24,238,446	1,805,615	0	--	26,044,062
ACRES	--	4,588	3,714	4,245	--	12,547
FT^3/ACRE	--	5,283	486	0	--	2,076
BLACK COTTONWOOD:						
FT^3	--	23,563,613	--	--	--	23,563,613
ACRES	--	4,588	--	--	--	4,588
FT^3/ACRE	--	5,136	--	--	--	5,136
ALL TYPES:						
FT^3	4,653,333,609	201,357,714	1,805,615	1,617,682	0	4,858,114,616
ACRES	751,917	36,167	3,714	21,388	8,490	821,675
FT^3/ACRE	6,189	5,567	486	76	0	5,912

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 ¼-inch rule and volume per acre, by forest type and stand size class, Sitka unit, southeast coastal Alaska, 1971[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	5,085,446,029	--	--	0	0	5,085,446,029
ACRES	148,406	--	--	8,490	4,245	161,141
FBM/ACRE	34,267	--	--	0	0	34,267
WESTERN REDCEDAR:						
FBM	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FBM/ACRE	--	--	--	--	--	--
SITKA SPRUCE:						
FBM	2,192,692,826	559,486,918	--	0	--	2,752,179,743
ACRES	71,928	18,173	--	4,245	--	94,346
FBM/ACRE	30,485	30,787	--	0	--	29,171
MOUNTAIN HEMLOCK:						
FBM	2,805,748,998	--	--	--	--	2,805,748,998
ACRES	126,992	--	--	--	--	126,992
FBM/ACRE	22,094	--	--	--	--	22,094
WESTERN HEMLOCK:						
FBM	10,735,220,582	184,652,546	--	0	0	10,919,873,128
ACRES	340,879	8,817	--	4,409	4,245	358,348
FBM/ACRE	31,493	20,943	--	0	0	30,472
ALASKA-CEDAR:						
FBM	1,033,802,880	--	--	--	--	1,033,802,880
ACRES	47,379	--	--	--	--	47,379
FBM/ACRE	21,820	--	--	--	--	21,820
LODGEPOLE PINE:						
FBM	--	--	--	--	--	--
ACRES	--	--	--	--	--	--
FBM/ACRE	--	--	--	--	--	--
RED ALDER:						
FBM	--	137,206,274	4,406,603	--	--	141,612,876
ACRES	--	4,588	3,714	--	--	12,547
FBM/ACRE	--	29,905	1,186	--	--	11,287
BLACK COTTONWOOD:						
FBM	--	131,852,800	--	--	--	131,852,800
ACRES	--	4,588	--	--	--	4,588
FBM/ACRE	--	28,739	--	--	--	28,739
ALL TYPES:						
FBM	21,852,911,315	1,013,198,537	4,406,603	--	--	22,870,513,312
ACRES	1,224,563	67,700	6,762	--	--	1,321,636
FBM/ACRE	17,845	14,966	652	--	--	17,305

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, Sitka unit, southeast coastal Alaska, 1971 1/

CLASS OF TIMBER	SOFTWOODS	HARDWOODS	ALL SPECIES
		MILLION CUBIC FEET	
SAWTIMBER TREES:			
SAW-LOG PORTION	4,434.58	25.60	4,460.17
UPPER-STEM PORTION	115.98	0.73	116.71
TOTAL	4,550.56	26.33	4,576.88
POLETIMBER TREES	280.48	0.75	281.23
ALL GROWING STOCK	4,831.04	27.08	4,858.11
ROUGH TREES	0.67	--	0.67
ROTTEN TREES	146.61	0.46	147.07
SALVABLE DEAD TREES	102.51	--	102.51
ALL TIMBER	5,080.83	27.54	5,108.36

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 ¼-inch rule, on timberland by species and diameter class, Sitka unit, southeast coastal Alaska, 1971 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
	THOUSAND BOARD FEET					
SOFTWOODS:						
ALASKA-CEDAR	579,666.61	371,987.60	46,693.61	5,809.77	--	1,004,157.58
SITKA SPRUCE	1,302,081.82	2,241,877.87	2,051,037.71	1,064,557.18	715,842.41	7,375,396.99
LODGEPOLE PINE	--	--	--	--	--	--
WESTERN HEMLOCK	3,702,820.50	4,732,600.10	2,334,475.52	682,155.06	173,463.58	11,625,514.77
MOUNTAIN HEMLOCK	1,191,646.86	1,189,080.47	294,048.98	43,312.64	15,647.65	2,733,736.61
TOTAL	6,594,496.68	8,535,546.04	4,726,255.82	1,630,109.98	904,953.64	22,738,805.95
HARDWOODS:						
RED ALDER	50,760.30	5,116.17	--	--	--	55,876.48
BLACK COTTONWOOD	--	38,275.06	37,562.33	--	--	75,837.39
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	50,760.30	40,948.06	37,562.33	--	--	131,713.87
ALL SPECIES	6,826,976.09	8,578,937.27	4,763,818.16	5,242,155.75	904,953.64	22,870,519.83

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 ¼-inch rule, on timberland by species and diameter class, Sitka unit, southeast coastal Alaska, 1971 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:						
ALASKA-CEDAR	577.69	370.41	46.69	5.81	--	1,000.60
SITKA SPRUCE	1,113.39	2,034.96	1,902.85	1,004.53	686.92	6,742.66
LODGEPOLE PINE	--	--	--	--	--	--
WESTERN HEMLOCK	3,541.67	4,679.71	2,331.20	682.16	173.46	11,408.19
MOUNTAIN HEMLOCK	1,173.80	1,175.55	288.38	43.31	15.65	2,696.69
TOTAL	6,406.55	8,260.62	4,569.13	1,735.81	876.03	21,848.15
HARDWOODS:						
RED ALDER	4.77	--	--	--	--	4.77
BLACK COTTONWOOD	--	--	--	--	--	--
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	4.77	--	--	--	--	4.77
ALL SPECIES	6,411.32	8,260.62	4,569.13	1,735.81	876.03	21,852.91

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 ¼-inch rule, on timberland by species and diameter class, Sitka unit, southeast coastal Alaska, 1971 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:						
ALASKA-CEDAR	1.97	1.58	--	--	--	3.55
SITKA SPRUCE	188.68	206.92	148.19	60.03	28.92	632.74
LODGEPOLE PINE	--	--	--	--	--	--
WESTERN HEMLOCK	161.16	52.89	3.27	--	--	217.32
MOUNTAIN HEMLOCK	17.85	13.53	5.66	--	--	37.04
TOTAL	369.66	274.92	157.13	60.03	28.92	890.66
HARDWOODS:						
RED ALDER	45.99	5.12	--	--	--	51.11
BLACK COTTONWOOD	--	38.28	37.56	--	--	75.84
OTHER HARDWOODS	--	--	--	--	--	--
TOTAL	45.99	43.39	37.56	--	--	126.95
ALL SPECIES	415.65	318.31	194.69	60.03	28.92	1,017.61

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, Sitka unit, southeast coastal Alaska, 1971 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:							
ALASKA-CEDAR	41.28	156.10	88.12	10.78	1.12	--	297.40
SITKA SPRUCE	42.71	269.99	404.80	350.84	176.10	121.63	1,366.07
LODGEPOLE PINE	--	--	--	--	--	--	--
WESTERN HEMLOCK	145.52	788.86	943.28	475.52	135.35	37.54	2,526.06
MOUNTAIN HEMLOCK	50.97	267.13	247.96	62.47	9.23	3.74	641.50
TOTAL	280.48	1,482.09	1,684.16	899.60	321.80	162.90	4,831.04
HARDWOODS:							
RED ALDER	0.75	11.34	1.17	--	--	--	13.26
BLACK COTTONWOOD	--	--	7.24	6.57	--	--	13.82
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	0.75	11.34	8.42	6.57	--	--	27.08
ALL SPECIES	281.23	1,493.43	1,692.57	906.18	321.80	162.90	4,858.12

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, Sitka unit, southeast coastal Alaska, 1971 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:							
ALASKA-CEDAR	41.28	155.60	87.69	10.78	1.12	--	296.47
SITKA SPRUCE	35.93	235.28	370.07	327.07	166.12	116.82	1,251.28
LODGEPOLE PINE	--	--	--	--	--	--	--
WESTERN HEMLOCK	138.02	755.37	932.21	474.70	135.35	37.54	2,473.18
MOUNTAIN HEMLOCK	48.67	262.81	245.60	61.25	9.23	3.74	631.29
TOTAL	263.90	1,409.06	1,635.56	873.79	311.82	158.09	4,652.22
HARDWOODS:							
RED ALDER	--	1.11	--	--	--	--	1.11
BLACK COTTONWOOD	--	--	--	--	--	--	--
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	--	1.11	--	--	--	--	1.11
ALL SPECIES	263.90	1,410.17	1,635.56	873.79	311.82	158.09	4,653.33

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, Sitka unit, southeast coastal Alaska, 1971 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
	THOUSAND CUBIC FEET						
SOFTWOODS:							
ALASKA-CEDAR	--	500.63	432.03	--	--	--	932.66
SITKA SPRUCE	6,783.01	34,718.90	34,725.52	23,775.17	9,980.41	4,809.18	114,792.18
LODGEPOLE PINE	--	--	--	--	--	--	--
WESTERN HEMLOCK	7,491.41	33,495.39	11,070.97	821.24	--	--	52,879.01
MOUNTAIN HEMLOCK	2,307.40	4,316.14	2,365.33	1,219.34	--	--	10,208.21
TOTAL	16,581.82	73,031.06	48,593.85	25,815.75	9,980.41	4,809.18	178,812.06
HARDWOODS:							
RED ALDER	751.92	10,227.38	1,171.00	--	--	--	12,150.30
BLACK COTTONWOOD	--	--	7,244.87	6,573.80	--	--	13,818.67
OTHER HARDWOODS	--	--	--	--	--	--	--
TOTAL	751.92	10,227.38	8,415.87	6,573.80	--	--	25,968.97
ALL SPECIES	17,333.73	83,258.44	57,009.72	32,389.55	9,980.41	4,809.18	204,781.03

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, Sitka unit, southeast coastal Alaska, 1971 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
SOFTWOODS:					
ALASKA-CEDAR	--	--	7.57	-249.22 2/	-241.64
SITKA SPRUCE	--	12.38	547.93	-9,458.36	-8,898.05
LODGEPOLE PINE	--	--	--	--	--
WESTERN HEMLOCK	--	150.21	621.16	-30,649.66	-29,878.29
MOUNTAIN HEMLOCK	--	--	--	2,396.37	2,396.37
TOTAL	--	162.59	1,176.66	-37,960.86	-36,621.61
HARDWOODS:					
RED ALDER	--	--	-178.91	--	-178.91
BLACK COTTONWOOD	--	--	28.73	--	28.73
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	-150.18	---	-150.18
ALL SPECIES	--	162.59	1,026.47	-37,960.86	-36,771.79

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 ¼-inch rule, on timberland by species and stand size class, Sitka unit, southeast coastal Alaska, 1971 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
SOFTWOODS:					
ALASKA-CEDAR	--	--	36.92	-1,823.78 2/	-1,786.86
SITKA SPRUCE	--	7.06	6,477.41	-66,778.09	-60,293.61
LODGEPOLE PINE	--	--	--	--	--
WESTERN HEMLOCK	--	546.81	4,171.53	-145,940.51	-141,222.16
MOUNTAIN HEMLOCK	--	--	--	17,467.85	17,467.85
TOTAL	--	553.87	10,685.86	-197,074.52	-185,834.79
HARDWOODS:					
RED ALDER	--	--	-432.06	--	-432.06
BLACK COTTONWOOD	--	--	238.09	--	238.09
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	-193.97	--	-193.97
ALL SPECIES	--	553.87	10,491.89	-197,074.52	-186,028.76

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

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

Table 18 — Net annual growth of growing stock, cubic feet, on timberland by forest type and stand size class, Sitka unit, southeast coastal Alaska, 1971 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
HEMLOCK-SPRUCE	--	162.59	337.45	3,434.24	3,934.28
SITKA SPRUCE	--	--	180.90	--	180.90
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	--	508.12	2/ -35,960.49	-35,452.37
ALASKA-CEDAR	--	--	--	-5,434.61	-5,434.61
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	162.59	1,026.47	-37,960.86	-36,771.79

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 ¼-inch rule, on timberland by forest type and stand size class, Sitka unit, southeast coastal Alaska, 1971 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
HEMLOCK-SPRUCE	--	553.87	4,840.89	13,013.56	18,408.31
SITKA SPRUCE	--	--	1,844.11	--	1,844.11
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	--	3,806.90	2/ -186,048.21	-182,241.31
ALASKA-CEDAR	--	--	--	-24,039.87	-24,039.87
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	553.87	10,491.89	-197,074.52	-186,028.76

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, Sitka unit, southeast coastal Alaska, 1971 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
SOFTWOODS:					
ALASKA-CEDAR	--	--	--	1,781.51	1,781.51
SITKA SPRUCE	--	--	581.71	18,327.14	18,908.84
LODGEPOLE PINE	--	--	--	--	--
WESTERN HEMLOCK	--	--	389.91	38,483.91	38,873.82
MOUNTAIN HEMLOCK	--	--	--	--	--
TOTAL	--	--	971.62	58,592.55	59,564.17
HARDWOODS:					
RED ALDER	--	--	118.34	--	118.34
BLACK COTTONWOOD	--	--	--	--	--
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	118.34	--	118.34
ALL SPECIES	--	--	1,089.96	58,592.55	59,682.51

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 ¼-inch rule, on timberland by species and stand size class, Sitka unit, southeast coastal Alaska, 1971 1/

SPECIES	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
SOFTWOODS:					
ALASKA-CEDAR	--	--	--	6,864.34	6,864.34
SITKA SPRUCE	--	--	2,548.44	111,665.35	114,213.78
LODGEPOLE PINE	--	--	--	--	--
WESTERN HEMLOCK	--	--	827.03	189,515.51	190,342.54
MOUNTAIN HEMLOCK	--	--	--	--	--
TOTAL	--	--	3,375.46	308,045.20	311,420.67
HARDWOODS:					
RED ALDER	--	--	674.16	--	674.16
BLACK COTTONWOOD	--	--	--	--	--
OTHER HARDWOODS	--	--	--	--	--
TOTAL	--	--	674.16	--	674.16
ALL SPECIES	--	--	4,049.62	308,045.20	312,094.83

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, Sitka unit, southeast coastal Alaska, 1971 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND CUBIC FEET		
HEMLOCK-SPRUCE	--	--	228.04	1,205.81	1,433.85
SITKA SPRUCE	--	--	490.54	--	490.54
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	--	371.38	49,830.91	50,202.29
ALASKA-CEDAR	--	--	--	7,555.83	7,555.83
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	--	1,089.96	58,592.55	59,682.51

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

Table 23 — Average annual mortality of sawtimber, International ¼-inch rule, on timberland by forest type and stand size class, Sitka unit, southeast coastal Alaska, 1971 1/

FOREST TYPE	SEEDLING AND SAPLING	POLETIMBER	YOUNG-GROWTH SAWTIMBER	OLD-GROWTH SAWTIMBER	ALL CLASSES
			THOUSAND BOARD FEET		
HEMLOCK-SPRUCE	--	--	23.66	6,892.10	6,915.76
SITKA SPRUCE	--	--	3,166.45	--	3,166.45
MOUNTAIN HEMLOCK	--	--	--	--	--
WESTERN HEMLOCK	--	--	855.51	267,142.96	268,002.46
ALASKA-CEDAR	--	--	--	34,010.15	34,010.15
LODGEPOLE PINE	--	--	--	--	--
RED ALDER	--	--	--	--	--
BLACK COTTONWOOD	--	--	--	--	--
ALL TYPES	--	--	4,049.62	308,045.20	312,094.83

Estimates are subject to sampling error.

-- = no data were collected.

1/ Totals may be off because of rounding.

Table 24 — Summary of timber harvest, Scribner and International ¼-inch rules, in the Sitka working circle of the Tongass National Forest, southeast coastal Alaska, 1971-80

YEAR OF HARVEST	VOLUME CUT, INTERNATIONAL 1/4-INCH RULE	VOLUME CUT, SCRIBNER RULE, BUREAU SCALE 1/
	- - THOUSAND BOARD FEET - -	
1971	58,612.23	49,522.35
1972	98,869.06	83,535.95
1973	96,987.72	81,946.38
1974	88,330.46	74,631.73
1975	77,788.87	65,724.98
1976	106,509.84	89,991.76
1977	104,669.17	88,436.55
1978	92,302.79	77,988.01
1979	100,957.41	85,300.43
1980	42,473.15	35,886.20
TOTAL	968,475.37	818,279.37

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 study.

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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 meter per hectare (m^2/ha)

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van Hees, Willem W.S.; LaBau, Vernon J. Timber resource statistics for the Sitka inventory unit, 1971. Resour. Bull. PNW-101. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station; 1983. 35 p.

This report summarizes a 1971 timber resource inventory of the Sitka unit in southeast Alaska. Estimates for timberland total 821,700 acres (332 500 ha) with 4.8 billion cubic feet (137.6 million m^3) of net growing stock volume. Annual net growth is estimated at -36.8 million cubic feet and mortality at 59.7 million cubic feet (-1.0 and 1.7 million m^3, respectively). Detailed tables of forest area, timber volume, growth, and mortality are presented.

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

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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