



United States  
Department of  
Agriculture

Forest Service

Pacific Northwest  
Forest and Range  
Experiment Station

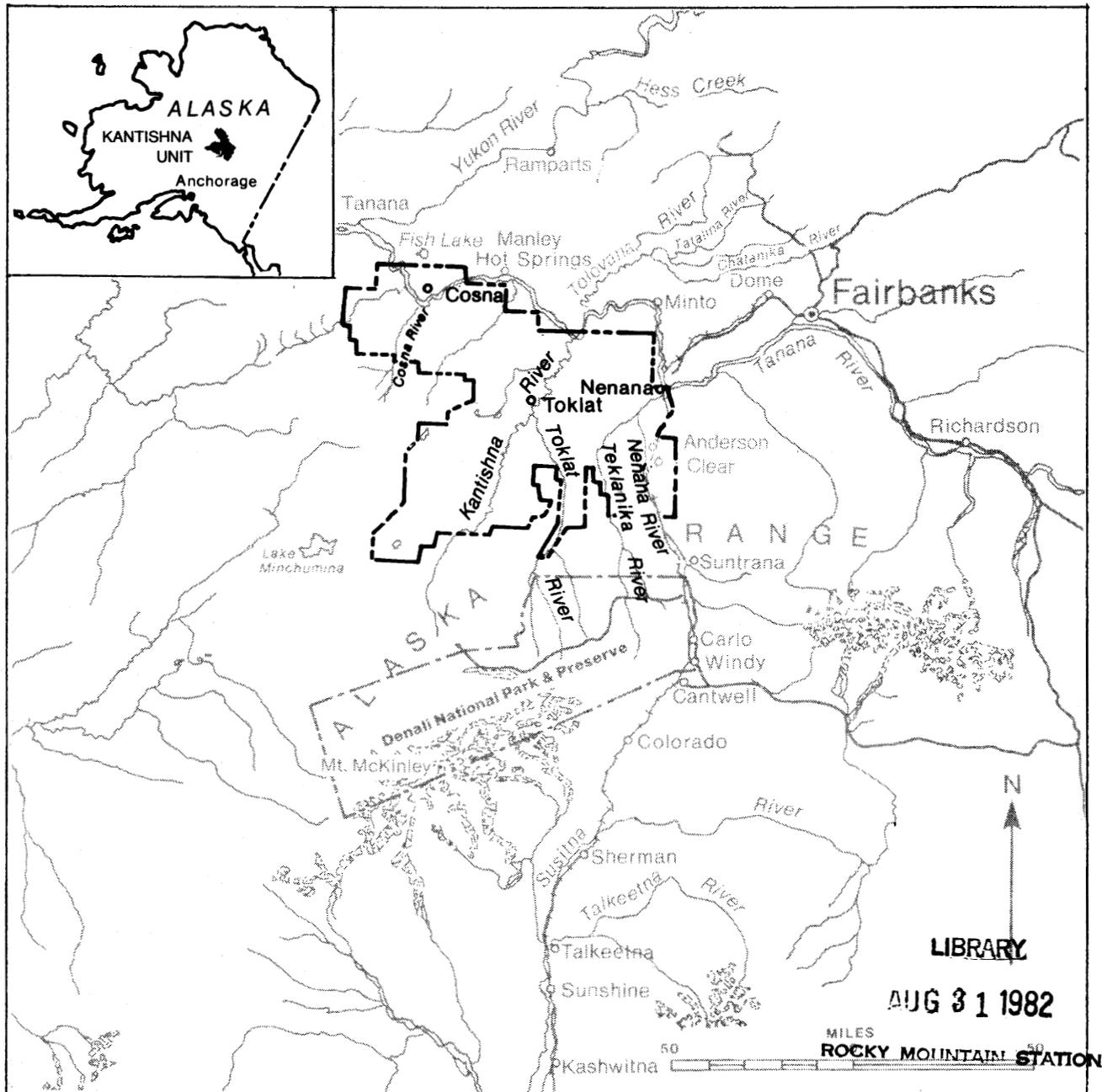
Resource Bulletin  
PNW-95

March 1982



# Timber Resource Statistics for the Kantishna Block, Tanana Inventory Unit, Alaska, 1973

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## Abstract

Hegg, Karl M. Timber resource statistics for the Kantishna block, Tanana inventory unit, Alaska, 1973. Resour. Bull. PNW-95. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Forest and Range Experiment Station; 1981. 32 p.

This report for the 2.9-million-acre Kantishna block is the second of four on the 14-million-acre Tanana Valley inventory unit. Comments are made on general landform, timber use, recreational potential, agricultural developments, forest defect, regeneration, and inventory methodology. Tables are provided for commercial forest land and for operable noncommercial forest land. Estimates for commercial forest land total 424,200 acres with 367,300,000 net cubic feet of growing stock volume. Estimates for the operable noncommercial class total 41,500 acres with 42,600,000 net cubic feet of growing stock volume.

**Keywords:** Forest surveys, timber inventory, timber resources, resources (forest), statistics (forest), Alaska (Tanana Valley).

## Summary

This report for the 2.9-million-acre Kantishna block is the second of four on the 14-million-acre Tanana inventory unit. The block is situated about 50 miles west-southwest of Fairbanks and immediately to the north of Denali National Park and Preserve. Statistics for the Fairbanks block are reported in Resource Bulletin PNW-59.

Work in the Kantishna block was completed in 1973 through the cooperative efforts of the U.S. Department of Agriculture, Forest Service; the U.S. Department of the Interior, Bureau of Land Management; and the Alaska Department of Natural Resources, Division of Lands. Estimates for forest area total 2,546,000 acres with commercial forests on 424,200 acres and a special class of 41,500 acres occupying operable noncommercial sites having a gross volume of 800 cubic feet or more per acre. Estimated growing stock volume is 367,300,000 cubic feet for commercial class and 42,600,000 cubic feet for the operable noncommercial class. Although nearly 70 percent of the commercial forest land is classed as hardwood types, the volume of softwood species makes up more than 50 percent of the total cubic-foot volume and 90 percent of the board-foot volume.

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## Highlights

	<i>Thousand acres</i>	<i>Thousand hectares</i>
Total Kantishna block area:	2,944.2	1 191.5
with forests	2,546.0	1 030.3
with nonforest	287.8	116.5
with noncensus water	72.6	29.4
with census water	37.8	15.3

### Forested area:

commercial forest land	424.2	171.7
noncommercial forest land:		
800 cubic feet or more per acre	41.5	16.8
less than 800 cubic feet per acre	2,080.3	841.9

### Commercial forest composition:

sawtimber	75.1	30.4
poletimber	188.5	76.3
seedlings and saplings	160.6	65.0
nonstocked	0	0

### Volumes on commercial forest land:

	<i>Thousand cubic feet<sup>1</sup></i>	<i>Thousand cubic meters<sup>1</sup></i>	<i>Thousand board feet<sup>2</sup></i>	<i>Thousand cubic meters<sup>3</sup></i>
Total gross volume	380,025.2	10 761.1	912,610.0	4 694.4
Total net volume	367,256.2	10 399.5	892,274.3	4 599.5
Annual net growth	9,902.9	280.4	27,916.5	50.7
Annual net mortality	1,479.0	41.9	4,766.5	21.9

<sup>1</sup> Volume of roundwood in live trees 5.0-inch d.b.h. and larger.

<sup>2</sup> Net volume, International 1/4-inch rule.

<sup>3</sup> Volume of roundwood for softwood trees 9.0-inch d.b.h. and larger and for hardwood trees 11.0-inch d.b.h. and larger.

## Introduction

This resource bulletin reports on the first intensive inventory of that portion of the Tanana River Valley west of Nenana, Alaska and including the area drained by the Kantishna River (fig. 1).

Preparations for the Tanana inventory began in 1968 when a cooperatively funded contract was let to obtain aerial photography of 11.3 million acres of the Tanana River Valley, which, with 2.3 million acres previously photographed in the Fairbanks area, make up the 13.6-million-acre Tanana inventory unit. Cooperators were the Economic Development Administration (EDA), U.S. Department of Commerce; the Bureau of Indian Affairs (BIA) and Bureau of Land Management (BLM), U.S. Department of the Interior; and the Alaska Department of Natural Resources Division of Lands (DNR), State of Alaska. The original intent was to inventory the valley as a unit, but poor flying weather and smoke haze slowed the photo project so "blocks" within the Tanana unit have been inventoried as photos became available.

This report, the second of four, is the Kantishna block, inventoried in 1973. The first report, for the Fairbanks block, was published several years ago (Hegg 1975b). Reports on inventories of the two other blocks, upper Tanana and Wood-Salcha, will be published when the analyses are completed.

Work on the Kantishna block began in 1972 with the classifying of 10,772 one-acre photo points by land type<sup>4</sup>, forest type, and volume class. Photo interpretation, ownership determination, and fieldwork preparation and completion were a cooperative effort of DNR, BLM, and the Forestry Sciences Laboratory (Anchorage) of the Pacific Northwest Forest and Range Experiment Station. Supervision and editing of plot records were done by the Forestry Sciences Laboratory. Data processing was handled by the Pacific Northwest Forest and Range Experiment Station in Portland.

<sup>4</sup> For definition of this term and others, see the section "Terminology."

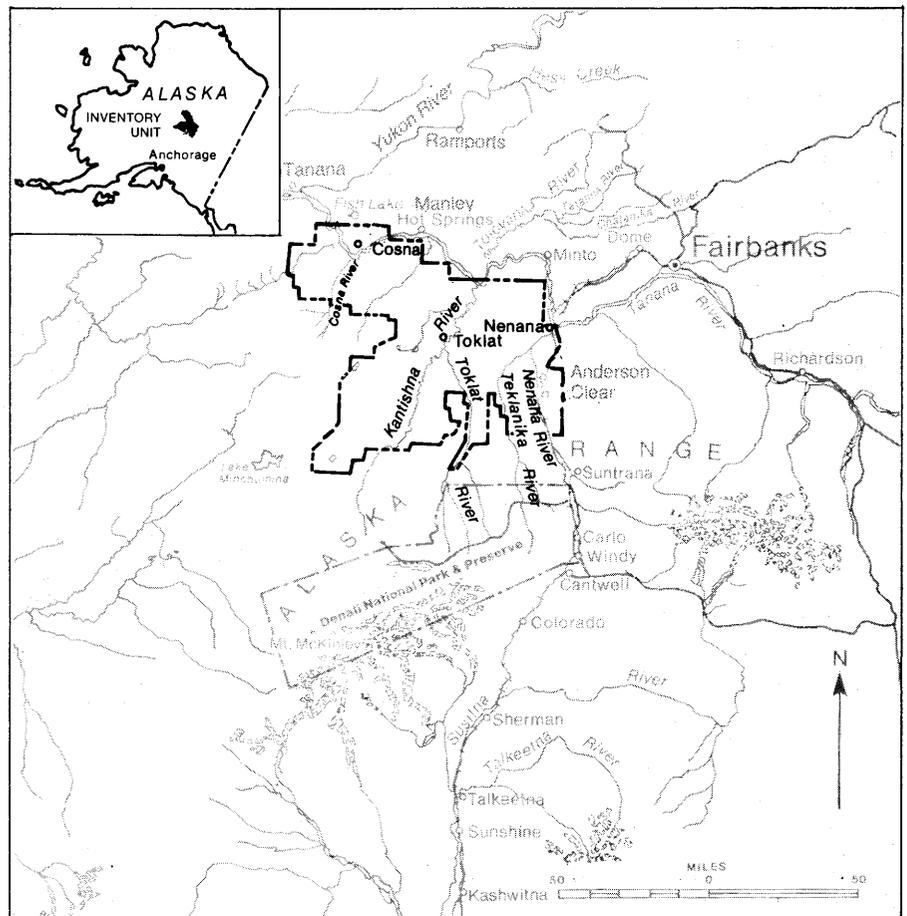


Figure 1. — Kantishna inventory unit.

Renewable Resources Evaluation,<sup>5</sup> authorized by the McSweeney-McNary Act in 1928 and extended to Alaska in 1954, is a nationwide effort to obtain information on forest lands — their extent, condition, volume, growth, quality, and depletion. The first inventories of interior Alaska were begun in 1956 and completed in 1962 (Hutchison 1967). These were extensive inventories, and subsequently, areas with concentrations of commercial forest land have been defined for more intensive inventory. Areas

<sup>5</sup> Renewable Resources Evaluation was originally named Forest Survey. The name was officially changed in 1975.

where intensive inventories have been conducted and for which reports are available are: Susitna Valley (Hegg 1970), Koyukuk River (Hegg 1974), Copper River (Hegg 1975a), Tanana unit, Fairbanks block (Hegg 1975b), Tuxedni Bay (Hegg 1979), Kuskokwim River (Hegg 1980), and the Norton Bay Indian Reservation.<sup>6</sup>

The factual data and discussions in this report on forest area, location, condition, volume, growth, and regeneration relate to the supply of wood available for local, regional and national needs. These data are presented for the use of State planners, legislators, land and forest managers, forest industry and other users of forest inventory data.

<sup>6</sup> Office report on file at the Bureau of Indian Affairs, Juneau, Alaska; 1973.

## Observations

### Area and Location

The Kantishna block (see fig. 1) lies west of the Anchorage-Fairbanks highway and south of the Tanana River. It includes lands drained by portions of the Tanana, Nenana, Teklanika, Kantishna, and Cosna Rivers. Geographically it lies within 64° and 65° north latitude, and 149° and 152° west longitude. Access to the block is by river, the Alaska railroad, and the Anchorage-Fairbanks (Parks) highway (which constitutes the eastern boundary of the block).

Poor drainage or excess drainage seems characteristic for much of the area. The block lies immediately north of Denali National Park and Preserve and the outwash from the Park's many glaciers produces sterile, gravelly soils or poorly drained areas marked with small ponds, lakes, and muskegs.

In the northeast section of this block, sand and silt from the Tanana River has been reworked by the prevailing winds to create extensive areas of overly well-drained dunes. Some commercial forest land was found in the dune area, but it was generally occupied by poorly stocked, non-commercial stands of white spruce and black spruce. Of 28 plot locations checked in the dune area, only 8 were classified as commercial forest.

### Defect

Nearly 90 percent of the hardwood stands in the Kantishna block are less than 80 years old. Consequently, the defect in these young stands was estimated at only 5.8 percent of the gross volume. This is about the same proportion as that estimated for the Fairbanks block (Hegg 1975b). In contrast, the defect in older hardwood stands in the Susitna Valley is estimated at about 20 percent (Hegg 1970).

Defect in softwoods is also fairly low, 1.3 percent of the gross volume, and is close to the 2-3 percent found in other areas of the State.



Figure 2. — The most productive forests are restricted to the better drained soils along rivers like the Cosna.

### Regeneration

No nonstocked areas were identified in the Kantishna block although 48,000 acres were classed as poorly stocked. This does not, however, give an accurate picture of stand conditions. Regeneration was adequate, but browse damage caused by snowshoe hare was moderate to severe on nearly all white spruce and black spruce seedlings. Although most of these seedlings will survive, their form development will definitely be impaired. The hare population apparently reached its highest concentration adjacent to the rivers in the Kantishna block; subsequent field observations in two other Tanana blocks noted only scattered occurrence of hare browsing damage.

### Forest Uses

Less than 20 percent of the total area of the Kantishna block is occupied by commercial and operable noncommercial forest land with most of this acreage concentrated along the Tanana, Kantishna, and Nenana Rivers. These rivers constitute the chief mode of transportation in the general area since the only surface transport is the Alaska railroad and the Anchorage-Fairbanks highway along the eastern boundary of this 50-mile-square block. Until greater use is made of water transport and winter roads, the timber in the block should be considered inaccessible. The exception is the timber within reach of Nenana, the main population center in the block and location of an operating sawmill that produces houselogs and lumber. Sustained production from this mill may be feasible once transport problems are solved and land ownership stabilizes with the settlement of the Alaska Native Land Claims Act.

The potential for recreation in the Kantishna block is limited only by access — which is either by plane or riverboat. The area is within 1-hour flying time from Fairbanks, so its lakes are within range of recreationists. Many of the lakes are well known for good fishing, and a few have semipermanent camps. Numerous clearwater streams drain the area; one in particular, the Cosna, has good fishing, abundant wildlife, and picturesque scenery (figs. 2, 3, 4). The Cosna is also the access to an area recently homesteaded.

A report by the Alaska Rural Development Council (1974) indicates that a major portion of the Kantishna block may have agricultural potential. An area just west of Nenana, which by Renewable Resources Evaluation (RRE) standards supports mostly noncommercial forest stands, is being studied in particular. If the conclusions of the study are favorable, considerable acreage could be converted to agricultural production.

## Inventory Procedures



The estimates of area and timber volumes are based on a double sampling procedure (Bickford 1952). Enough 1-acre points to satisfy specific levels of statistical precision were uniformly distributed on aerial photographs. Each of these points was classified by land type, forest type, and volume strata. A subsample was then drawn from all land types and reexamined on the photos. All subsample points originally classified as commercial forest land as well as any other points questionably classified were visited on the ground.

For the Kantishna block, we interpreted 10,772 photo points and reexamined 691 noncommercial and nonforest points. This reexamination was equivalent to a ground check and yielded 23 questionable points which, with the 228 commercial forest and operable noncommercial points, totaled 251 locations actually checked on the ground. The ground plot was located at the exact point sampled on the photo. At each ground location a 10-point cluster of plots was measured.<sup>7</sup> A 40 basal-area factor gage was used to select sample trees at each point for detailed measurements of size and vigor.



Figure 3. — Peaceful scenes are numerous on the Cosna River.

Figure 4. — In addition to the moose cow and calf seen in this photo, the area is also inhabited by waterfowl, bear, and wolverine.

<sup>7</sup> Study plan and field manual are on file at the Forestry Sciences Laboratory, 2221 E. Northern Lights Blvd., Anchorage, AK 99504.

## Reliability of Inventory Data

Through data processing procedures, the total sample and the individual tree volumes were expanded to obtain the estimates of the data needed or specified for area and volume. The tables showing the estimates, however, depart from the standard RRE tables with addition of a noncommercial forest category called "operable." During the initial inventory of interior Alaska, we found that much noncommercial forest land had a relatively high per-acre volume. When more intensive inventories were begun in the mid-1960's, we and our cooperators agreed that some of this noncommercial strata had potential value as a commercial wood supply. By extrapolation, from cutting minimums of 3 cords per acre used in the Lake States and Canada, we established 9 cords or 800 cubic feet per acre as a prudent level for Alaska. This threefold increase in the minimum economic operating level should help compensate for the higher production and shipping costs in Alaska.

The operable noncommercial areas presently have more than 800 gross cubic feet per acre in poletimber and sawtimber trees. The area and volume in this classification, although considered adequate for some cutting operations, should not be included in allowable cut computations. Future studies may show, through logging or other silvicultural practices, if these marginal sites can be managed as commercial forest land. None of the reported areas and volumes (whether classed as commercial or other) should be used in any calculation of an allowable cut without consideration of possible management and land use alternatives.

The reliability of the inventory is expressed in terms of relative sampling errors at the 68-percent confidence level.

	<u>Design sampling error</u>	<u>Sampling error achieved</u>	<u>Sampling error of total area or volume reported</u>
	..... <i>Percent</i> .....		
Area:			
commercial forest land per million acres	3.0	4.0	± 6.0
noncommercial forest land per million acres	10.0	6.0	± 4.0
Volume:			
commercial forest land per billion cubic feet	6.0	5.0	± 8.0
commercial forest land growth (gross) per billion cubic feet	5.0	1.0	± 11.0

For the Kantishna block, we report 367.3 million cubic feet of growing stock volume, ± 8.0 percent. This means that if repeated samples are taken of this population, the chances are two in three that the true total volume is between 337.9 and 396.7 million cubic feet. We slightly exceeded our design sampling error for commercial forest land area (3.0 percent per million acres) and met the design error (6.0 percent per million acres) for commercial forest land volume.

## Terminology<sup>8</sup>

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

**Area condition class** — Area condition class provides a general stratification of commercial forest land by management opportunity class as indicated by the stocking or area controlled by tree and cover class.

### Area condition classification code —

- 10 Areas 100 percent or more stocked with desirable trees and not overstocked. Stands in this category generally do not require any treatment at present to maintain high level of growth.
- 20 Areas 100 percent or more stocked with desirable trees and overstocked. Stands in this category need a treatment such as thinning to produce maximum levels of growth of desirable trees.
- 30 Areas 60 to 100 percent stocked with desirable trees, and with less than 30 percent of the area controlled by acceptable growing stock trees, cull trees, inhibiting vegetation, slash, or nonstockable conditions. Stands in this category generally have conditions favorable for natural improvement of stocking without special treatment.
- 40 Areas 60 to 100 percent stocked with desirable trees and with 30 percent or more of the area controlled by other trees (or overstocked areas) or conditions that ordinarily prevent occupancy by desirable trees. Stands in this category generally have little prospect for improvement in desirable tree stocking without special treatment such as thinning, cull tree removal, etc.

50 Areas less than 60 percent stocked with desirable trees but with 100 percent or more stocking with growing stock trees. Stands in this category generally have little prospect for improved desirable tree stocking without special treatment. Stands almost to rotation age would usually not be treated.

60 Areas less than 60 percent stocked with desirable trees but with 60- to 100-percent stocking with growing stock trees. Stands in this category generally have little prospect for improved desirable tree stocking without special treatment such as timber stand improvement or planting.

70 Areas less than 60 percent stocked with desirable trees and with less than 60-percent stocking with growing stock trees. Stands in this category generally have little prospect for improved desirable tree or growing stock stocking without treatment such as site preparation and regeneration, etc.

**Commercial species** — Trees presently or prospectively suitable for industrial products.

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

**Cull trees** — Live trees of sawtimber or poletimber size unmerchantable for saw logs now or prospectively because of defect, rot, or species.

**Rough trees:** Live trees of 5.0-inch d.b.h. and larger that do not contain a saw log now or prospectively, primarily because of roughness, poor form, or because they are a non-commercial species.

**Rotten trees:** Live trees of 5.0-inch d.b.h. and larger that do not contain a saw log or prospectively, primarily because of rot.

**Forest land** — Land at least 16.7 percent stocked by forest trees of any size, or formerly having such tree cover, and not currently developed for nonforest use.

**Commercial forest land:** Forest land producing or capable of producing crops of industrial wood and not withdrawn from timber utilization. Areas qualifying as commercial forest land have the capability of producing in excess of 20 cubic feet per acre per year of industrial wood under management.

**Noncommercial forest land:** Unproductive forest land incapable of yielding crops of industrial wood because of adverse site conditions (producing less than 20 cubic feet per acre per year) and productive forest land withdrawn from commercial timber use through statute or administrative regulation.

**Noncommercial operable** — noncommercial forest land with a gross volume of 800 cubic feet or more per acre.

**Noncommercial inoperable** — noncommercial forest land with a gross volume of less than 800 cubic feet per acre.

**Forest type** — A classification of forest land based on the species forming a plurality of the live tree stocking.

**Spruce:** Forests in which a plurality of the stand is white spruce. Common associates include birch, aspen, cottonwood, and occasionally black spruce.

**Cottonwood:** Forests in which a plurality of the stand is black cottonwood or balsam poplar or both. Common associates include white spruce and birch.

**Aspen or birch:** Forests in which a plurality of the stand is aspen or paper birch or both. Common associates include black cottonwood, white spruce, and black spruce.

<sup>8</sup> Terminology and definitions are from the USDA Forest Service Handbook, Title 4813.1, 1967, unless otherwise noted.

**Growing stock trees** — Sawtimber trees, poletimber trees, saplings, and seedlings; that is, all live trees except cull trees.

**Desirable trees:** Growing stock trees with no serious defects in quality limiting present or prospective use, relatively high vigor, and hosting no pathogens that could result in death or serious deterioration before rotation age. They include the type of trees forest managers aim to grow; that is, the trees left in silvicultural cutting or favored in cultural operations.

**Acceptable trees:** Trees meeting the specifications for growing stock but not qualifying as desirable.

**Hardwoods** — Dicotyledonous trees, usually broad leaved and deciduous. Hardwood species in interior Alaska are paper birch, quaking aspen, black cottonwood, and balsam poplar.

**Inhibiting vegetation** — Cover sufficiently dense to prevent establishment of tree seedlings.

**International 1/4-inch rule** — A rule used to determine the tree volume in board feet (Bruce and Schumacher 1950).

**Land area** — The area of dry land and land temporarily or partly 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 120 feet wide; and lakes, reservoirs, and ponds less than 1 acre in area.

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

**Mean annual increment (MAI)** — A measure of the volume of wood, in cubic feet, produced on 1 acre during 1 year. RRE minimum standard for commercial forest land is the ability to produce 20 cubic feet per acre per year.

**Mortality** — Number or sound-wood volume of live trees dying from natural causes during a 5-year period.

**Net annual growth of growing stock** — The annual change in volume of sound wood in live sawtimber and poletimber trees.

**Net annual growth of sawtimber** — The annual change in net board-foot volume of live sawtimber trees.

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

**Growing stock volume:** The net volume of sound wood in the bole of growing stock trees 5.0-inch d.b.h. and larger, from stump to a minimum top diameter of 4.0 inches outside bark or to the point where the central stem breaks into limbs.

**Noncommercial species** — Tree species of typically small size, poor form, or inferior quality which normally do not develop into trees 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, such as crops, improved pasture, residential areas, and city parks. Also includes improved roads and certain areas of water classified by the Bureau of the Census as land. Unimproved roads, streams, canals, and nonforest strips in forest areas must be more than 120 feet wide, and clearings in forest areas must be more than 1 acre in size to qualify as nonforest land.

**Nonstockable land** — Areas of forest land not capable of supporting forest growth because of rock, water, etc.

**Salvable dead trees** — Standing dead trees that are considered currently or potentially merchantable by regional standards. A poletimber tree must be more than one-half sound; a sawtimber tree, more than one-third sound (board measure).

**Saw log** — A log meeting minimum standards of diameter, length, and defect, including logs at least 8 feet long, sound and straight, and with a minimum small end diameter inside bark of 6 inches for softwoods (8 inches for hardwoods).

**Saw log portion** — That part of 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 saw log top is 7.0-inch d.o.b. (diameter outside bark) for softwoods and 9.0-inch d.o.b. for hardwoods.

**Site classes** — A classification of forest land by its capacity to grow crops of industrial wood.

**Softwoods** — Coniferous trees, usually evergreen with needles or scalelike leaves. Softwood species in interior Alaska are white spruce, black spruce, and eastern tamarack.

**Stocking** — The degree of occupancy of land by trees, measured by basal area and/or the number of trees in a stand by size or age and spacing, compared with the basal area or number of trees required to fully utilize the growth potential of land; that is, the stocking standard.

**Overstocked areas:** Areas where growth of trees is significantly reduced by excessive numbers of trees.

**Nonstocked areas:** Commercial forest lands less than 16.7 percent stocked with growing stock trees.

## Names of Trees<sup>9</sup>

**Stand-size classes** — A classification of forest land based on size of the growing stock present; that is, sawtimber, poletimber, or saplings and seedlings.

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

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

**Sapling-seedling stands:** Stands at least 16.7 percent stocked with growing stock trees of which more than half of the stocking is saplings and seedlings.

**Tree-size classes** — A classification based on the diameter of the tree at breast height (4-1/2 feet above the ground on the uphill side of the tree).

**Sawtimber-size tree:** Softwood tree of 9.0-inch d.b.h. and larger. Hardwood tree of 11.0-inch d.b.h. and larger.

**Poletimber-size tree:** Softwood tree of 5.0- to 8.9-inch d.b.h. Hardwood tree of 5.0- to 10.9-inch d.b.h.

**Sapling-size tree:** A tree of 1.0- to 4.9-inch d.b.h.

**Seedling-size tree:** An established tree of less than 1.0-inch d.b.h.

**Upper stem portion** — That part of the main stem or fork of sawtimber trees above the saw log top to a minimum top diameter of 4.0-inch outside bark or to the point where the main stem or fork breaks into limbs.

**Water** — Bureau of the Census definition: Streams, sloughs, estuaries, and canals more than one-eighth of a statute mile in width; and lakes, reservoirs, and ponds more than 40 acres in area. RRE definition: The same as the Bureau of the Census definition, except minimum width of streams, etc., is 120 feet and minimum size of lakes, etc., is 1 acre.

### Softwoods

Black spruce

Tamarack

White spruce

### Hardwoods

Balsam poplar

Black cottonwood

Paper birch

Quaking aspen

*Picea mariana* (Mill.) B.S.P.

*Larix laricina* (Du Roi) K. Koch

*Picea glauca* (Moench) Voss

*Populus balsamifera* L.

*Populus trichocarpa* Torr. & Gray

*Betula papyrifera* Marsh.

*Populus tremuloides* Michx.

<sup>9</sup> The source for scientific names is Little (1953).

## Tables

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

**Table 1—Area by land class, Kantishna block, Tanana inventory unit, Alaska, 1973**

LAND CLASS	THOUSAND ACRES
FOREST LAND:	
COMMERCIAL	424.2
NONCOMMERCIAL--	
OPERABLE	41.5
INOPERABLE	2,080.3
	<hr/>
TOTAL	2,546.0
NONFOREST LAND	360.4
	<hr/>
ALL LANDS	2906.4
CENSUS WATER	37.8
	<hr/>
TOTAL AREA	2,944.2

Estimates are subject to sampling error.

**Table 2—Area of commercial and operable noncommercial forest land by stand size class, Kantishna block, Tanana inventory unit, Alaska, 1973**

STAND SIZE CLASS	FOREST LAND		
	COMMERCIAL	OPERABLE NONCOMMERCIAL	TOTAL
	<hr/>		
	<u>THOUSAND ACRES</u>		
SAWTIMBER STANDS	75.1	12.8	87.9
POLETIMBER STANDS	188.5	28.7	217.2
SEEDLING AND SAPLING STANDS	160.6	0	160.6
NONSTOCKED AREAS	0	0	0
	<hr/>		
ALL CLASSES	424.2	41.5	465.7

Estimates are subject to sampling error.

**Table 3—Area of commercial and operable noncommercial forest land by stand volume class, Kantishna block, Tanana inventory unit, Alaska, 1973**

STAND VOLUME	FOREST LAND		
	COMMERCIAL	OPERABLE NONCOMMERCIAL	TOTAL
<u>BOARD FEET PER ACRE</u> <sup>1/</sup>	<u>THOUSAND ACRES</u>		
0-1,499	288.7	19.0	307.7
1,500-2,999	44.3	9.6	53.9
3,000-4,999	31.8	6.4	38.2
5,000-6,999	12.5	6.5	19.0
7,000 AND OVER	46.9	0	46.9
ALL CLASSES	424.2	41.5	465.7

Estimates are subject to sampling error.

<sup>1/</sup>Net volume, International 1/4-inch rule.

**Table 4—Area of commercial and operable noncommercial forest land by stand volume and stand size classes, Kantishna block, Tanana inventory unit, Alaska, 1973**

STAND VOLUME CLASS	STAND SIZE CLASS				TOTAL
	NONSTOCKED	SEEDLING- SAPLING	POLETIMBER	SAWTIMBER	
<u>NET CUBIC FEET PER ACRE</u>	<u>THOUSAND ACRES</u>				
0-299	0	106.0	9.6	0.0	115.6
300-799	0	51.5	79.9	2.9	134.3
800-1,499	0	3.1	86.2	38.4	127.7
1,500-2,199	0	0	35.0	19.0	54.0
2,200 AND OVER	0	0	6.5	27.6	34.1
ALL CLASSES	0	160.6	217.2	87.9	465.7

Estimates are subject to sampling error.

**Table 5—Area of commercial forest land by area condition class, Kantishna block, Tanana inventory unit, Alaska, 1973**

CODE	AREA CONDITION CLASS	THOUSAND ACRES
10	Areas 100 percent or more stocked with desirable trees and not overstocked.	3.2
20	Areas 100 percent or more stocked with desirable trees and overstocked.	22.5
30	Areas 60 to 100 percent stocked with desirable trees, and with less than 30 percent of the area controlled by acceptable growing stock trees, cull trees, inhibiting vegetation, slash, or nonstockable conditions.	22.5
40	Areas 60 to 100 percent stocked with desirable trees and with 30 percent or more of the area controlled by other trees (or overstocked areas) or conditions that ordinarily prevent occupancy by desirable trees.	70.7
50	Areas less than 60 percent stocked with desirable trees but with 100 percent or more stocking with growing stock trees.	101.5
60	Areas less than 60 percent stocked with desirable trees but with 60- to 100-percent stocking with growing stock trees.	155.8
70	Areas less than 60 percent stocked with desirable trees and with less than 60-percent stocking with growing stock trees.	48.0
ALL CLASSES		424.2

Estimates are subject to sampling error.

**Table 6—Area of commercial forest land by site class, Kantishna block, Tanana inventory unit, Alaska, 1973**

SITE CLASS	THOUSAND ACRES
<u>CUBIC FEET</u>	
85 OR MORE <sup>1/</sup>	0
50-85	0
LESS THAN 50	424.2
ALL CLASSES	424.2

Estimates are subject to sampling error.

<sup>1/</sup>Potential yield, mean annual increment.

**Table 7—Area of commercial and noncommercial forest land by forest type, Kantishna block, Tanana inventory unit, Alaska, 1973**

FOREST TYPE	COMMERCIAL FOREST LAND	NONCOMMERCIAL FOREST LAND		TOTAL
		OPERABLE	INOPERABLE	
<u>THOUSAND ACRES</u>				
BALSAM POPLAR	37.9	0	16.1	54.0
BLACK SPRUCE	19.2	15.9	1,524.9	1560.0
PAPER BIRCH	179.3	9.6	250.5	439.4
QUAKING ASPEN	73.8	0	202.3	276.1
TAMARACK	0	0	12.6	12.6
WHITE SPRUCE	114.0	16.0	73.9	203.9
NONSTOCKED	0	0	0	0
ALL TYPES	424.2	41.5	2,080.3	2,546.0

Estimates are subject to sampling error.

**Table 8—Area of commercial forest land by forest type and stand size class, Kantishna block, Tanana inventory unit, Alaska, 1973**

FOREST TYPE	STAND SIZE CLASS				TOTAL
	NONSTOCKED	SEEDLING- SAPLING	POLETIMBER	SAWTIMBER	
<u>THOUSAND ACRES</u>					
BALSAM POPLAR	0	22.5	6.4	9.0	37.9
BLACK SPRUCE	0	0	19.2	0	19.2
PAPER BIRCH	0	70.7	102.2	6.4	179.3
QUAKING ASPEN	0	48.1	25.7	0	73.8
WHITE SPRUCE	0	19.3	35.0	59.7	114.0
ALL TYPES	0	160.6	188.5	75.1	424.2

Estimates are subject to sampling error.

**Table 9—Area of commercial forest land by stand age and stand size class, Kantishna block, Tanana inventory unit, Alaska, 1973**

STAND AGE	STAND SIZE CLASS			
	SEEDLING-SAPLING	POLETIMBER	SAWTIMBER	ALL CLASSES
<u>YEARS</u>	<u>THOUSAND ACRES</u>			
NONSTOCKED	0	0	0	0
1-10	19.2	0	0	19.2
10-20	22.5	0	0	22.5
20-30	54.6	2.9	3.2	60.7
30-40	22.6	19.2	0	41.8
40-50	9.6	51.3	0	60.9
50-60	16.1	19.2	0	35.3
60-70	0	31.9	3.2	35.1
70-80	3.2	29.1	9.4	41.7
80-90	0	3.1	0	3.1
90-100	3.2	22.5	3.3	29.0
100-120	3.2	3.2	9.7	16.1
120-140	0	6.1	21.5	27.6
140-160	0	0	6.1	6.1
160-180	0	0	6.0	6.0
180-200	0	0	0	0
200-300	0	0	6.4	6.4
300 AND OVER	0	0	3.1	3.1
MIXED AGES	6.4	0	3.2	9.6
ALL AGES	160.6	188.5	75.1	424.2

Estimates are subject to sampling error.

**Table 10—Area of operable noncommercial forest land by stand age and stand size class, Kantishna block, Tanana inventory unit, Alaska, 1973**

STAND AGE	STAND SIZE CLASS			
	SEEDLING-SAPLING	POLETIMBER	SAWTIMBER	ALL CLASSES
<u>YEARS</u>	<u>THOUSAND ACRES</u>			
1-10	0	0	0	0
10-20	0	0	0	0
20-30	0	0	0	0
30-40	0	0	0	0
40-50	0	0	0	0
50-60	0	0	0	0
60-70	0	3.2	0	3.2
70-80	0	3.1	0	3.1
80-90	0	0	0	0
90-100	0	3.2	0	3.2
100-120	0	9.6	6.3	15.9
120-140	0	0	0	0
140-160	0	3.1	3.3	6.4
160-180	0	0	0	0
180-200	0	0	0	0
200-300	0	0	0	0
300 AND OVER	0	0	0	0
MIXED AGES	0	6.4	3.2	9.6
ALL AGES	0	28.6	12.8	41.4

Estimates are subject to sampling error.

**Table 11—Number of growing stock trees on commercial forest land by diameter class and species, Kantishna block, Tanana inventory unit, Alaska, 1973**

DIAMETER CLASS	BALSAM POPLAR	BLACK SPRUCE	PAPER BIRCH	QUAKING ASPEN	WHITE SPRUCE	ALL SPECIES
<u>THOUSAND TREES</u>						
<u>INCHES AT BREAST HEIGHT</u>						
1.0-2.9	10,837.4	0	76,531.8	30,676.8	26,815.2	144,861.2
3.0-4.9	5,086.8	0	36,826.1	16,479.5	9,625.5	68,017.9
5.0-6.9	2,531.3	3,817.9	19,316.2	5,838.0	5,290.3	36,793.7
7.0-8.9	717.7	531.6	6,977.5	1,445.6	4,431.1	14,103.5
9.0-10.9	531.4	49.5	2,152.6	450.9	3,304.7	6,489.1
11.0-12.9	359.3	31.6	351.8	50.8	1,791.9	2,585.4
13.0-14.9	114.8	0	61.4	0	1,140.9	1,317.1
15.0-16.9	18.7	0	0	0	533.5	552.2
17.0-18.9	0	0	0	0	178.4	178.4
19.0-20.9	6.4	0	0	0	106.1	112.5
21.0-28.9	0	0	0	0	46.0	46.0
29 AND OVER	0	0	0	0	2.5	2.5
ALL CLASSES	20,203.8	4,430.6	142,217.4	54,941.6	53,266.1	275,059.5

Estimates are subject to sampling error.

**Table 12—Number of growing stock trees 5.0-inch d.b.h. and larger on commercial and operable noncommercial forest land by 5-foot height class and species, Kantishna block, Tanana inventory unit, Alaska, 1973**

5-FOOT HEIGHT CLASS	BALSAM POPLAR	BLACK SPRUCE	PAPER BIRCH	QUAKING ASPEN	WHITE SPRUCE	ALL SPECIES
<u>THOUSAND TREES</u>						
0-30	151.2	618.6	147.4	242.6	842.9	2,002.7
31-35	617.0	1,181.0	392.7	787.2	1,055.1	4,033.0
36-40	623.3	2,000.8	1,986.6	954.2	1,518.2	7,083.1
41-45	133.6	2,045.7	966.8	1,611.1	2,439.5	7,196.7
46-50	811.7	1,439.3	9,696.0	1,558.0	2,996.1	16,501.1
51-55	561.5	873.2	7,827.0	862.5	2,674.2	12,798.4
56-60	587.5	214.6	5,662.8	1,145.5	1,739.8	9,350.2
61-65	459.5	83.3	3,264.0	386.8	2,085.4	6,279.0
66-70	295.0	70.3	896.5	264.4	1,459.5	2,985.7
71-75	36.5	0	29.9	24.7	1,340.4	1,431.5
76-80	74.3	0	0	26.2	813.7	914.2
81-85	89.8	0	0	0	490.9	580.7
86-90	28.0	0	0	0	255.3	283.3
91-95	42.7	0	0	0	108.9	151.6
96-100	0	0	0	0	78.5	78.5
101 AND OVER	0	0	0	0	10.2	10.2
ALL CLASSES	4,511.6	8,526.8	30,869.7	7,836.2	19,908.6	71,679.9

Estimates are subject to sampling error.

**Table 13—Net volume of timber on commercial and operable noncommercial forest land by class of timber and by softwoods and hardwoods, Kantishna block, Tanana inventory unit, Alaska, 1973**

CLASS OF TIMBER	COMMERCIAL FOREST LAND			OPERABLE NONCOMMERCIAL FOREST LAND		
	SOFTWOODS	HARDWOODS	TOTAL	SOFTWOODS	HARDWOODS	TOTAL
	<u>MILLION CUBIC FEET</u>					
SAWTIMBER TREES:						
SAW LOG PORTION	136.5	12.3	148.8	13.9	0.5	14.4
UPPER STEM PORTION	10.1	3.7	13.8	1.5	.2	1.7
TOTAL	146.6	16.0	162.6	15.4	.7	16.1
POLETIMBER TREES	51.9	152.8	204.7	18.6	7.9	26.5
ALL GROWING STOCK TREES	198.5	168.8	367.3	34.0	8.6	42.6
ROUGH TREES	1.6	.6	2.2	0	0	
ROTTEN TREES	.2	1.2	1.4	0	.1	.1
SALVABLE DEAD TREES	7.2	.6	7.8	2.4	0	2.4
ALL TIMBER	207.5	171.2	378.7	36.4	8.7	45.1

Estimates are subject to sampling error.

Table 14—Net volume of growing stock on commercial forest land by diameter class and species, Kantishna block, Tanana inventory unit, Alaska, 1973

DIAMETER CLASS	SOFTWOODS			HARDWOODS			TOTAL	ALL SPECIES
	BLACK SPRUCE	WHITE SPRUCE	TOTAL	BALSAM POPLAR	PAPER BIRCH	QUAKING ASPEN		
<u>INCHES AT BREAST HEIGHT</u>	<u>MILLION CUBIC FEET</u>							
5.0-6.9	8.1	13.1	21.2	4.7	51.6	13.6	69.9	91.1
7.0-8.9	2.7	28.0	30.7	3.8	41.2	8.0	53.0	83.7
9.0-10.9	.4	39.9	40.3	4.4	20.2	5.3	29.9	70.2
11.0-12.9	.6	34.5	35.1	5.5	4.6	.8	10.9	46.0
13.0-14.9	0	30.8	30.8	2.9	1.1	0	4.0	34.8
15.0-16.9	0	20.2	20.2	.7	0	0	.7	20.9
17.0-18.9	0	9.2	9.2	0	0	0	0	9.2
19.0-20.9	0	6.9	6.9	.4	0	0	.4	7.3
21.0-26.9	0	3.7	3.7	0	0	0	0	3.7
27.0 AND OVER	0	.4	.4	0	0	0	0	.4
ALL CLASSES	11.8	186.7	198.5	22.4	118.7	27.7	168.8	367.3

Estimates are subject to sampling error.

**Table 15—Net volume of growing stock on commercial and operable noncommercial forest land by diameter class and species, Kantishna block, Tanana inventory unit, Alaska, 1973**

DIAMETER CLASS	SOFTWOODS			HARDWOODS			TOTAL	ALL SPECIES
	BLACK SPRUCE	WHITE SPRUCE	TOTAL	BALSAM POPLAR	PAPER BIRCH	QUAKING ASPEN		
<u>INCHES AT BREAST HEIGHT</u>	<u>MILLION CUBIC FEET</u>							
5.0-6.9	15.1	16.0	31.1	4.7	53.9	13.7	72.3	103.4
7.0-8.9	6.8	32.6	39.4	4.3	44.6	8.0	56.9	96.3
9.0-10.9	1.7	45.9	47.6	4.4	21.9	5.3	31.6	79.2
11.0-12.9	.6	39.3	39.9	5.6	5.2	.8	11.6	51.5
13.0-14.9	0	32.4	32.4	2.9	1.1	0	4.0	36.4
15.0-16.9	0	20.6	20.6	.7	0	0	.7	21.3
17.0-18.9	0	10.6	10.2	0	0	0	0	10.2
19.0-20.9	0	7.2	7.2	.4	0	0	.4	7.6
21.0-26.9	0	3.6	3.6	0	0	0	0	3.6
27.0 AND OVER	0	.4	.4	0	0	0	0	.4
ALL CLASSES	24.2	208.2	323.4	23.0	126.7	27.8	177.5	409.9

Estimates are subject to sampling error.

Table 16—Net volume of sawtimber on commercial forest land by diameter class and species, Kantishna block, Tanana inventory unit, Alaska, 1973

DIAMETER CLASS	SOFTWOODS			HARDWOODS			TOTAL	ALL SPECIES
	BLACK SPRUCE	WHITE SPRUCE	TOTAL	BALSAM POPLAR	PAPER BIRCH	QUAKING ASPEN		
<u>INCHES AT BREAST HEIGHT</u>	<u>MILLION BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>							
9.0-10.9	2.3	210.7	213.0	0	0	3.3	0	213.0
11.0-12.9	3.2	192.2	195.4	19.5	20.3	0	43.1	238.5
13.0-14.9	0	177.1	177.1	13.3	5.2	0	18.5	195.6
15.0-16.9	0	117.8	117.8	3.4	0	0	3.4	121.2
17.0-18.9	0	55.7	55.7	0	0	0	0	55.7
19.0-20.9	0	41.5	41.5	2.1	0	0	2.1	43.6
21.0-28.9	0	22.3	22.3	0	0	0	0	22.3
29.0 AND OVER	0	2.4	2.4	0	0	0	0	2.4
ALL CLASSES	5.5	819.7	825.4	38.3	25.5	3.3	67.1	892.3

Estimates are subject to sampling error.

Table 17—Net volume of sawtimber on commercial and operable noncommercial forest land by diameter class and species, Kantishna block, Tanana inventory unit, Alaska, 1973

DIAMETER CLASS	SOFTWOODS			HARDWOODS			TOTAL	ALL SPECIES
	BLACK SPRUCE	WHITE SPRUCE	TOTAL	BALSAM POPLAR	PAPER BIRCH	QUAKING ASPEN		
<u>INCHES AT BREAST HEIGHT</u>	<u>MILLION BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>							
9.0-10.9	9.3	244.5	253.8	0	0	0	0	253.8
11.0-12.9	3.2	219.8	223.0	19.6	22.8	3.4	45.9	268.8
13.0-14.9	0	186.0	186.0	13.3	5.2	0	18.5	204.5
15.0-16.9	0	119.7	119.7	3.4	0	0	3.4	123.1
17.0-18.9	0	61.2	61.2	2.1	0	0	2.1	63.3
19.0-20.9	0	43.1	43.1	0	0	0	0	43.1
21.0-28.9	0	22.3	22.3	0	0	0	0	22.3
29.0 AND OVER	0	2.4	2.4	0	0	0	0	2.4
ALL CLASSES	12.5	899.0	911.5	38.4	28.0	3.4	69.8	981.3

Estimates are subject to sampling error.

Table 18—Gross volume of sawtimber on commercial forest land by diameter class and species, Kantishna block, Tanana inventory unit, Alaska, 1973

DIAMETER CLASS	SOFTWOODS			HARDWOODS			ALL SPECIES	
	BLACK SPRUCE	WHITE SPRUCE	TOTAL	BALSAM POPLAR	PAPER BIRCH	QUAKING ASPEN		TOTAL
<u>INCHES AT BREAST HEIGHT</u>	<u>MILLION BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>							
9.0-10.9	2.9	213.3	216.2	0	0	0	0	216.2
11.0-12.9	3.2	195.2	198.4	20.8	24.4	3.3	48.5	246.9
13.0-14.9	0	179.1	179.1	14.2	6.4	0	20.6	199.7
15.0-16.9	0	120.5	120.5	3.4	0	0	3.4	123.9
17.0-18.9	0	56.3	56.3	0	0	0	0	56.3
19.0-20.9	0	42.2	42.2	2.1	0	0	2.1	44.3
21.0-28.9	0	22.9	22.9	0	0	0	0	22.9
29.0 AND OVER	0	2.4	2.4	0	0	0	0	2.4
ALL CLASSES	6.1	831.9	838.0	40.5	30.8	3.3	74.6	912.6

Estimates are subject to sampling error.

**Table 19—Gross volume of sawtimber on commercial and operable noncommercial forest land by diameter class and species, Kantishna block, Tanana inventory unit, Alaska, 1973**

DIAMETER CLASS	SOFTWOODS			HARDWOODS			TOTAL	ALL SPECIES
	BLACK SPRUCE	WHITE SPRUCE	TOTAL	BALSAM POPLAR	PAPER BIRCH	QUAKING ASPEN		
<u>INCHES AT BREAST HEIGHT</u>								
<u>MILLION BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>								
9.0-10.9	9.9	247.6	257.5	0	0	0	0	257.5
11.0-12.9	3.2	223.8	227.0	21.1	26.9	3.4	51.4	278.4
13.0-14.9	0	188.2	188.2	14.2	6.4	0	20.6	208.8
15.0-16.9	0	122.5	122.5	3.4	0	0	3.4	125.9
17.0-18.9	0	62.0	62.0	0	0	0	0	62.0
19.0-20.9	0	43.7	43.7	2.1	0	0	2.1	45.8
21.0-28.9	0	22.9	22.9	0	0	0	0	22.9
29.0 AND OVER	0	2.4	2.4	0	0	0	0	2.4
ALL CLASSES	13.1	913.1	926.2	40.8	33.3	3.4	77.5	1,003.7

Estimates are subject to sampling error.

**Table 20—Net volume of growing stock on commercial forest land by forest type and stand size class, Kantishna block, Tanana inventory unit, Alaska, 1973**

FOREST TYPE	STAND SIZE CLASS			TOTAL
	SEEDLING AND SAPLING	POLETIMBER	SAWTIMBER	
	<u>MILLION CUBIC FEET</u>			
BALSAM POPLAR	8.3	2.2	15.3	25.8
BLACK SPRUCE	0	9.9	0	9.9
PAPER BIRCH	12.9	115.7	6.4	135.0
QUAKING ASPEN	10.6	26.9	0	37.5
WHITE SPRUCE	6.8	31.8	120.5	159.1
ALL TYPES	38.6	186.5	142.2	367.3

Estimates are subject to sampling error.

**Table 21—Net volume of growing stock on operable noncommercial forest land by forest type and stand size class, Kantishna block, Tanana inventory unit, Alaska, 1973**

FOREST TYPE	STAND SIZE CLASS			TOTAL
	SEEDLING AND SAPLING	POLETIMBER	SAWTIMBER	
	<u>MILLION CUBIC FEET</u>			
BALSAM POPLAR	0	0	0	0
BLACK SPRUCE	0	14.1	0	14.1
PAPER BIRCH	0	8.8	0	8.8
QUAKING ASPEN	0	0	0	0
WHITE SPRUCE	0	3.4	16.3	19.7
ALL TYPES	0	26.3	16.3	42.6

Estimates are subject to sampling error.

**Table 22—Net volume of sawtimber on commercial forest land by forest type and stand size class, Kantishna block, Tanana inventory unit, Alaska, 1973**

FOREST TYPE	STAND SIZE CLASS			TOTAL
	SEEDLING AND SAPLING	POLETIMBER	SAWTIMBER	
<u>MILLION BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>				
BALSAM POPLAR	9.0	0	62.8	71.8
BLACK SPRUCE	0	13.8	0	13.8
PAPER BIRCH	20.2	108.8	21.3	150.3
QUAKING ASPEN	7.0	17.0	0	24.0
WHITE SPRUCE	12.9	56.2	563.3	632.4
ALL TYPES	49.1	195.8	647.4	892.3

Estimates are subject to sampling error.

**Table 23—Net volume of sawtimber on operable noncommercial forest land by forest type and stand size class, Kantishna block, Tanana inventory unit, Alaska, 1973**

FOREST TYPE	STAND SIZE CLASS			TOTAL
	SEEDLING AND SAPLING	POLETIMBER	SAWTIMBER	
<u>MILLION BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>				
BALSAM POPLAR	0	0	0	0
BLACK SPRUCE	0	10.5	0	10.5
PAPER BIRCH	0	10.3	0	10.3
QUAKING ASPEN	0	0	0	0
WHITE SPRUCE	0	5.3	62.9	68.2
ALL TYPES	0	26.1	62.9	89.0

Estimates are subject to sampling error.

**Table 24—Net volume of sawtimber on commercial forest land by species and log grade, Kantishna block, Tanana inventory unit, Alaska, 1973**

SPECIES	LOG GRADE <u>1/</u>				TOTAL
	1	2	3	4 <u>2/</u>	
<u>MILLION BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>					
SOFTWOODS:					
BLACK SPRUCE	0	0	4.1	1.4	5.5
WHITE SPRUCE	1.8	35.6	709.6	72.7	819.7
TOTAL	1.8	35.6	713.7	74.1	825.2
HARDWOODS:					
BALSAM POPLAR	0	8.1	28.9	1.3	38.3
PAPER BIRCH	0	1.9	19.5	4.1	25.5
QUAKING ASPEN	0	.7	2.6	0	3.3
TOTAL	0	10.7	51.0	5.4	67.1
ALL SPECIES	1.8	46.3	764.7	79.5	892.3

Estimates are subject to sampling error.

1/ Forest Products Laboratory. Hardwood log grades for standard lumber. USDA For. Prod. Lab. Rep. R1737; 1959.

Northern Hemlock and Hardwood Manufacturers Association. Official grading rules for northern hardwood and softwood logs and tie cuts. Green Bay, WI; 1959.

2/ Logs for local use.

**Table 25—Net volume of sawtimber on operable noncommercial forest land by species and log grade, Kantishna block, Tanana inventory unit, Alaska, 1973**

SPECIES	LOG GRADE <u>1/</u>				TOTAL
	1	2	3	4 <u>2/</u>	
<u>MILLION BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>					
SOFTWOODS:					
BLACK SPRUCE	0	0	5.3	1.7	7.0
WHITE SPRUCE	0	0	75.3	4.0	79.3
TOTAL	0	0	80.6	5.7	86.3
HARDWOODS:					
BALSAM POPLAR	0	0	.2	0	.2
PAPER BIRCH	.7	0	1.3	0.5	2.5
QUAKING ASPEN	0	0	0	0	0
TOTAL	.7	0	1.5	.5	2.7
ALL SPECIES	.7	0	82.1	6.2	89.0

Estimates are subject to sampling error.

1/ Forest Products Laboratory. Hardwoods log grades for standard lumber. USDA For. Prod. Lab. Rep. R1737; 1959.

Northern Hemlock and Hardwood Manufacturers Association. Official grading rules for northern hardwood and softwood logs and tie cuts. Green Bay, WI; 1959.

2/ Logs for local use.

**Table 26—Net annual growth of growing stock by species and forest land class, Kantishna block, Tanana inventory unit, Alaska, 1973**

SPECIES	FOREST LAND CLASS		
	COMMERCIAL	OPERABLE NONCOMMERCIAL	TOTAL
	<u>THOUSAND CUBIC FEET</u>		
<b>SOFTWOODS:</b>			
BLACK SPRUCE	1,039.4	488.0	1,527.4
WHITE SPRUCE	2,577.2	457.4	3,034.6
TOTAL	3,616.6	945.4	4,562.0
<b>HARDWOODS:</b>			
BALSAM POPLAR	702.3	8.5	710.8
PAPER BIRCH	3,921.7	214.8	4,136.5
QUAKING ASPEN	1,662.3	1.5	1,663.8
TOTAL	6,286.3	224.8	6,511.1
ALL SPECIES	9,902.9	1,170.2	11,073.1

Estimates are subject to sampling error.

**Table 27—Net annual growth of sawtimber by species and forest land class, Kantishna block, Tanana inventory unit, Alaska, 1973**

SPECIES	FOREST LAND CLASS		
	COMMERCIAL	OPERABLE NONCOMMERCIAL	TOTAL
	<u>THOUSAND BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>		
<b>SOFTWOODS:</b>			
BLACK SPRUCE	113.1	96.1	209.2
WHITE SPRUCE	21,283.0	3,534.8	24,817.8
<b>TOTAL</b>	<b>21,396.1</b>	<b>3,630.9</b>	<b>25,027.0</b>
<b>HARDWOODS:</b>			
BALSAM POPLAR	3,345.2	5.0	3,350.2
PAPER BIRCH	3,107.5	39.4	3,146.9
QUAKING ASPEN	67.7	0	67.7
<b>TOTAL</b>	<b>6,520.4</b>	<b>44.4</b>	<b>6,564.8</b>
<b>ALL SPECIES</b>	<b>27,916.5</b>	<b>3,675.3</b>	<b>31,591.8</b>

Estimates are subject to sampling error.

**Table 28—Annual mortality of growing stock, by species and forest land class, Kantishna block, Tanana inventory unit, Alaska, 1973**

SPECIES	FOREST LAND CLASS		
	COMMERCIAL	OPERABLE NONCOMMERCIAL	TOTAL
	<u>THOUSAND CUBIC FEET</u>		
<b>SOFTWOODS:</b>			
BLACK SPRUCE	62.1	22.9	85.0
WHITE SPRUCE	1,259.2	0	1,259.2
<b>TOTAL</b>	<b>1,321.3</b>	<b>22.9</b>	<b>1,344.2</b>
<b>HARDWOODS:</b>			
BALSAM POPLAR	0	0	0
PAPER BIRCH	136.5	0	136.5
QUAKING ASPEN	21.2	0	21.2
<b>TOTAL</b>	<b>157.7</b>	<b>0</b>	<b>157.7</b>
<b>ALL SPECIES</b>	<b>1,479.0</b>	<b>22.9</b>	<b>1,501.9</b>

Estimates are subject to sampling error.

**Table 29—Annual mortality of sawtimber by species and forest land class, Kantishna block, Tanana inventory unit, Alaska, 1973**

SPECIES	FOREST LAND CLASS		
	COMMERCIAL	OPERABLE NONCOMMERCIAL	TOTAL
	<u>THOUSAND BOARD FEET, INTERNATIONAL 1/4-INCH RULE</u>		
<b>SOFTWOODS:</b>			
BLACK SPRUCE	0	0	0
WHITE SPRUCE	4,766.5	0	4,766.5
TOTAL	4,766.5	0	4,766.5
<b>HARDWOODS:</b>			
BALSAM POPLAR	0	0	0
PAPER BIRCH	0	0	0
QUAKING ASPEN	0	0	0
TOTAL	0	0	0
ALL SPECIES	4,766.5	0	4,766.5

Estimates are subject to sampling error.

**Table 30—Annual mortality of growing stock by cause, forest land class, and by softwoods and hardwoods, Kantishna block, Tanana inventory unit, Alaska, 1973**

CAUSE	COMMERCIAL FOREST LAND			OPERABLE NONCOMMERCIAL FOREST LAND		
	SOFTWOODS	HARDWOODS	TOTAL	SOFTWOODS	HARDWOODS	TOTAL
<u>THOUSAND CUBIC FEET</u>						
FIRE	217.7	75.6	293.3	0	0	0
INSECTS	371.2	0	371.2	0	0	0
DISEASE	0	0	0	0	0	0
WINDTHROW	245.1	21.2	266.3	0	0	0
LOGGING	239.6	0	239.6	0	0	0
OTHER	179.4	60.9	240.3	22.9	0	22.9
UNKNOWN	68.3	0	68.3	0	0	0
<b>TOTAL</b>	<b>1,321.3</b>	<b>157.7</b>	<b>1,479.0</b>	<b>22.9</b>	<b>0</b>	<b>22.9</b>

Estimates are subject to sampling error.

**Table 31—Annual mortality of sawtimber by cause, forest land class, and by softwoods and hardwoods, Kantishna block, Tanana inventory unit, Alaska, 1973**

CAUSE	COMMERCIAL FOREST LAND			OPERABLE NONCOMMERCIAL FOREST LAND		
	SOFTWOODS	HARDWOODS	TOTAL	SOFTWOODS	HARDWOODS	TOTAL
<u>THOUSAND CUBIC FEET</u>						
FIRE	701.1	0	701.1	0	0	0
INSECTS	1,735.8	0	1,735.8	0	0	0
DISEASE	367.3	0	367.3	0	0	0
WINDTHROW	1,042.4	0	1,042.4	0	0	0
LOGGING	650.7	0	650.7	0	0	0
OTHER	0	0	0	0	0	0
UNKNOWN	269.2	0	269.2	0	0	0
<b>TOTAL</b>	<b>4,766.5</b>	<b>0</b>	<b>4,766.5</b>	<b>0</b>	<b>0</b>	<b>0</b>

Estimates are subject to sampling error.

## Acknowledgments

Completion of this study was through the diligence of the field crew. The Bureau of Land Management, U.S. Department of the Interior, generously provided riverboats, motors, and logistical air support. The Division of Lands, Alaska Department of Natural Resources, provided funds and personnel. The Federal-State Land Use Planning Commission and the U.S. Army provided timely support with additional personnel.

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### Field measurements:

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## Metric Equivalents

1 acre = 0.4047 hectare  
1 hectare = 2.47 acres  
1 cubic foot = 0.0283 cubic meter  
1 cubic meter = 35.3145 cubic feet  
1 cubic foot per acre = 0.06997 cubic meter per hectare  
1 cubic meter per hectare = 14.2913 cubic feet per acre  
20 cubic feet per acre = 0.3994 cubic meters per hectare  
1 square foot basal area per acre = 0.2296 square meter per hectare  
1 square meter per hectare = 4.356 square feet per acre

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This report for the 2.9-million-acre Kantishna block is the second of four on the 14-million-acre Tanana Valley inventory unit. Comments are made on general landform, timber use, recreational potential, agricultural developments, forest defect, regeneration, and inventory methodology. Tables are provided for commercial forest land and for operable noncommercial forest land. Estimates for commercial forest land total 424,200 acres with 367,300,000 net cubic feet of growing stock volume. Estimates for the operable noncommercial class total 41,500 acres with 42,600,000 net cubic feet of growing stock volume.

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

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