
Forestry

DESIGNATIONS AND EXISTING USE

Forestry is a primary use in subunits a and b and a secondary use in Subunit c. Seven timber sales totalling 2,400 acres were sold between 1986 and 1988 (see Map 3). Harvesting has begun on one 160-acre sale. Harvesting could begin in 1990 on the remaining sales.

RESOURCES AND POTENTIAL

Vegetation types in the Kashwitna Unit are summarized on Map 4 and in Tables 1 and 2. About 48% of the state and borough land (17,130 acres) is forest land on sites with relatively high productivity. These are mixed forests. The most common tree is white birch. Some white spruce is mixed in the birch forest. Approximately 33% of the state and borough land (11,620 acres) are lower-productivity forests on high elevation or poorly drained sites. These include open stands of white spruce and black spruce forests. The remaining 19% of the area (6,890 acres) is shrubland, grassland, tundra, bogs, or water.

Rough volume estimates are available from the average volumes per acre for the Susitna Basin. Based on these figures, state land supports about 10-11 million cubic feet of timber in mixed forests and about three million cubic feet in open white spruce and black spruce forests. Borough land supports about two million cubic feet of timber in mixed forests, and 300 thousand cubic feet in black spruce forests. There are no white spruce forests identified on borough land. These estimates are based on volume in trees 5.0" or greater in diameter at breast height. Volumes for the Kashwitna forests may be higher than the average. The DNR Division of Forestry cruised timber on one existing timber sale and found 1,375 cubic feet per acre. The volume included 1,134 cubic feet per acre of birch and 241 cubic feet per acre of spruce.

The high site forests have the potential to support timber harvesting for commercial and personal use. The primary species in these forests is white birch. The main local demand for birch is for fuelwood. Birch is also used locally for furniture stock and crafts. Foreign markets for hardwood chips and remanufactured wood products are also strong at this time (1990). Changes in markets and technology could make harvesting of low site forests feasible.

Grazing

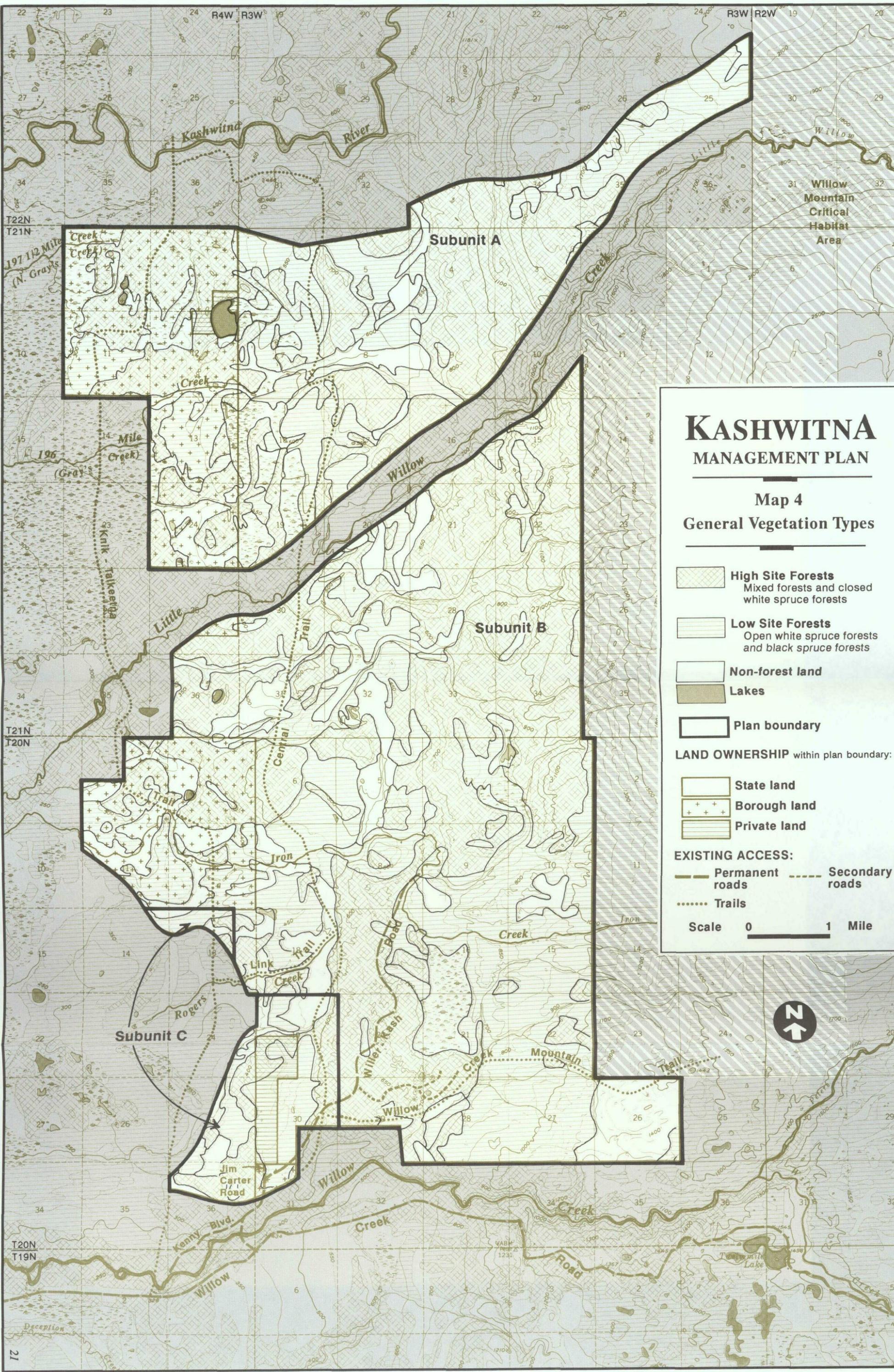
DESIGNATIONS AND EXISTING USE

Grazing is a secondary use on the 23,850 acres of state and borough land in subunits b and c. Grazing is not a designated use in Subunit a. There are currently no grazing leases or permits on state or borough land.

RESOURCES AND POTENTIAL

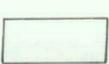
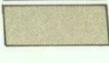
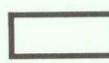
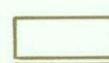
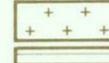
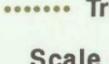
There is little information on grazing resources in the Kashwitna Unit. General information from the USDA Soil Conservation Service (SCS) vegetation inventory for the Susitna River Basin⁴ shows few grasslands in the Kashwitna unit (see Table 1). Only 2% (470 acres) of

⁴US Department of Agriculture in cooperation with Alaska Department of Natural Resources. 1986. Timber and Vegetation Resources of the Susitna River Basin -- Alaska Report. Anchorage, AK. 49 pp. + appendices.



KASHWITNA MANAGEMENT PLAN

Map 4 General Vegetation Types

-  **High Site Forests**
Mixed forests and closed white spruce forests
 -  **Low Site Forests**
Open white spruce forests and black spruce forests
 -  **Non-forest land**
 -  **Lakes**
 -  **Plan boundary**
- LAND OWNERSHIP** within plan boundary:
-  **State land**
 -  **Borough land**
 -  **Private land**
- EXISTING ACCESS:**
-  **Permanent roads**
 -  **Secondary roads**
 -  **Trails**
- Scale 0 1 Mile



the state and borough land is subunits b and c is *Calamagrostis* grassland. Grass resources are primarily in the understory of open forests (see Table 3). On the average, the most common grass (*Calamagrostis spp.*) accounts for 1-13% of the canopy cover in forest types that occur in the Kashwitna Unit and up to 30% in non-forest types. *Calamagrostis* also occurred in about three-quarters of the sample plots on these types. These figures are averages for the entire Susitna Basin -- they are not specific to the Kashwitna Unit.

Table 1. Total acreage by vegetation type

<i>Vegetation type</i>	<i>State Land</i>	<i>Borough Land</i>	<i>Private Land</i>	<i>Total</i>
Mixed forest	14,310 ac	2,820 ac	190 ac	17,320 ac
Open white spruce	3,490 ac	0	0	3,490 ac
Black spruce	6,740 ac	1,390 ac	200 ac	8,330 ac
Shrubland	2,010 ac	950 ac	---	2,960 ac
Grassland	500 ac	---	---	500 ac
Bogs	2,490 ac	850 ac	---	3,340 ac
Lakes	10 ac	80 ac	---	90 ac
TOTAL	29,550 ac	6,090 ac	390 ac	36,030 ac

Table 2: Acreage of forest land by forest type

This table shows the acreage of state and borough forest land. Forestry is designated one of the primary uses in Subunits a and b. Agriculture is the primary use in Subunit c. See Chapter 3 -- Forestry for guidelines on forest management in Subunit c.

<i>Forest type</i>	<i>State land Subunits a & b</i>	<i>Borough land Subunits a & b</i>	<i>State land Subunit c</i>	<i>Borough land Subunit c</i>	<i>TOTAL</i>
Mixed forest					
22-closed, young	2,060 ac	80 ac	170 ac	40 ac	2,350 ac
24-closed, medium	5,290 ac	2,110 ac	360 ac	0	7,760 ac
26-closed, old	3,410 ac	20 ac	0	0	3,430 ac
32-open, medium	3,020 ac	570 ac	0	0	3,590 ac
Subtotal	13,780 ac	2,780 ac	530 ac	40 ac	17,130 ac
White spruce					
31-open, short	3,170 ac	0	0	0	3,170 ac
33-open, tall	320 ac	0	0	0	320 ac
Subtotal	3,490 ac	0	0	0	3,490 ac
Black spruce					
41-closed, short	3,940 ac	980 ac	420 ac	0	5,340 ac
42-closed, tall	1,500 ac	0 ac	0	0	1,510 ac
43-open, short	600 ac	340 ac	280 ac	60 ac	1,280 ac
Subtotal	6,040 ac	1,330 ac	700 ac	60 ac	8,130 ac
TOTAL	23,310 ac	4,110 ac	1,230 ac	100 ac	28,750 ac

Based on current resource information, the potential for grazing activity in this area is limited. Proximity to agricultural homesteads in Subunit c and road access raise the potential for use somewhat. Existing and future agricultural homesteads in Subunit c may generate demand for grazing areas.

The SCS is updating and expanding the detailed soil survey to cover the Kashwitna Unit. In 1990, SCS collected additional information on grazing potential in the Kashwitna Unit (see Chapter 4, Research). Data include the current annual production by species of understory and non-forest vegetation and the understory canopy cover. SCS is developing interpretations of soil types for grazing and will describe the range resources in the updated soil survey.

Table 3: Abundance of *Calamagrostis* grass by cover type*

This information shows the extent of *Calamagrostis* grass cover in each vegetation type and how often *Calamagrostis* appeared in sample plots in each type. *Calamagrostis* is the most common grass in this area. These numbers are averages for the entire Susitna Basin -- they are not specific to the Kashwitna Unit.

Cover type	% canopy cover	frequency in plots	average annual production of grasses (lb/ac)
Mixed forest			
22 young, closed	10%	81%	100
24 medium, closed	13%	96%	129
26 old, closed	3%	100%	188
32 medium, open	13%	100%	204
White spruce forest			
31 open, short	10%	75%	320
33 open, tall	3%	83%	126
Black spruce forest			
41 short, closed	2%	70%	116
42 tall, closed	2%	75%	16
43 short, open	1%	29%	93
Non-forest			
61 alder-willow	12%	92%	163
63 <i>Calamagrostis</i> grassland	30%	100%	1,333
65 herbaceous tundra	3%	74%	122
68 sphagnum bogs	2%	60%	433
69 sphagnum bog-shrubland	2%	77%	181

*Types 43, 65, and 69 have small amounts (3% cover) of other grass species. Grasses present include *Agrostis* sp., *Festuca* sp., and unidentified species.

Source: USDA Soil Conservation Service. 1986. Timber and Vegetation Resources of the Susitna River Basin -- Alaska Report. Anchorage, AK. 49 pp + appendices.