Loamy Flood Plains
172Xv100AK

Standard Site Description

Site Number: 172XY100AK
Site Name: Loamy Flood Plains
Plant Name: POBA2-PIGL/ALTE2
Date: Jan 1993
Initials (Author's/Agency): DRK, MHC/NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____, _____

(3) Typical Location:

Legal: NE 1/4; NW 1/4; NE 1/4; Sec. 01 T. 10N R. 03W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: Flood plains
(b) Specific: low & mid, bordering the channel,
(c) Microrelief: plane, convex,
(2) Elevation/Aspect:
Low 1850 / ALL High 2400 / ALL
(3) Slope: Low: 0 % High 2 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	___.___	___.___	___.___	___.___	___.___	___.___
2.	_____	___.___	___.___	___.___	___.___	___.___	___.___
3.	_____	___.___	___.___	___.___	___.___	___.___	___.___
4.	_____	___.___	___.___	___.___	___.___	___.___	___.___
5.	_____	___.___	___.___	___.___	___.___	___.___	___.___

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width	
1.	___	___	___	___	___	___	___	A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___	B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___	C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___	D) Not Determined
5.	___	___	___	___	___	___		

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____._ to _____._

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic _____, _____
b. Soil Temperature Regime: Cryic _____, _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 15 to 19 (inches)
g. Frost-Free Period: 60 to 80 (days) (28 °F base temp.
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.65	.74	.64	.54	.66	2.11	3.06	2.11	1.56	1.46	.70	.98	
LOW													
TEMP HI	6.5	16.5	28.3	39.5	53.4	61.7	66.3	63.1	52.1	34.7	15.4	4.4	(°F)
MEAN	-2.3	7.0	13.0	26.8	40.7	49.3	54.1	49.9	40.1	24.8	5.3	-4.0	
LOW	-12.0	-9.6	-2.3	14.1	27.9	36.9	41.9	36.7	28.0	15.2	-4.8	-12.5	

i. Climatic Weather Station:

(1) Location: Sourdough, AK
(2) Station Number: 508625

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Oxyaquic Cryofluvents	Coarse loamy over sandy or sandy skeletal, mixed, nonacid
(2)	Typic Cryofluvents	
(3)	Typic Cryofluvents	Coarse loamy, mixed, nonacid

b. Geologic Formation:
(1) Formation(s): (Proglacial Lake Deposits), _____
(2) Parent material: Alluvium, _____

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 0 (inches) Maximum 2 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low Ø	High 1	Boulders	Low Ø	High Ø
Cobbles	Low Ø	High Ø	Channers	Low Ø	High Ø
Stones	Low Ø	High Ø	Flagstone	Low Ø	High Ø

d. Surface Horizon:
(1) Diagnostic Surface Horizon: OCHRIC Epipedon
(2) Thickness: Minimum 3 (inches) Maximum 11 (inches)

e. Surface Texture: FSL, VFSL, SIL, _____

f. Soil Depth; (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 4 (inches) Maximum 24 (inches)

h. AWC for Effective Plant Root Zone: Low .10 High .15 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	_____ to	_____	_____
_____ to	_____	_____	_____ to	_____	_____
_____ to	_____	_____	_____ to	_____	_____
_____ to	_____	_____	_____ to	_____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 7 (inches) Maximum 60 (inches)
(2) Average Thickness: 27 (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 10 (inches) Maximum 60 (inches)
(2) Average Thickness 25 (inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	3	5.6	7.3
Layers:	3	25	5.6	7.3
All Other Layers:	25	60	6.6	8.4

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	→	→	→	M	→	→	→	→	F	→	→
4-10"	F	→	→	→	M	→	→	→	→	→	F	→
10-20"	F	→	→	→	M	→	→	→	→	→	→	F
20-40"	M	→	→	→	W	→	→	→	→	→	M	→
40-60"	W	→	→	→	→	→	→	→	→	→	→	→

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 2 (Ft) Maximum 5 (Ft)
(2) Kind: Apparent
(3) Month(s): APR to SEP

q. Flooding:
(1) Frequency: OCCAS - FREQ
(2) Duration: BRIEF
(3) Months: APR to OCT

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	30 - 60	45 - 65
Shrubs	40 - 60	10 - 20
Grasses, Grass Like, & Forbs	0 - 10	2 - 5
Cryptogams	____ - ____	____ - ____

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	50 - 90	_____ - _____
P	5 - 35	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 210 - 275 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL		50-67	--	10-35	--	
POBAL		--	--	15-40	--	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	

Site Index References: PIGL - 100yr breastheight age; Farr 1967

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIGL			1-15	--	--	
POBAL			1-10	--	--	
ALTE2			15-85	--	--	
SALIX			5-35	--	--	
ROAC			1-20	--	--	

Other ..... -- NTE ____ ea

POFR4 _____

RITR _____

SHCA _____

VIED _____

(b) Grasses and Grass Like ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CACA4			1-40	--	--	
ARLA2			0-15	--	--	
			--	--	--	
			--	--	--	
			--	--	--	

Other ..... ____-____NTE____ea

(c) Forbs ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
ARTI			0-20	--	--	
ASSI			0-20	--	--	
EPAN2			0-15	--	--	
EQUIS			1-40	--	--	
HEAL			0-20	--	--	

Other ..... ____-____NTE____ea

MEPA	
PYROL	
LIBO3	
RUAR	

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN		0 - 10	____-____	____-____
____	____	____-____	____-____	____-____
____	____	____-____	____-____	____-____
____	____	____-____	____-____	____-____
____	____	____-____	____-____	____-____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS		5 - 65	____-____	____-____
____	____	____-____	____-____	____-____
____	____	____-____	____-____	____-____
____	____	____-____	____-____	____-____
____	____	____-____	____-____	____-____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		11
Late (Good)		20
Mid (Fair)		32
Early (Poor)		25

e. Vegetation Narrative:

5. Wildlife

a. Species List:

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	FP3	Dackey
	FP32	
	FP4	
	ST3	
	FP3	Klute moderately wet
	FP32	
	FP31	Kluna frequently flooded
		Kluna deep

172Xy100AK - Loamy Flood Plains

Balsam poplar-white spruce/thinleaf alder open forest

Part A: Description of the Site

1.c. Landscape Narrative: This site consists of level to gently sloping flood plains formed in stratified sandy and silty alluvium over very gravelly and cobbly alluvium. Terrace height above the mean summer channel level is typically 2 to 8 feet (0.6 to 1.2 m) and the site is occasionally to frequently flooded. Elevation is generally below about 2400 feet (732 m).

In the Gulkana River area, this site is found along the Main Stem south of canyon rapids, the lower North and South Branches, and the West Fork; to Sourdough. This site undoubtedly occurs along other low to moderate gradient reaches of other rivers and streams elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 19 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: Soils on this site typically have a mantle of stratified sandy and silty alluvium 10 to 40 inches (25 to 102 cm) thick over very gravelly alluvium. Depth to seasonal high water table ranges from 32 to 60 inches (81 to 152 cm) and the soils are somewhat poorly or moderately well drained. Aquic conditions including redox depletions and/or a reduced matrix are present at depths of 18 to more than 60 inches (46 to more than 152 cm) below the soil surface.

4.e. Vegetation Narrative: Balsam poplar-white spruce/thinleaf alder open forest is the correlated PNC on this site. This PNC is best characterized as a riparian association, which develops under a regime of intermittent fluvial disturbance.

5.b. Wildlife Narrative: This site is utilized by a wide variety of wildlife. Migrating caribou frequently pass through areas of this site. Limited observations suggest that caribou generally pass through areas closely adjacent to both the river channel and the lacustrine uplands, apparently avoiding extensive dense tall shrub and forest vegetation. Moose find quality browse from the *Salix alexensis* and other willows that are common to abundant in early and mid successional stages; light to moderate hedging is observed in most stands. *Hedysarum alpinum* roots in these same stages are excellent bear forage; shallow pits and other evidence of grubbing are common in open areas. This site also provides a staging area for bears fishing for salmon in summer and fall. Bald Eagles use tall *Populus balsamifera* and occasionally *Picea glauca* for nest trees; both trees are utilized for perches. Beaver activity is common throughout this site (see *Community Dynamics*).

6. Community Dynamics (Fire, etc.): This site is susceptible to wild fires, which are commonly recurring events in the Copper River basin. Both *Picea glauca* and *Populus balsamifera* are readily killed by fire and even burns of moderate intensity would likely be stand replacing. *Populus balsamifera* and most shrubs common in the PNC sprout

from root crowns following fires. Post-fire vegetative succession would be expected to pass through a short lived herb-shrub sprout stage, a tall alder-willow-balsam poplar scrub stage, and a balsam poplar forest stage before returning to the Balsam poplar-white spruce/thinleaf alder open forest characteristic of the PNC. The early stages often will have abundant woody debris on the ground surface as fire killed trees and shrubs fall. Larger diameter debris will persist into later stages. The length of time between burning and a return to the PNC is not known. Once established, *Picea glauca* grow to 45 to 60 feet tall within about 50 to 70 years.

Community dynamics also are impacted by beavers. Most stands of the PNC have common beaver-felled *Populus balsamifera* throughout the forest understory. In some stands, stumps and damaged trees indicate that most trees are cut down or killed by beavers before the PNC stage is reached and that *Populus balsamifera* composition is significantly less than it would be otherwise.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy102AK - Loamy High Flood Plains, Frozen

172Xy103AK - Stream Terraces, Frozen

172Xy104AK - Stream Terraces

b. Riparian or Wetland:

172Xy500AK - Loamy Riverbanks

8. List of Competing Sites (number and names):

172Xy102AK - Loamy High Flood Plains, Frozen: typically slightly higher flood plain position and rare flooding; well drained soils but with permafrost at depths less than 60 inches; White spruce/thinleaf alder open forest PNC.

172Xy100AK - Loamy Flood Plains

Balsam poplar-white spruce/thinleaf alder open forest

Part B: Interpretation for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progressions:

(1) *Aggradation:* Based on observations and data collected in the Gulkana River area, this site is an intermediate stage of site progression and vegetative succession on flood plains. Site progression on flood plains begins when channel migration or down-cutting exposes fresh alluvium. Over time as flooding continues to deposit additional layers of alluvium, terraces height above the channel increases, the depth to water table generally increases, and frequency and duration of flooding decreases. Eventually, the flood plain is elevated above the level of normal periodic flooding, new accretions of alluvium for the most part cease, and the site becomes a stream terrace. Permafrost is frequently found within the soil profile on stream terraces.

Typical vegetation succession associated with the progression of site characteristics includes the following sequence of cover types on this site: Sparsely vegetated alluvium, Tall feltleaf willow/alder scrub, Tall thinleaf alder-feltleaf willow scrub, Tall thinleaf alder scrub, Balsam poplar/thinleaf alder open forest, and Balsam poplar-white spruce/thinleaf alder open forest. Continued site and vegetation progression leads to White spruce/thinleaf alder open forest on site 172Xy102AK - Loamy High Flood Plains, Frozen and Spruce/spruce muskeg sedge open forest on site 172Xy103AK - Stream Terraces, Frozen.

1.e. Insects and Disease Pests and Animal Damage: All *Populus balsamifera* trees have discoloration and heart rot from unknown pathogen. Evidence visible even in smallest trees and saplings. Crowns of larger trees usually with dead tops and other dead areas.

1.g. Recreation and Natural Beauty: Sparsely vegetated point bars and low flood plains provide good primitive camp sites; marginal quality firewood often available in later successional stages.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy100AK - Loamy Flood Plains
Cover type: Balsam poplar-white spruce/thinleaf alder open forest
Seral status: PNC
Number of stands: 11
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	100	24	7	45	49
white spruce	T1	91	20	5	40	43
white spruce	T2	36	12	2	15	21
balsam poplar	T3	27	4	1	10	10
white spruce	T3	64	2	1	5	11
black crowberry	SS	18	1	1	1	4
bog blueberry	SS	27	4	1	10	10
feltleaf willow	SS	36	9	5	15	18
highbush cranberry	SS	18	3	3	3	7
lowbush cranberry	SS	18	1	1	1	4
prickly rose	SS	82	8	1	20	25
russet buffalo-berry	SS	27	4	1	10	11
shrubby cinquefoil	SS	64	3	1	7	13
swamp red currant	SS	55	24	1	50	36
thinleaf alder	SS	100	39	15	85	62
willow	SS	64	8	1	25	22
American twinflower	F	73	4	1	10	16
Tilesius' wormwood	F	64	6	1	20	20
alpine sweet-vetch	F	64	5	1	20	17
anemone	F	18	2	1	2	5
arctic aster	F	64	5	1	20	18
buttercup	F	18	1	1	1	3
cloudberry	F	18	1	1	2	5
common fireweed	F	55	5	1	15	16
horsetail	F	82	9	1	40	27
larkspur-leaf monkshood	F	27	1	1	1	5
marsh grass-of-parnassus	F	18	1	1	1	3
milk-vetch	F	18	1	1	1	3
northern bedstraw	F	45	2	1	5	9
northern blackberry	F	45	5	1	7	15
northern commandra	F	18	8	1	15	12
tall Jacob`s-ladder	F	18	2	1	3	6
tall bluebells	F	18	7	3	10	11
wintergreen	F	73	5	1	8	18
bluejoint reedgrass	G	55	14	1	60	27
polar grass	G	45	5	1	15	15
Moss layer	M	100	16	3	65	40
Lichen layer	L	91	3	1	10	16
Bare soil	B	55	1	1	5	8
Litter and mulch	B	100	60	3	90	77
Woody litter (>1" dia.)	B	91	16	7	35	38

Salix spp. includes: SALIX SANO2 SAPL2

Ecological Site: 172Xy100AK - Loamy Flood Plains
Cover type: Balsam poplar/thinleaf alder open forest
Seral status: late
Number of stands: 20
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	95	32	10	70	55
white spruce	T1	25	5	1	10	11
white spruce	T2	20	6	1	15	11
balsam poplar	T3	45	7	1	15	18
white spruce	T3	75	3	1	10	15
feltleaf willow	SS	55	13	1	30	27
highbush cranberry	SS	25	19	2	35	22
little tree willow	SS	20	8	3	10	12
lowbush cranberry	SS	15	1	1	1	3
prickly rose	SS	65	8	1	25	23
russet buffalo-berry	SS	30	2	1	6	8
shrubby cinquefoil	SS	25	2	1	4	8
swamp red currant	SS	30	18	1	50	23
thinleaf alder	SS	100	52	15	85	72
willow	SS	40	11	1	45	21
American twinflower	F	25	4	1	10	10
Sitka burnet	F	15	2	1	2	5
Tilesius' wormwood	F	65	9	1	35	24
alpine sweet-vetch	F	70	3	1	10	14
arctic aster	F	75	5	1	25	19
common fireweed	F	70	6	1	25	21
horsetail	F	75	19	1	70	38
larkspur-leaf monkshood	F	30	1	1	2	6
milk-vetch	F	15	2	1	2	5
northern bedstraw	F	15	2	1	3	6
northern blackberry	F	20	1	1	1	4
tall Jacob`s-ladder	F	20	3	1	5	7
wintergreen	F	50	3	1	15	12
blue grass	G	35	4	1	10	12
bluejoint reedgrass	G	20	1	1	2	5
polar grass	G	65	16	1	85	32
slender wheatgrass	G	20	1	1	3	5
Moss layer	M	100	6	1	15	24
Lichen layer	L	75	1	1	5	10
Bare soil	B	60	2	1	10	11
Litter and mulch	B	100	64	1	95	80
Woody litter (>1" dia.)	B	80	10	4	30	28

Salix spp. includes: SABA3 SAMO2 SAPL2

Ecological Site: 172Xy100AK - Loamy Flood Plains
Cover type: Tall thinleaf alder scrub
Seral status: mid
Number of stands: 11
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq.root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T3	36	1	1	2	7
white spruce	T3	55	2	1	5	11
feltleaf willow	SS	82	10	4	15	28
prickly rose	SS	64	3	1	7	15
russet buffalo-berry	SS	18	1	1	1	4
shrubby cinquefoil	SS	18	1	1	1	4
thinleaf alder	SS	100	72	40	95	85
willow	SS	55	7	1	10	19
Tilesius' wormwood	F	73	4	1	15	16
Unknown forb	F	18	1	1	1	3
alpine sweet-vetch	F	18	1	1	1	4
arctic aster	F	55	3	1	7	12
arctic sweet coltsfoot	F	18	2	1	3	6
common fireweed	F	100	2	1	7	14
horsetail	F	91	11	1	40	31
larkspur-leaf monkshood	F	18	1	1	1	3
northern bedstraw	F	27	2	1	5	7
northern blackberry	F	27	13	1	30	19
tall Jacob`s-ladder	F	18	2	1	2	5
tall bluebells	F	18	2	1	3	6
blue grass	G	36	60	1	85	47
bluejoint reedgrass	G	55	34	5	70	43
polar grass	G	36	7	2	15	16
rough bent	G	18	1	1	1	4
water sedge	G	18	8	1	15	12
Moss layer	M	91	10	1	25	31
Lichen layer	L	45	1	1	1	5
Bare soil	B	55	9	1	45	22
Litter and mulch	B	100	62	1	95	79
Woody litter (>1" dia.)	B	73	7	2	15	22

Salix spp. includes: SABA3 SALIX SAMO2 SAPL2

Ecological Site: 172Xy100AK - Loamy Flood Plains
Cover type: Tall thinleaf alder/willow scrub
Seral status: mid
Number of stands: 20
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T2	30	2	1	5	8
white spruce	T2	15	2	1	3	6
balsam poplar	T3	55	3	1	8	12
white spruce	T3	70	3	1	10	14
feltleaf willow	SS	55	16	5	50	29
gray willow	SS	15	10	5	15	12
prickly rose	SS	50	3	1	15	13
russet buffalo-berry	SS	20	1	1	2	4
shrubby cinquefoil	SS	60	4	1	6	14
thinleaf alder	SS	100	68	40	90	82
willow	SS	100	46	15	85	68
Tilesius' wormwood	F	55	5	1	15	17
alpine sweet-vetch	F	45	4	1	10	14
anemone	F	40	1	1	2	6
arctic aster	F	75	3	1	5	14
common fireweed	F	85	3	1	15	17
horsetail	F	65	10	2	35	26
larkspur-leaf monkshood	F	60	1	1	2	7
marsh grass-of-parnassus	F	55	1	1	1	6
milk-vetch	F	15	5	2	7	8
northern bedstraw	F	30	3	1	5	10
northern blackberry	F	70	3	1	5	13
tall Jacob`s-ladder	F	40	1	1	2	6
tall bluebells	F	15	1	1	1	3
valerian	F	25	1	1	2	5
wintergreen	F	20	1	1	3	5
blue grass	G	20	3	1	5	8
bluejoint reedgrass	G	60	24	2	70	38
polar grass	G	75	13	1	70	31
slender wheatgrass	G	15	1	1	3	4
spruce-muskeg sedge	G	20	5	2	10	10
water sedge	G	25	16	1	35	20
Moss layer	M	100	11	1	25	33
Lichen layer	L	70	1	1	5	10
Bare soil	B	65	7	1	40	22
Litter and mulch	B	100	73	30	95	85
Surface water	B	15	2	1	5	5
Woody litter (>1" dia.)	B	95	6	1	20	24

Salix spp. includes: SABA3 SALIX SAMO2 SANO2 SAPL2

Ecological Site: 172Xy100AK - Loamy Flood Plains
Cover type: Tall thinleaf alder-feltleaf willow scrub
Seral status: early-mid
Number of stands: 21
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T2	14	3	1	4	6
white spruce	T2	14	5	4	5	8
balsam poplar	T3	43	8	1	20	18
white spruce	T3	48	2	1	5	10
feltleaf willow	SS	100	36	10	75	60
highbush cranberry	SS	19	3	1	5	7
little tree willow	SS	19	7	1	25	12
prickly rose	SS	33	5	1	15	13
russet buffalo-berry	SS	24	2	1	5	7
shrubby cinquefoil	SS	38	3	1	8	11
thinleaf alder	SS	100	45	15	70	67
willow	SS	52	5	1	20	17
Sitka burnet	F	14	3	2	4	7
Tilesius' wormwood	F	81	9	1	30	27
Unknown forb	F	14	1	1	2	4
alpine sweet-vetch	F	57	4	1	10	14
arctic aster	F	71	3	1	10	16
arctic sweet coltsfoot	F	14	1	1	1	3
common fireweed	F	67	11	2	40	27
horsetail	F	43	14	2	40	24
marsh grass-of-parnassus	F	33	1	1	4	6
northern bedstraw	F	24	2	1	3	7
northern blackberry	F	19	4	1	10	9
tall Jacob`s-ladder	F	33	2	1	7	7
tall bluebells	F	19	4	1	5	8
violet	F	14	3	1	4	6
wintergreen	F	14	2	1	4	5
blue grass	G	67	7	1	35	22
bluejoint reedgrass	G	57	29	1	85	41
polar grass	G	29	15	1	55	21
rough bent	G	14	1	1	2	4
slender wheatgrass	G	29	7	1	10	14
vanilla grass	G	19	2	1	4	5
wheatgrass	G	24	2	1	3	6
Moss layer	M	100	7	1	15	26
Lichen layer	L	71	1	1	3	7
Bare soil	B	71	8	1	75	24
Litter and mulch	B	95	45	1	95	66
Rock fragments	B	19	2	1	8	7
Woody litter (>1" dia.)	B	62	7	1	20	21

Salix spp. includes: SABA3 SAMO2 SANO2 SAPL2

Ecological Site: 172Xy100AK - Loamy Flood Plains
Cover type: Tall feltleaf willow/alder scrub
Seral status: early
Number of stands: 5
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

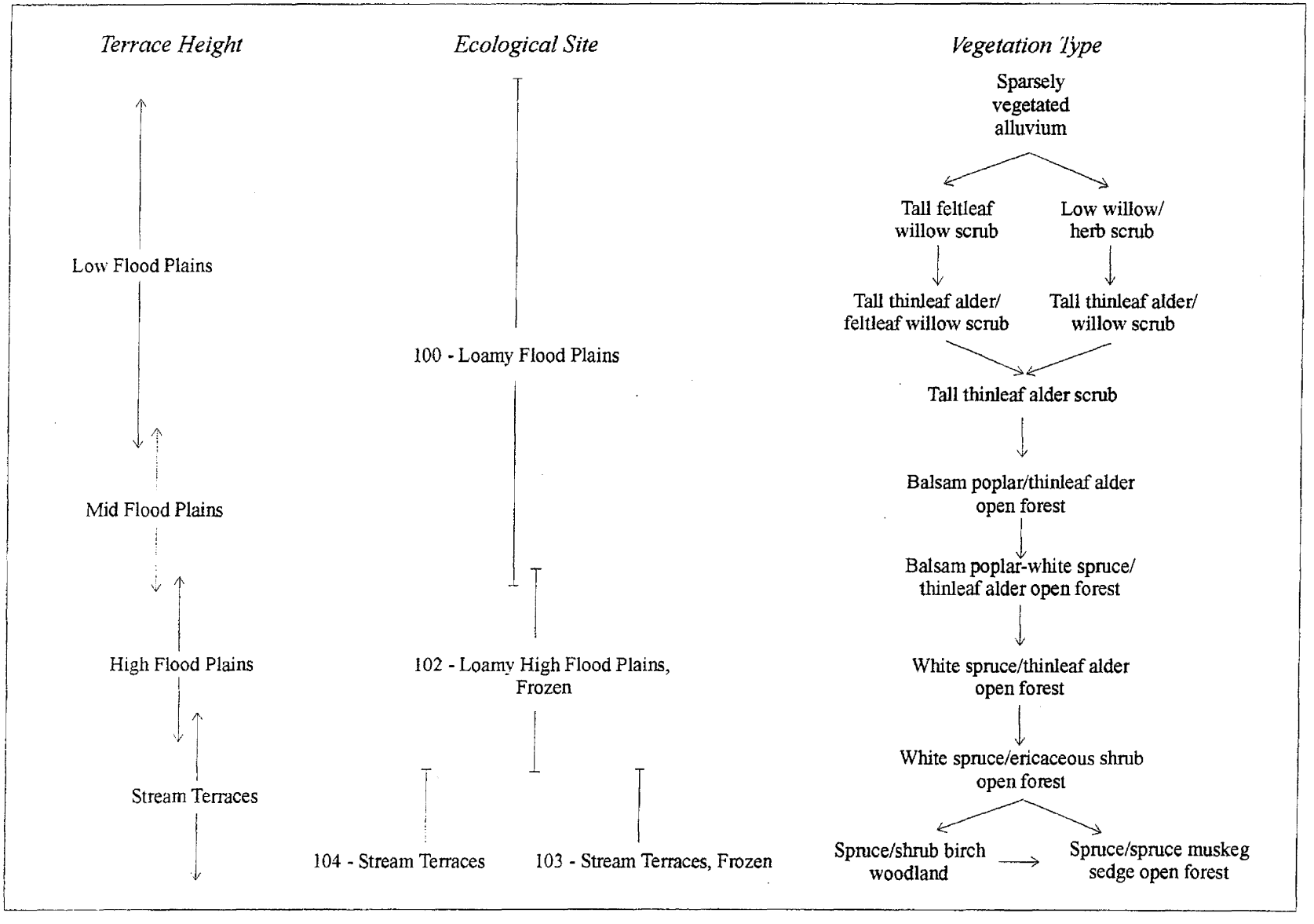
Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T3	80	12	1	30	31
white spruce	T3	40	2	1	3	8
feltleaf willow	SS	100	49	10	90	70
little tree willow	SS	60	1	1	1	5
russet buffalo-berry	SS	40	1	1	1	4
thinleaf alder	SS	100	6	2	10	24
willow	SS	80	5	1	12	20
Bodin's milkvetch	F	40	6	2	10	15
Tilesius' wormwood	F	80	6	1	10	21
alpine sweet-vetch	F	100	3	1	10	18
arctic aster	F	100	5	2	10	22
arctic sweet coltsfoot	F	20	1	1	1	3
bog yellowcress	F	20	1	1	1	3
common fireweed	F	80	3	1	7	15
dwarf fireweed	F	40	2	1	3	8
fleabane	F	20	1	1	1	3
gentian	F	20	1	1	1	3
horsetail	F	40	2	1	3	8
larkspur-leaf monkshood	F	40	1	1	1	4
marsh grass-of-parnassus	F	100	1	1	1	9
marsh horsetail	F	40	1	1	2	7
marsh willowherb	F	20	1	1	1	3
milk-vetch	F	40	11	2	20	21
northern blackberry	F	20	3	3	3	8
northern green orchid	F	40	1	1	1	4
ragwort	F	20	1	1	1	3
blue grass	G	80	3	1	5	15
bluejoint reedgrass	G	80	13	3	40	32
fescue	G	40	3	1	5	10
narrow false oat	G	20	1	1	1	3
polar grass	G	20	1	1	1	4
rough bent	G	40	1	1	2	7
rush	G	20	1	1	1	3
slender wheatgrass	G	80	5	1	15	21
vanilla grass	G	40	1	1	2	7
Moss layer	M	80	7	1	15	23
Bare soil	B	100	68	45	80	82
Litter and mulch	B	100	25	5	55	50
Rock fragments	B	60	4	1	10	15
Woody litter (>1" dia.)	B	100	1	1	1	7

Salix spp. includes: SABA3 SAMO2 SANO2 SAPL2

Ecological Site: 172Xy100AK - Loamy Flood Plains
Cover type: Low willow/herb scrub
Seral status: early
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T2	100	5	5	5	22
feltleaf willow	SS	100	3	3	3	17
little tree willow	SS	100	1	1	1	7
shrubby cinquefoil	SS	100	1	1	1	7
sweetgale	SS	100	5	5	5	22
thinleaf alder	SS	100	2	2	2	14
willow	SS	100	85	85	85	92
Sitka burnet	F	100	5	5	5	22
horsetail	F	100	1	1	1	10
northern bedstraw	F	100	1	1	1	10
northern blackberry	F	100	3	3	3	17
violet	F	100	1	1	1	7
bluejoint reedgrass	G	100	15	15	15	39
Moss layer	M	100	2	2	2	14
Bare soil	B	100	1	1	1	7
Litter and mulch	B	100	85	85	85	92
Rock fragments	B	100	1	1	1	7
Woody litter (>1" dia.)	B	100	5	5	5	22

Salix spp. includes: SABA3



General relationships between terrace height, ecological sites, and vegetation types in the alder zone, Gulkana River Area, Alaska.

Selected physical properties for typical stages of site progression on flood plains and stream terraces in the alder zone, Gulkana River Area, Alaska.

Ecological Site (stage)	Cover Type(s)	Terrace Height avg(rge)	Flooding Frequency	Depth to SSK avg(rge)	Thickness of OM avg(rge)	Depth to Water Table		Depth to Permafrost	
						Pedons w/ <60"	Depth when <60" avg(rge)	Pedons w/ <60"	Depth when <60" avg(rge)
		-- ft --		-- in --	-- in --	-- % --	-- in --	-- % --	-- in --
100 - Loamy Flood Plains (early)	SAAL SAAL/ALTE2	3 (1-6)	freq	20 (4-48)	0 (0-1)	94	37 (22-58)	0	-
100 - Loamy Flood Plains (mid)	ALTE2 ALTE2-SAAL ALTE2/SALIX	3 (1-7)	occas-freq	28 (3-60)	1 (0-2)	83	34 (12-58)	0	-
100 - Loamy Flood Plains (late)	POBA2/ALTE2 POBA2-PIGL/ALTE2	4 (2-8)	occas	26 (8-60)	1 (0-2)	62	42 (23-55)	0	-
102 - Loamy High Flood Plains, Frozen (PNC)	PIGL/ALTE2	6 (4-12)	occas-rare	31 (17-60)	3 (0-7)	26	40 (24-55)	61	32 (14-55)
102 - Loamy High Flood Plains, Frozen (post-PNC)	PIGL/erica	9 (4-25)	rare-none	30 (12-60)	5 (2-8)	15	40 (30-50)	65	31 (12-52)
103 - Stream Terraces, Frozen (PNC)	PICEA/CALU2	9 (4-20)	rare-none	30 (18-60)	7 (2-12)	100	8 (0-23)	100	15 (0-25)

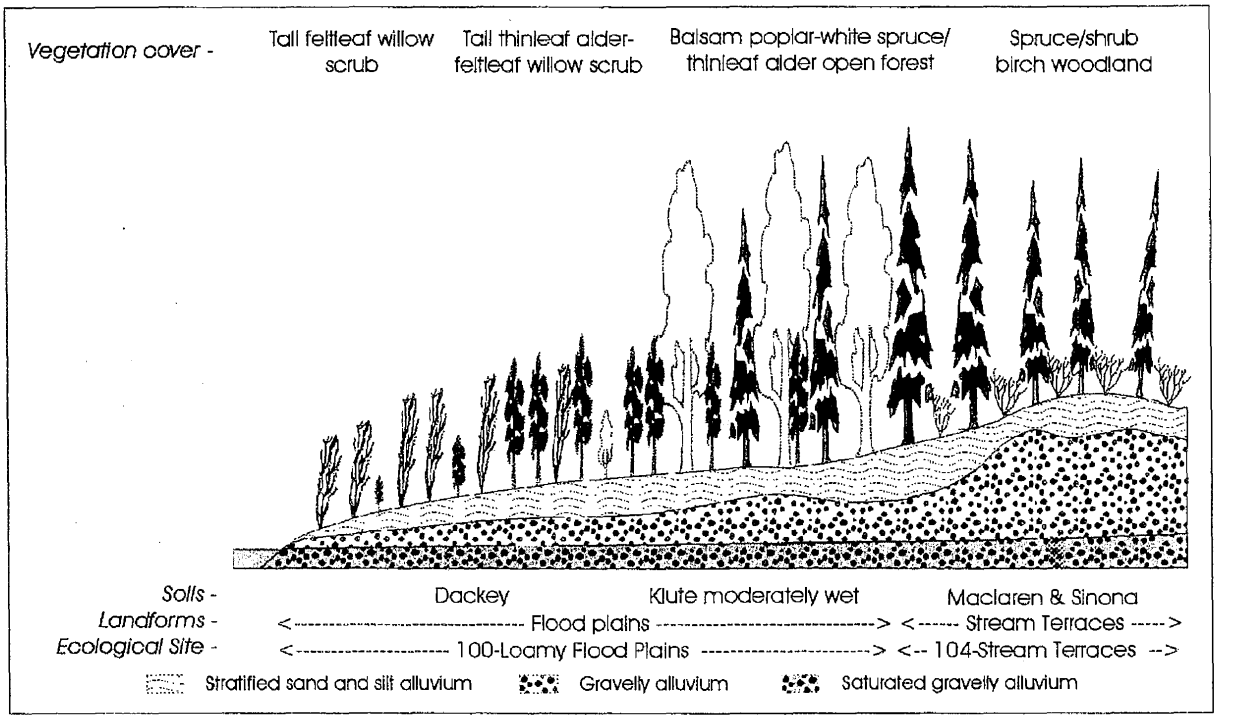
Notes:

Terrace height - estimated height of flood plain or stream terrace surface above the mid summer channel level.

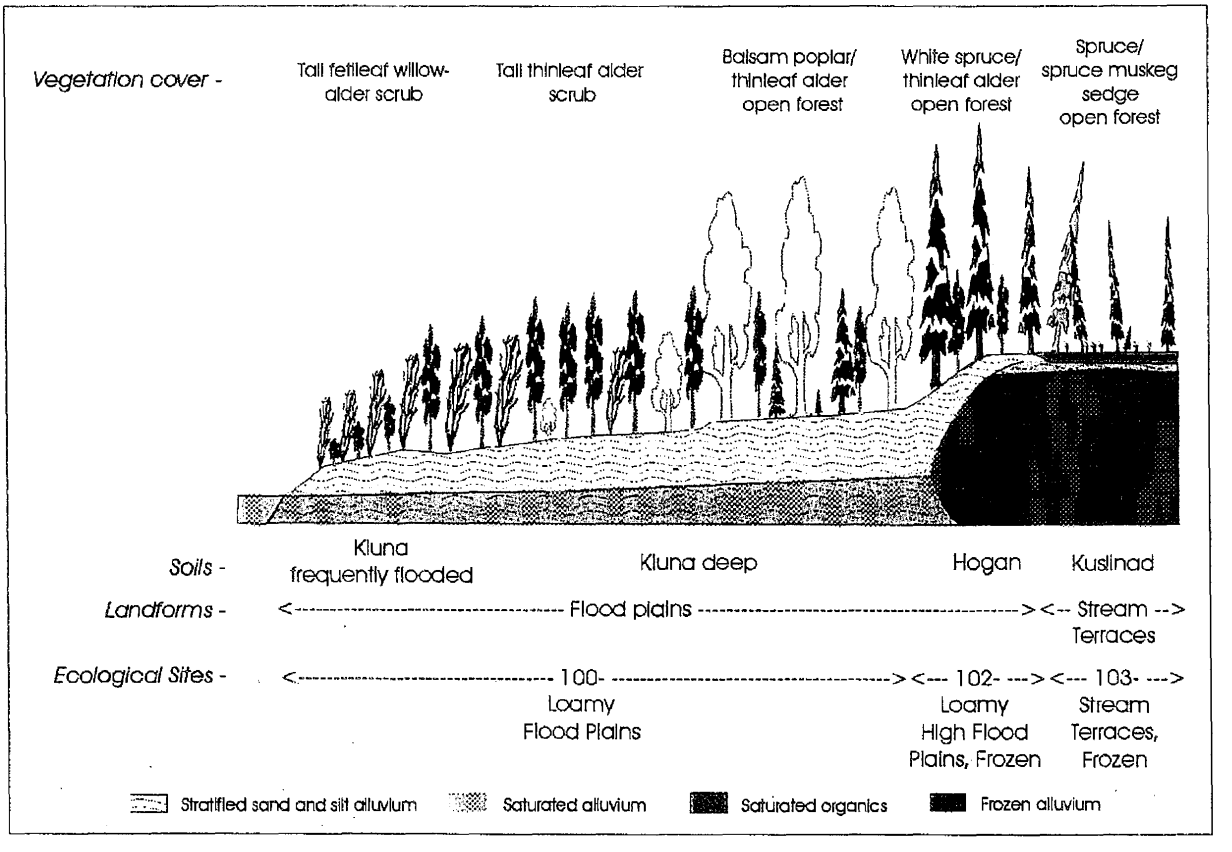
Depth to SSK - depth to sandy skeletal alluvium below the mineral soil surface in pedons without permafrost or in which the permafrost level was below the SSK contact; measured in the soil pit.

Thickness of OM - thickness of the surface organic mat; measured in the soil pit.

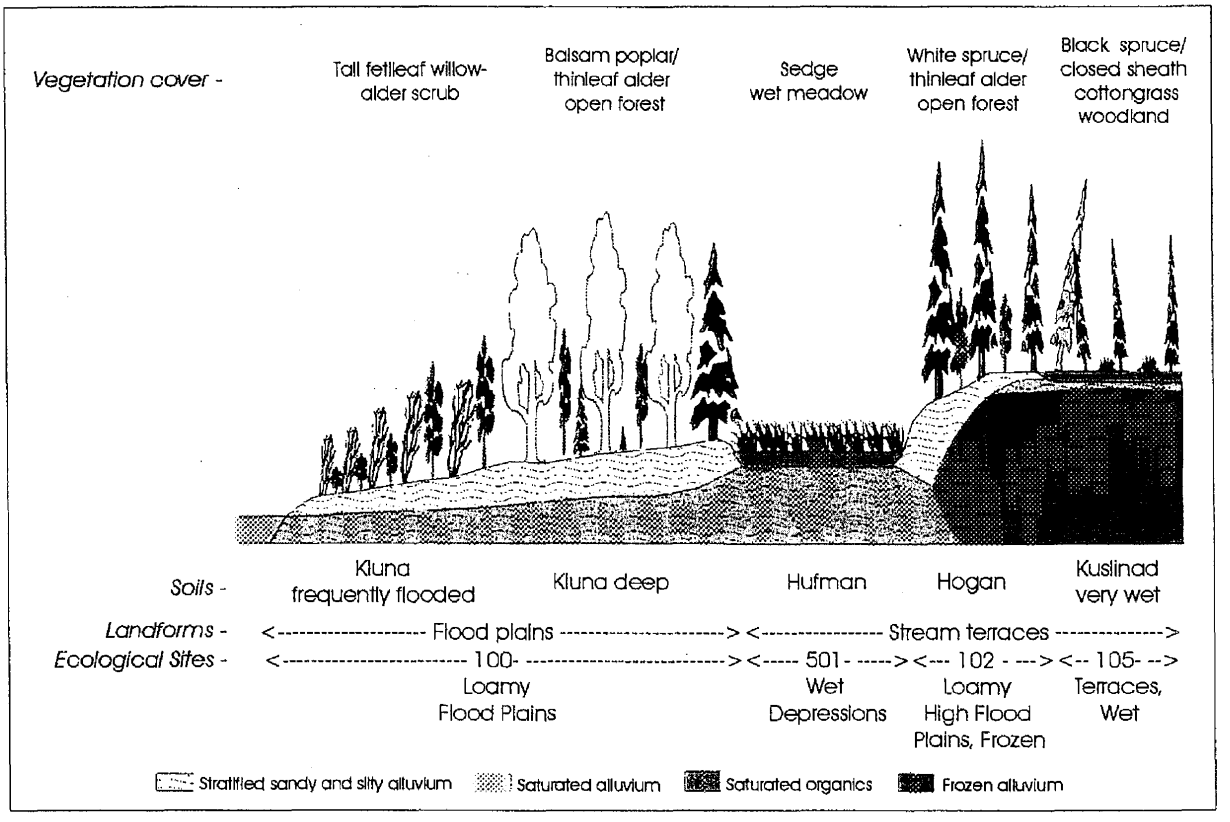
Depth to Water Table and Permafrost - Pedons w/ <60": pedons in which a water table or permafrost was present within 60 inches below the mineral surface. Depth when <60": depth below the mineral surface when present; measured in the soil pit.



Representative cross section in the alder zone along the Main Stem below Canyon Rapids.



Representative cross section in the alder zone along the middle West Fork.



Representative cross section in the alder zone along the middle West Fork.



Early vegetation succession on ecological site 172Xy100AK - Loamy Flood Plains. Immediately adjacent to the channel is Sedge-grass riparian meadow. Next is Tall feltleaf willow/alder scrub. Tall thinleaf alder scrub in back would have common balsam poplar seedlings and small saplings and probably some white spruce seedlings in the understory.

Loamy High Flood Plains
172Xy101AK

Standard Site Description

Site Number: 172Xy101AK
Site Name: Loamy High Flood Plains
Plant Name: PIGL/SALIX
Date: 1/98
Initials (Author's/Agency): DRK, MHC/USDA-NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____, _____

(3) Typical Location:

Legal: NE 1/4; NW 1\4; NE 1\4; Sec. 07 T. 12N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: flood plains
(b) Specific: High, _____, _____
(c) Microrelief: plane, _____, _____
(2) Elevation/Aspect:
Low 2300 / All High 2600 / All
(3) Slope: Low: 0 % High 10 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	___._	___._	___._	___._	___._	___._
2.	_____	___._	___._	___._	___._	___._	___._
3.	_____	___._	___._	___._	___._	___._	___._
4.	_____	___._	___._	___._	___._	___._	___._
5.	_____	___._	___._	___._	___._	___._	___._

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width	
1.	___	___	___	___	___	___	___	A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___	B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___	C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___	D) Not Determined
5.	___	___	___	___	___	___		

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____
(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____._ to _____ ._

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic, _____
b. Soil Temperature Regime: Cryic, _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson Alaska
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Typic Cryofluvents	CL/SorSSK, mixed, non acid
(2)	"	CL, mixed, non acid
(3)	Pergelic Cryorthents	L, mixed, nonacid
	Oxyaquic Cryorthents	SSK, mixed, non acid

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: Alluvium, _____

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 0 (inches) Maximum 4 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Ochric Epipedon
(2) Thickness: Minimum 0 (inches) Maximum 8 (inches)

e. Surface Texture: VFSL, FSL, SiL, _____

f. Soil Depth; (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 3 (inches) Maximum 19 (inches)

h. AWC for Effective Plant Root Zone: Low .13 High .16 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 12 (inches) Maximum 760 (inches)
(2) Average Thickness: >50 (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 12 (inches) Maximum >60 (inches)
(2) Average Thickness >50 (inches)

l. Reaction:

	Depth Range (Inches) Minimum	Maximum	Amount (Ph) Low	High
Surface Layers:	0	9	5.6	7.8
Layers:	9	33	6.1	8.4
All Other Layers:	33	60	6.6	8.4

m. Salinity:

	Depth Range (Inches) Minimum	Maximum	Amount (mmhos/cm) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Maximum	Amount (SAR) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	F	M	M	M	M	M	F	F	F
4-10"	↓	↓	↓	↓	↓	↓	↓	↓	↓	M	↓	↓
10-20"	↓	↓	↓	↓	F	↓	↓	↓	↓	↓	↓	↓
20-40"	↓	↓	↓	↓	M	↓	↓	↓	↓	↓	M	↓
40-60"	M	M	M	M	↓	↓	↓	↓	↓	↓	↓	M

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 3 (Ft) Maximum >5 (Ft)
(2) Kind: apparent
(3) Month(s): May to Sep

q. Flooding:
(1) Frequency: rare - occasional
(2) Duration: brief
(3) Months: Apr to Sep

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	20 - 60	40 - 65
Shrubs	35 - 90	3.5 - 6
Grasses, Grass Like, & Forbs	30 - 85	1 - 2.5
Cryptogams	15 - 85	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	15 - 60	_____ - _____
P	0 - 10	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 50 - 160 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL	white spruce	50-68	--	15-65	--	
POBAZ	balsam poplar	--	--	0-20	--	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	

Site Index References: Farr (1967)

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIGL	white spruce		0-25	--	--	
* SALIX	willow		10-75	--	--	
VAUL	bog blueberry		0-20	--	--	
POFR4	shrubby cinquefoil		0-15	--	--	
VAVI	lowbush cranberry		0-10	--	--	

Other ..... ____ - ____ NTE ____ ea

SARE2	net vein willow	0-20
ROAC	prickly rose	0-10
EMNI	black crowberry	0-5

* includes SAPL2, SABA3, and SAMO2

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
ARLAZ	polar grass		0-20	___-___	___-___	
CACAA	bluejoint reedgrass		0-10	___-___	___-___	
CAREX	sedge		0-30	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
EQUIS	horsetail		1-80	___-___	___-___	
PEFRS	arctic sweet coltsfoot		0-30	___-___	___-___	
COCA13	bunchberry dogwood		0-10	___-___	___-___	
MEPA	tall bluebells		0-15	___-___	___-___	
RUAR	northern blackberry		0-7	___-___	___-___	

Other ..... ___-___NTE___ea

EPANZ	common fireweed	0-6
HEAL	alpine sweet-vetch	0-7

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	0 - 15	____-____	____-____
_____	_____	____-____	____-____	____-____
_____	_____	____-____	____-____	____-____
_____	_____	____-____	____-____	____-____
_____	_____	____-____	____-____	____-____
Other.....			____-____NTE____ea	
_____	_____			
_____	_____			
_____	_____			
_____	_____			

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total moss	15 - 85	____-____	____-____
_____	_____	____-____	____-____	____-____
_____	_____	____-____	____-____	____-____
_____	_____	____-____	____-____	____-____
_____	_____	____-____	____-____	____-____
Other			____-____NTE____ea	

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		25
Late (Good)		
Mid (Fair)		
Early (Poor)		
Decadent, part climax		3

e. Vegetation Narrative:

5. Wildlife

a. Species List:

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	FP22	Kluna
	FP23	Hogen cool
	FP6	"
	ST1	Klute
	"	Kluna
	ST11	Klute
	"	Tangoe occasionally flooded
	ST13	"
	"	Klute occasionally flooded
	ST31	Hogen cool

172Xy101AK - Loamy High Flood Plains
White spruce/willow open forest

Part A: Description of Site

1.c. Landscape Narrative: This site consists of level to moderately sloping high flood plains formed in stratified sandy and silty alluvium over very gravelly and cobbly alluvium. Terrace height above the mean summer channel level is typically 3 to 10 feet (0.9 to 3.0 m) and the site is occasionally to rarely flooded. In many areas, particularly on the highest flood plains positions, permafrost is present within the soil profile. Elevation is generally 2300 to 2600 feet (701 to 792 m).

In the Gulkana River area, this site is common along the Middle Fork, the Main Stem north of canyon rapids, and the upper reaches of the North and South Branches. It also occurs along major side streams and drainages above the river corridor. This site undoubtedly occurs along the other rivers and streams in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is 1 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 18 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The weakly developed soils on this site typically have a mantle of stratified sandy and silty alluvium 12 to over 60 inches (30 to 152 cm) thick over very gravelly and cobbly alluvium. Rarely, the sandy and silty layer is less than 12 inches (30 cm; Tangoe soils). The depth to seasonal high water table ranges from 40 to over 60 inches (102 to 152 cm) and the soils are moderately well to well drained. Aquic conditions, including redox depletions and/or a reduced matrix are found on occasions below 40 inches (102 cm). On some of the older terraces, permafrost is found between about 20 to more than 60 inches (102 to 152 cm). Permafrost soils usually do not have a perched water table on the permafrost surface.

4.e. Vegetation Narrative: White spruce/willow open forest is the correlated PNC on this site. This PNC is best characterized as a riparian plant association and may only exist during the life span of the initial generation of trees.

5.b. Wildlife Narrative: This site is utilized by a wide variety of wildlife. Dense *Salix* spp. in the understory provides abundant moose browse; moderate to severe hedging is observed in most stands. This site also provides staging areas for bears fishing for salmon in summer and fall. Bald Eagles use tall *Picea glauca* and the occasional *Populus balsamifera* for perches and occasionally for nesting, particularly those trees close to the river channel. Beaver activity is common throughout and adjacent to areas of this site.

6. Community Dynamics (Fire, etc.): This site is susceptible to wild fire, which are commonly recurring events in the Copper River basin. Because of its thin bark, *Picea glauca* is poorly adapted to survive wild fire and most trees are usually killed when a stand burns. The *Salix* spp. that dominant the forest understory readily sprout after burning and post-fire succession would be expected to pass through a short herb-shrub

sprout stage to a dense low willow scrub stage. If suitable seed trees remain in or adjacent to the burned stand, *Picea glauca* should eventually re-establish itself. The presence of *Picea mariana* in the pre-fire stand or in nearby unburned stands could lead to a black spruce or mixed spruce stage in the post-fire succession.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy103AK - Stream Terraces, Frozen

b. Riparian or Wetland:

172Xy200AK - Gravelly Flood Plains, Moderately Wet

172Xy201AK - Loamy Flood Plains, Moderately Wet

172Xy500AK - Loamy Riverbanks

8. List of Competing Sites (number and names):

172Xy101AK - Loamy High Flood Plains
White spruce/willow open forest

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progressions:

(1) Aggradation: Based on observations and data collected in the Gulkana River area, this site appears to develop from 172Xy200AK - Gravelly Flood Plains, Moderately Wet or 172Xy201AK - Loamy Flood Plains, Moderately Wet. In some places, a short steep escarpment separates adjacent flood plain levels. The higher flood plains support White spruce/willow forest characteristic of site 172Xy101AK - Loamy High Flood Plains while Low willow/herb scrub is found on the low flood plains characteristic of sites 172Xy200AK and 172Xy201AK. In a many places on islands and in areas of high channel sinuosity, a gradual increase in terrace height away from the channel is evident. The transition to site 172Xy101AK - Loamy High Flood Plains and White spruce/willow open forest on the higher positions usually includes a relatively narrow zone dominated by white spruce saplings and small trees protruding through the dense willow scrub.

Site 172Xy101AK - Loamy High Flood Plains is the end point of site progression and vegetative succession on flood plains. Over the life of the initial white spruce stand, the willow understory gradually is replaced by ericaceous shrubs and the organic mat on the soil surface accumulates and thickens. Continued development and thickening of the organic mat results in a gradual decrease in soil temperatures and depth to permafrost and a reduction in nutrient availability and cycling. Observations in the Gulkana River area suggest that, without some degree of disturbance, which delays or retards succession, permafrost develops within the soil profile and site productivity decreases markedly towards the end of the life span of the original forest stand. Without disturbance, site progression and vegetative succession would lead to site 172Xy104AK - Stream Terraces and Spruce/shrub birch woodland and in some places possibly even 172Xy103AK - Stream Terraces, Frozen and Spruce/spruce muskeg sedge open forest.

The transition between 172Xy101AK - Loamy High Flood Plains and 172Xy104AK - Stream Terraces is usually indicated by the White spruce/ericaceous shrub open forest vegetation type. This type consists of decadent stand of tall, large diameter white spruce, many of which have already died and fallen partly to completely over. Below the deteriorating overstory is a younger, smaller stand of mixed white and black spruce. Trees within this layer often appear poorly formed, slow growing, and have yellowish green foliage characteristics of cold, low productivity sites. Ericaceous shrubs are prominent in the understory by this point.

1.e. Insect and Disease Pests and Animal Damage: Most stands experience seasonally heavy browsing by moose and the willow is often moderately to severely hedged. Beaver cut willow stems are common in many places.

1.g. Recreation and Natural Beauty: Deteriorating spruce stands in the transitional zone between high flood plains and stream terraces often contain abundant downfall suitable for firewood. Standing dead trees will provide a future source of firewood.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy101AK - Loamy High Flood Plains
Cover type: White spruce/willow open forest
Seral status: PNC
Number of stands: 25
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

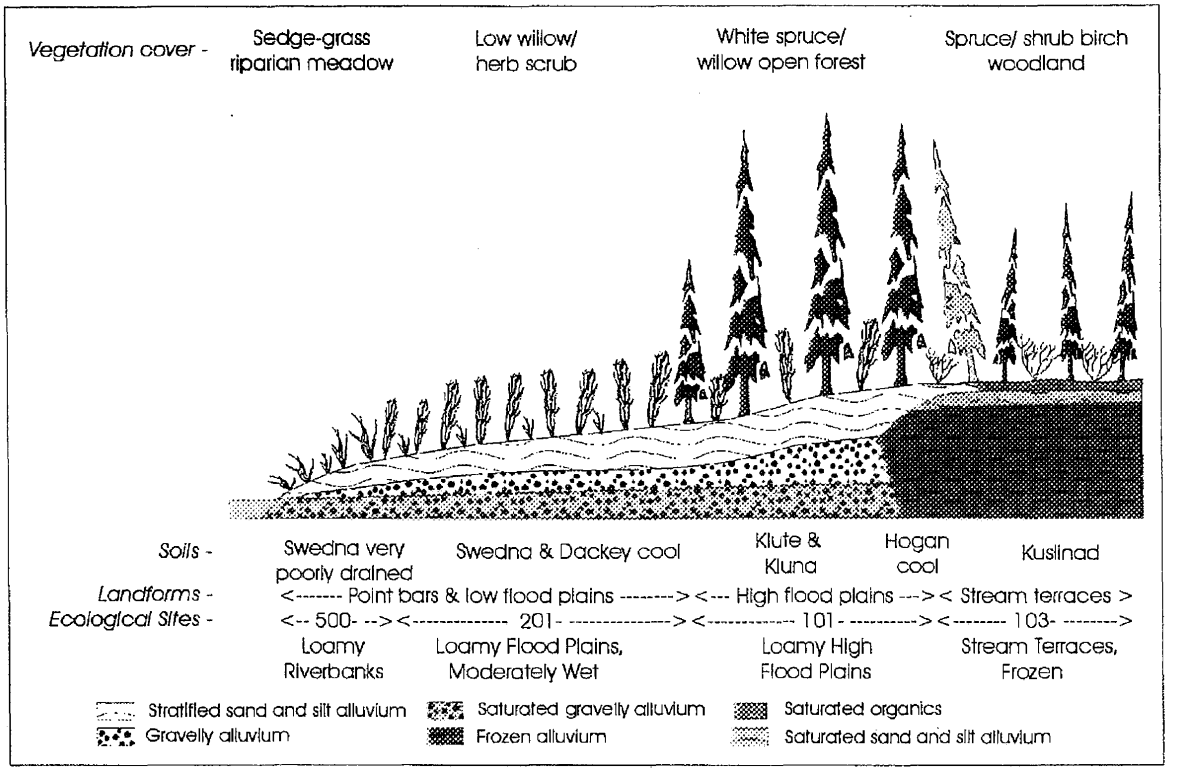
Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	16	13	5	20	14
white spruce	T1	80	29	7	65	48
white spruce	T2	48	30	10	60	38
white spruce	T3	64	5	1	25	19
Labrador-tea	SS	40	3	1	10	11
black crowberry	SS	64	2	1	5	11
bog blueberry	SS	92	7	1	20	26
feltleaf willow	SS	28	6	1	10	13
lowbush cranberry	SS	80	3	1	10	15
net vein willow	SS	12	12	1	20	12
prickly rose	SS	28	4	1	10	11
red bearberry	SS	24	2	1	7	7
russet buffalo-berry	SS	36	2	1	5	8
shrub birch	SS	40	2	1	5	9
shrubby cinquefoil	SS	60	3	1	15	14
willow	SS	100	40	7	75	63
American twinflower	F	12	1	1	2	4
Canadian bunchberry	F	44	4	1	10	14
Sitka burnet	F	12	1	1	3	4
Tilesius' wormwood	F	36	2	1	5	7
alpine sweet-vetch	F	48	2	1	7	10
anemone	F	16	1	1	3	4
arctic aster	F	20	1	1	1	3
arctic sweet coltsfoot	F	68	7	1	30	21
boreal sagebrush	F	12	1	1	3	4
cloudberry	F	12	1	1	2	3
common fireweed	F	68	2	1	6	11
felwort	F	16	1	1	3	4
horsetail	F	92	32	2	80	54
larkspur-leaf monkshood	F	76	1	1	2	7
marsh grass-of-parnassus	F	12	1	1	1	2
milk-vetch	F	20	1	1	2	4
northern bedstraw	F	36	1	1	5	7
northern blackberry	F	76	2	1	7	12
ragwort	F	36	1	1	1	4
serpent-grass	F	12	1	1	1	2
single delight	F	32	1	1	1	4
starwort	F	12	1	1	1	2
stonecrop	F	12	1	1	1	2
tall Jacob`s-ladder	F	48	1	1	2	6
tall bluebells	F	72	2	1	15	13
valerian	F	56	1	1	5	7
western arctic shootingstar	F	12	1	1	1	2
wintergreen	F	44	1	1	2	7
blue grass	G	28	3	1	15	9
bluejoint reedgrass	G	44	4	1	7	13
polar grass	G	72	7	1	20	22
rough fescue	G	16	1	1	2	4
sedge	G	20	3	1	5	8
water sedge	G	12	10	1	30	11
Moss layer	M	100	58	15	85	76
Lichen layer	L	92	4	1	15	20
Bare soil	B	24	1	1	3	5
Litter and mulch	B	100	14	1	60	38
Woody litter (>1" dia.)	B	60	4	1	10	15

Salix spp. includes: SABA3 SALIX SAMO2 SAPL2

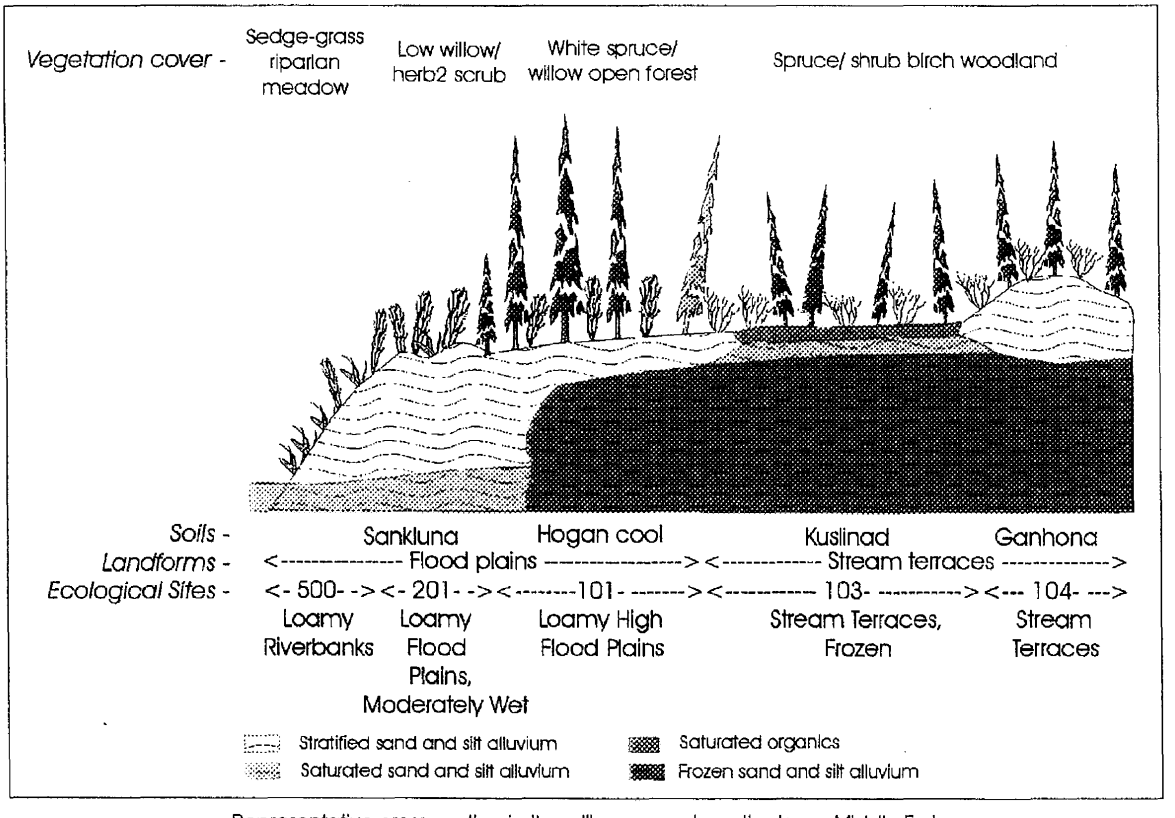
Ecological Site: 172Xy101AK - Loamy High Flood Plains
Cover type: White spruce/ericaceous shrub open forest
Seral status: post-PNC
Number of stands: 3
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	100	58	45	65	76
white spruce	T3	33	1	1	1	4
Labrador-tea	SS	33	2	2	2	8
black crowberry	SS	100	4	1	5	19
bog blueberry	SS	100	18	10	25	43
grayleaf willow	SS	67	2	1	3	12
lowbush cranberry	SS	100	17	1	30	41
prickly rose	SS	33	5	5	5	13
red bearberry	SS	67	2	1	2	10
russet buffalo-berry	SS	67	6	1	10	19
shrubby cinquefoil	SS	67	1	1	2	9
stink currant	SS	33	1	1	1	4
willow	SS	100	7	1	11	27
Canadian bunchberry	F	33	3	3	3	10
alpine sweet-vetch	F	67	5	4	5	17
arctic lupine	F	33	1	1	1	4
arctic sweet coltsfoot	F	100	3	1	5	16
common fireweed	F	100	1	1	1	9
horsetail	F	100	17	5	30	41
larkspur-leaf monkshood	F	67	1	1	1	6
milk-vetch	F	33	1	1	1	4
northern bedstraw	F	33	1	1	1	4
northern blackberry	F	100	2	1	3	14
serpent-grass	F	33	1	1	1	4
single delight	F	33	1	1	1	4
tall bluebells	F	67	3	2	3	13
valerian	F	100	1	1	1	7
violet	F	33	1	1	1	4
wintergreen	F	67	3	2	3	13
blue grass	G	33	1	1	1	6
bluejoint reedgrass	G	67	2	1	2	10
polar grass	G	67	1	1	1	8
rough fescue	G	33	1	1	1	4
Moss layer	M	100	73	65	85	86
Lichen layer	L	100	4	3	5	21
Bare soil	B	100	2	1	3	12
Litter and mulch	B	100	15	5	25	39
Woody litter (>1" dia.)	B	100	10	10	10	32

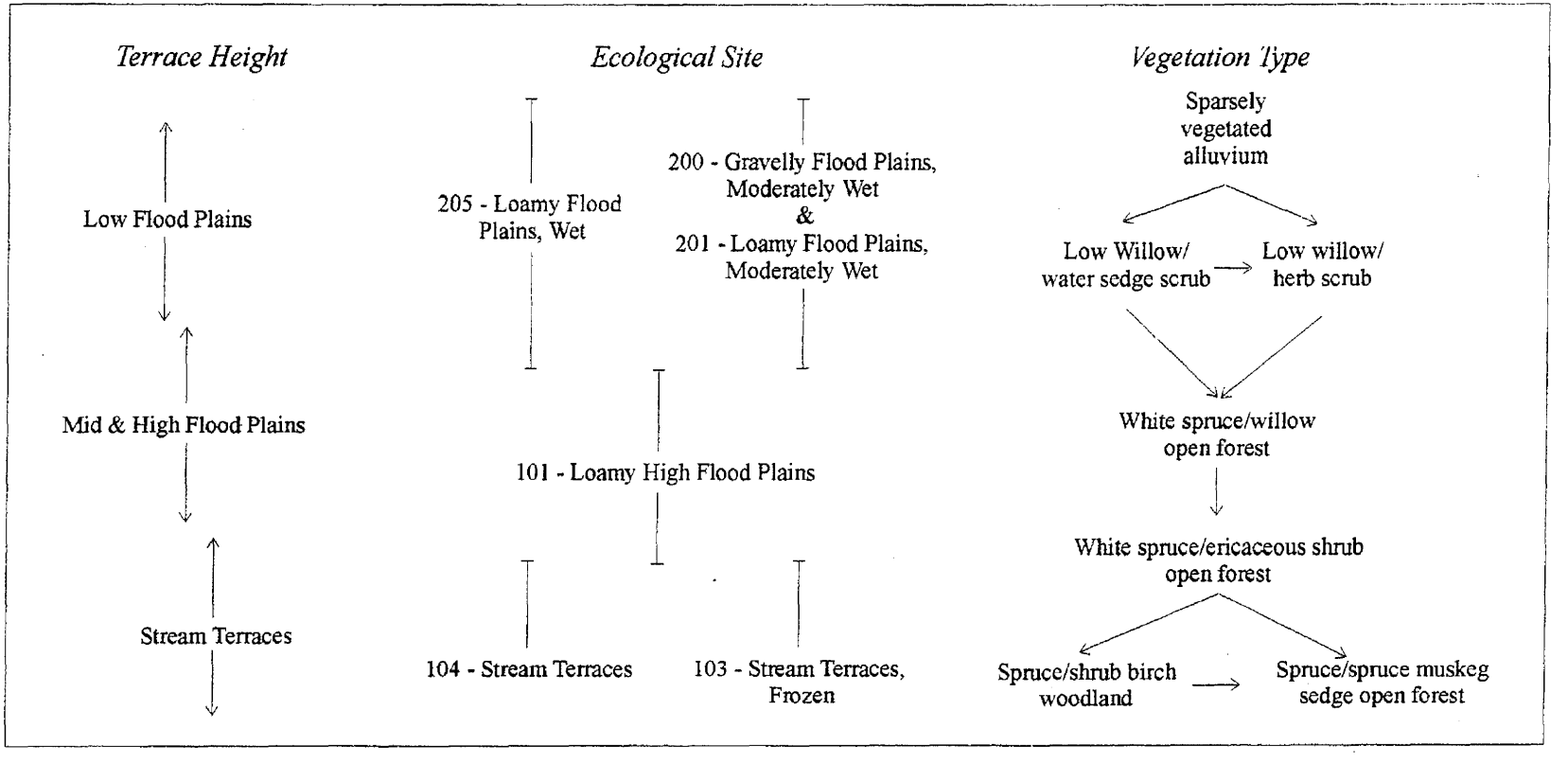
Salix spp. includes: SABA3 SAMO2 SAPL2



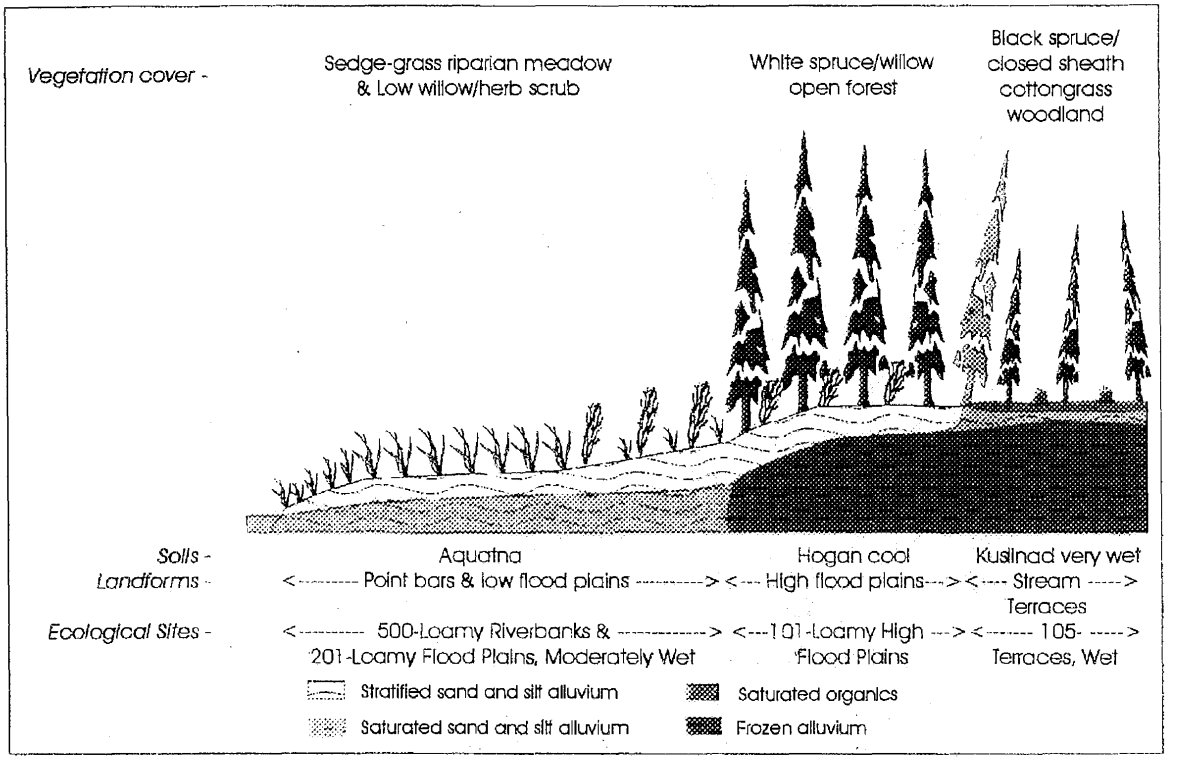
Representative cross section in the willow zone along the upper Main Stem.



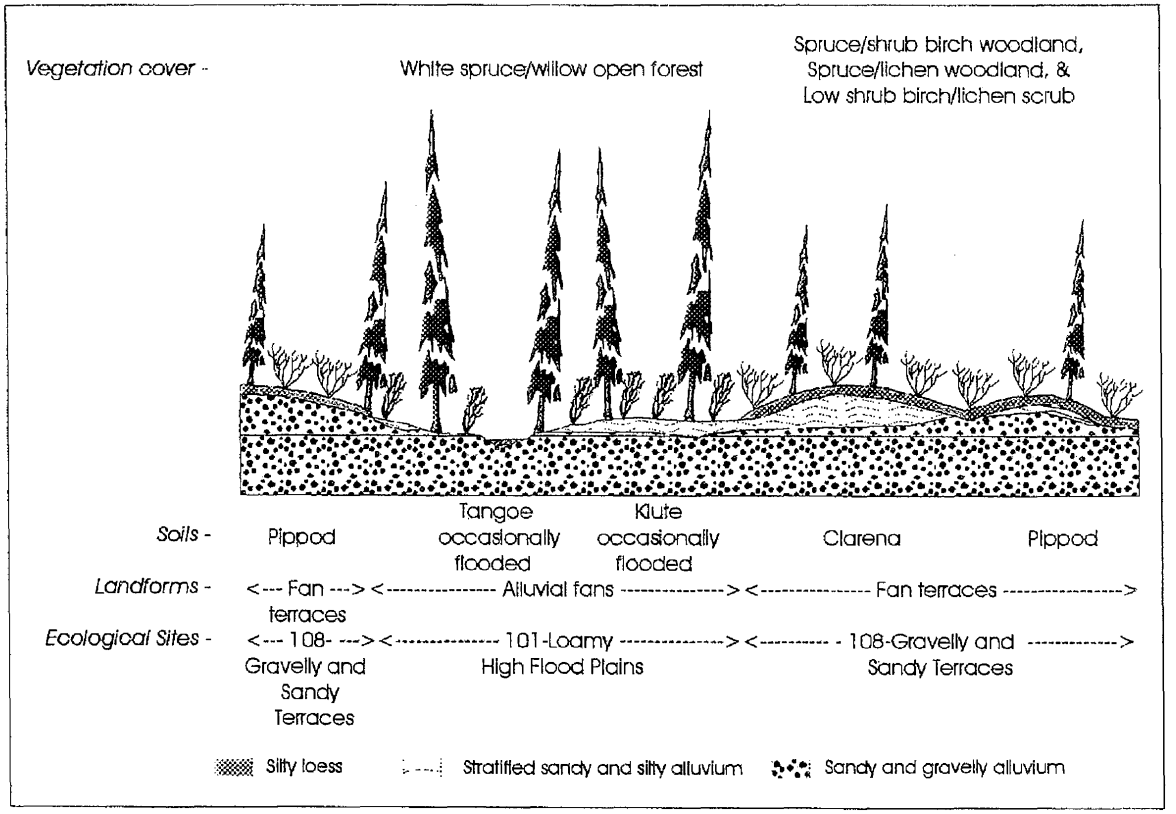
Representative cross section in the willow zone along the lower Middle Fork.



General relationships between terrace height, ecological sites, and vegetation types in the willow zone, Gulkana River Area, Alaska.



Representative cross section in the willow zone along the upper South Branch.



Representative cross section across an alluvial fan along the upper Middle Fork.



Representative stand of White spruce/willow open forest on ecological site 172Xy101AK - Loamy High Flood Plains. Scarring on the boles of white spruce is caused by ice jams on the adjacent river channel.

Loamy High Flood Plains, Frozen
172Xy102AK

Standard Site Description

Site Number: 17Rxy102AK
Site Name: Loamy High Flood Plains
Plant Name: PIGL/ALTE2
Date: Jan 1998
Initials (Author's/Agency): DRK, MHC/USDA NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____, _____

(3) Typical Location:

Legal: SW 1/4; SE 1\4; SW 1\4; Sec. 14 T. 09N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

[1] O

b. Physiography:

(1) Landform:
(a) Broad: Flood plain
(b) Specific: mid - high, _____,
(c) Microrelief: plane, complex,
(2) Elevation/Aspect:
Low 1850 / All High 2400 / All
(3) Slope: Low: 0 % High 6 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	___._____	___._____	___._____	___._____	___._____	___._____
2.	_____	___._____	___._____	___._____	___._____	___._____	___._____
3.	_____	___._____	___._____	___._____	___._____	___._____	___._____
4.	_____	___._____	___._____	___._____	___._____	___._____	___._____
5.	_____	___._____	___._____	___._____	___._____	___._____	___._____

	Materials Channel Bed			Materials Bank			Confinement Ratio of Floodplain width/bankfull width
1.	___	___	___	___	___	___	___ A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___ B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___ C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___ D) Not Determined
5.	___	___	___	___	___	___	

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____
(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season			
	Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____._ to _____ ._

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic _____, _____
b. Soil Temperature Regime: Pergelic _____, _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 15 to 19 (inches)
g. Frost-Free Period: 60 to 90 (days) (23 °F base temp.)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.65	.74	.64	.54	.66	2.11	3.06	2.11	1.56	1.46	.70	.98	
LOW													
TEMP HI	6.5	16.5	29.3	39.5	53.4	61.7	66.3	63.1	52.1	34.7	16.4	4.4	(°F)
MEAN	-2.3	4.0	13.0	26.8	40.7	49.3	54.1	49.9	40.1	24.8	5.3	-4.0	
LOW	-12.0	-3.6	-2.3	14.1	27.9	36.9	41.9	36.7	28.0	15.2	-4.3	-12.5	

i. Climatic Weather Station:

(1) Location: Sourdough
(2) Station Number: 509625

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Pergelic Cryorthents	loamy, mixed, nonacid
(2)		
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: Alluvium, _____

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 1 (inches) Maximum 3 (inches)
(b) Type E

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: OCHRIC Epipedon
(2) Thickness: Minimum 2 (inches) Maximum 8 (inches)

e. Surface Texture: VFSL, FSL, SIL, _____

f. Soil Depth; (not to exceed 2 classes)
Minimum 14 (inches) Maximum 37 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 2 (inches) Maximum 12 (inches)

h. AWC for Effective Plant Root Zone: Low .13 High .16 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum _____ (inches) Maximum _____ (inches)
(2) Average Thickness: _____(inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum _____(inches) Maximum _____(inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches) Minimum	Maximum	Amount (Ph) Low	High
Surface Layers:	2	9	5.6	6.5
Layers:	14	37	6.1	7.9
All Other Layers:				

m. Salinity:

	Depth Range (Inches) Minimum	Maximum	Amount (mmhos/cm) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Maximum	Amount (SAR) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0- 4"	F	F	F	M	M	M	M	M	M	F	F	F
4-10"	↓	↓	↓	F	↓	↓	↓	↓	↓	M	M	↓
10-20"	↓	↓	↓	↓	F	↓	↓	↓	↓	↓	F	↓
20-40"	↓	↓	↓	↓	↓	F	F	F	F	F	↓	↓
40-60"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 3 (Ft) Maximum >5 (Ft)
(2) Kind: Apparent
(3) Month(s): Apr to Sep

q. Flooding:
(1) Frequency: Rare
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	2.5 - 15	15 - 70
Shrubs	30 - 90	10 - 20
Grasses, Grass Like, & Forbs	40 - 80	1 - 3
Cryptogams	50 - 80	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N - R	15 - 90	_____ - _____
P	1 - 20	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 130 - 300 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL	White spruce	50-80	___-___	25-75	___-___	_____
POBAZ	Balsam poplar	___-___	___-___	0-10	___-___	_____
_____	_____	___-___	___-___	___-___	___-___	_____
_____	_____	___-___	___-___	___-___	___-___	_____
_____	_____	___-___	___-___	___-___	___-___	_____

Site Index References: Farr 1967

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIGL	White spruce	_____	1-5	___-___	___-___	_____
* ALTE	thinleaf alder	_____	10-70	___-___	___-___	_____
ROAC	prickly rose	_____	1-20	___-___	___-___	_____
LEDUM	Labrador-tea	_____	1-30	___-___	___-___	_____
VAUL	bog blueberry	_____	1-30	___-___	___-___	_____

Other ..... ___-___NTE___ea

SALIX	willow	0-15
VAVI	lowbush cranberry	1-10
EMNI	black crowberry	1-30
_____	_____	

* includes ALCRG

(b) Grasses and Grass Like ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
ARLA2	polar grass		0-10	___-___	___-___	
CALA4	bluejoint reedgrass		1-15	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ____-____NTE____ea

(c) Forbs ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
EQUIS	horsetail		1-40	___-___	___-___	
MESA	tall bluebells		0-10	___-___	___-___	
COCA2	bunchberry dogwood		0-10	___-___	___-___	
PYAS	wintergreen		0-3	___-___	___-___	
PEFR6	arctic sweet coltsfoot		0-15	___-___	___-___	

Other ..... ____-____NTE____ea

HEA-	alpine meadow willow	0-4
ART-	Tilesius wormwood	0-5
EPAN2	Common fireweed	0-2
LIBO3	American twinflower	0-15

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	1 - 10	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total moss	50 - 90	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		17
Late (Good)		
Mid (Fair)		
Early (Poor)		
Deteriorating (pot potential)		18

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	FP3I	Hogan
	FP3Z	Hogan
	ST3	Hogan
	ST4	Hogan

172Xy102AK - Loamy High Flood Plains, Frozen
White spruce/thinleaf alder open forest

Part A: Description of Site

1.c. Landscape Narrative: This site consists of level to moderately sloping, high flood plains formed in stratified loamy alluvium over very gravelly alluvium. Terrace height above the mean summer channel level typically ranges from 5 to 10 feet (1.5 to 3.0 m) and the site is rarely flooded. The surface organic mat is moderately thick and permafrost is usually present within the soil profile. Elevation is generally below about 2400 feet (732 m).

In the Gulkana River area, this site is found along the Main Stem south of canyon rapids and along the lower North and South Branches and the West Fork; to Sourdough. This site undoubtedly occurs along the other low and moderate gradient rivers and streams elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 19 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The weakly developed soils on this site typically have a mantle of stratified sandy and silty alluvium 12 to more than 60 inches (30 to 152 cm) thick over very gravelly alluvium. The organic mat ranges from 2 to 9 inches (5 to 23 cm) thick and permafrost is usually present at a depth of 14 to 37 inches (36 to 94 cm). Except for a thin saturated zone in spring and early summer, no perched water table is found at the permafrost contact and the soils are well drained.

4.e. Vegetation Narrative: White spruce/thinleaf alder open forest is the correlated PNC on this site.

5.b. Wildlife Narrative: This site is utilized by a wide variety of wildlife. Migrating caribou frequently pass through areas of this site. Limited observations suggest that caribou generally pass through areas closely adjacent to both the river channel and the lacustrine uplands, apparently avoiding extensive dense tall shrub and forest vegetation. *Salix alexensis* and other willows are occasional to common in many stands and provide limited moose browse. Mature stands of *Picea glauca* provide habitat for marten and weasels, particularly areas with abundant woody debris on the forest floor. Bald Eagles use tall *Populus balsamifera* and occasionally *Picea glauca* for nest trees; both trees are utilized for perches. The spruce forest provides high quality Spruce Grouse habitat.

6. Community Dynamics (Fire, etc.): This site is susceptible to wild fires, which are commonly recurring events in the Copper River basin. In most instances, fire would kill the *Picea glauca* trees and destroy much, if not all, of the existing forest overstory and burn most of the understory back to ground level. Fire also would blacken and at least partially destroy the moss-organic layer on the soil surface, leading to soil warming, a drop in the permafrost level, and increased nutrient availability. It is unlikely, however,

that post fire vegetative succession would pass through same seral stages characteristic of flood plain succession that led to the original White spruce/thinleaf alder open forest. The flooding regime, soil moisture patterns, and growing conditions associated with flood plain succession not longer exist. In all probability, vegetative succession would pass through a sequence of scrub and woodland seral stages leading to mixed spruce with *Betula glandulosa* and ericaceous shrubs in the understory and a well-developed moss-organic layer on the soil surface similar to Spruce/shrub birch woodland.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy100AK - Loamy Flood Plains

172Xy103AK - Stream Terraces, Frozen

172Xy104AK - Stream Terraces

b. Riparian or Wetland:

8. List of Competing Sites (number and names):

172Xy100AK - Loamy Flood Plains: typically slightly lower flood plain position and occasional flooding; soils without permafrost; Balsam poplar-white spruce/thinleaf alder open forest vegetative potential.

172Xy102AK - Loamy High Flood Plains, Frozen
White spruce/thinleaf alder open forest

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b Riparian or Wetland Site Progressions:

(1) Aggradation: Based on observations and data collected in the Gulkana River area, this site is the end point of site progression and vegetative succession on flood plains within the alder zone. This site develops from site 172Xy100AK - Loamy Flood Plains as additional accretions of alluvium, channel migration, channel down-cutting, or a combination of these processes increase the height of the terrace surface and decrease the frequency and duration of flooding. White spruce/thinleaf alder open forest on this site is a later successional stage of Balsam poplar-white spruce/thinleaf alder open forest and represents the end point of succession on flood plains.

Eventually periodic flooding all but ceases because of increased terrace height. Continued development and thickening of the organic mat results in a decrease in soil temperatures, a rise in the level of the pemafrost, and a reduction in nutrient availability and cycling. White spruce/ericaceous shrub open forest represents a transitional cover type in the flood plain-stream terrace site progression. This type develops as growing conditions on the site continues to deteriorate and the original white spruce forest on the flood plains begins to die off and be replaced by less productive white and black spruce characteristic of stream terraces. Tall white spruce snags and large diameter downfall are frequent in these stands. Labrador tea, bog blueberry, and other ericaceous shrub and willow, which are well adapted to the nutrient poor sites and begin to increase in abundance and dominate the understory.

Ultimately, site progression and vegetation succession would lead to site 172Xy104AK - Stream Terraces and Spruce/shrub birch woodland and/or 172Xy103AK - Stream Terraces, Frozen and Spruce/spruce muskeg sedge open forest.

1.e. Insects and Disease Pests and Animal Damage: Porcupine damage to smaller spruce trees is evident in occasional stands. In most observed instances, damage is not extensive enough to kill the trees.

1.g. Recreation and Natural Beauty: Deteriorating spruce stands in the transitional zone between high flood plains and stream terraces often contain abundant downfall suitable for firewood. Standing dead trees will provide a future source of firewood.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy102AK - Loamy High Flood Plains, Frozen
Cover type: White spruce/thinleaf alder open forest
Seral status: PNC
Number of stands: 17
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

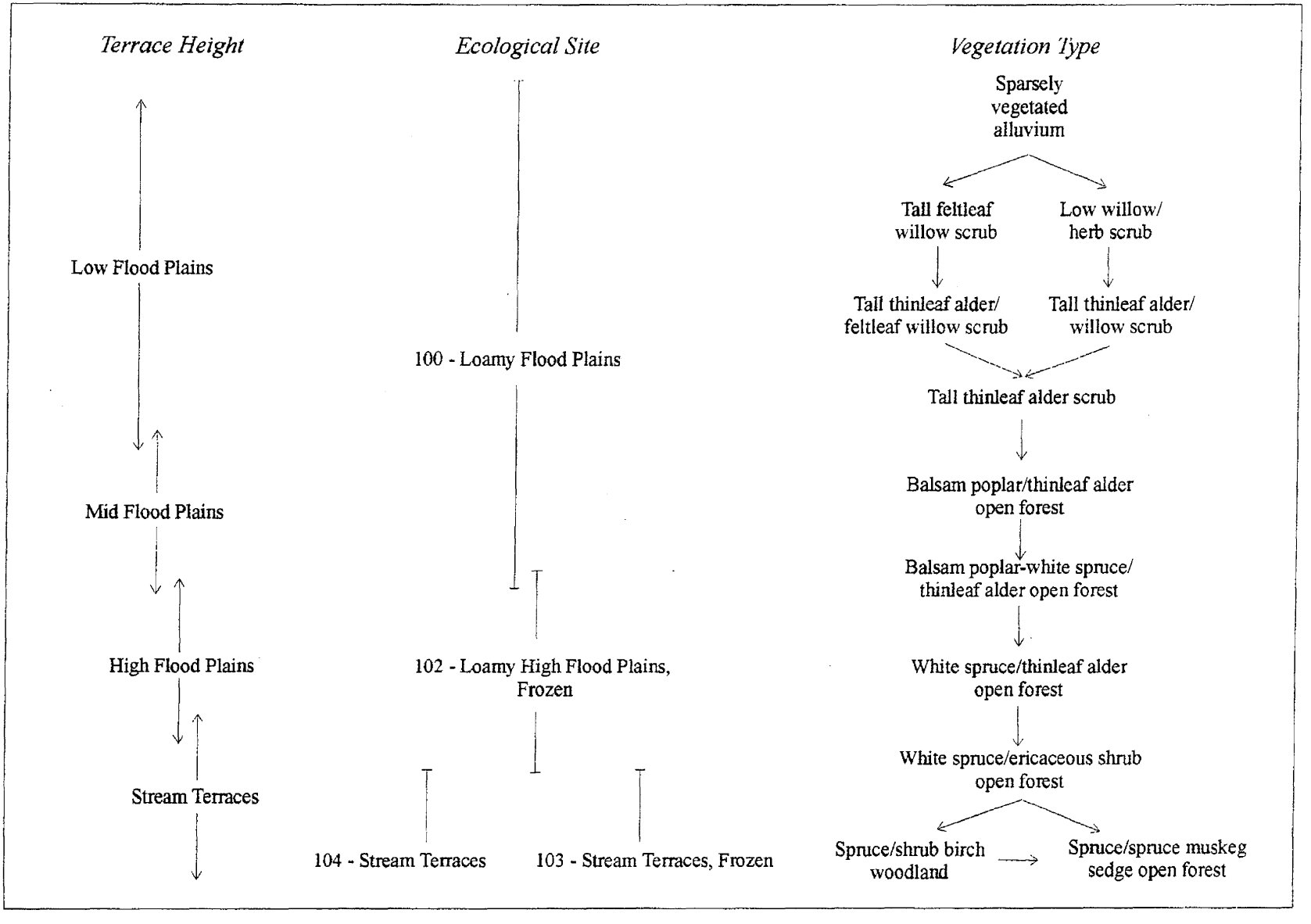
Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	29	4	1	10	11
white spruce	T1	94	41	10	75	62
white spruce	T2	47	17	1	35	28
balsam poplar	T3	18	1	1	1	3
quaking aspen	T3	12	2	1	3	5
white spruce	T3	41	2	1	5	9
Labrador-tea	SS	59	8	1	35	22
black crowberry	SS	82	11	1	65	30
blueberry willow	SS	12	2	1	2	4
bog blueberry	SS	65	10	1	50	26
gray willow	SS	12	17	3	30	14
grayleaf willow	SS	24	5	2	10	10
green alder	SS	18	17	10	25	17
highbush cranberry	SS	24	8	2	20	13
little tree willow	SS	12	1	1	1	2
lowbush cranberry	SS	82	10	2	45	28
prickly rose	SS	100	12	1	30	34
red bearberry	SS	12	4	2	5	6
russet buffalo-berry	SS	29	2	1	5	8
shrub birch	SS	12	8	8	8	10
shrubby cinquefoil	SS	18	2	1	2	5
swamp red currant	SS	18	6	1	15	10
thinleaf alder	SS	88	35	1	70	56
willow	SS	53	6	1	14	18
American twinflower	F	47	5	1	15	15
Canadian bunchberry	F	12	15	15	15	13
Tilesius' wormwood	F	47	2	1	5	10
alpine sweet-vetch	F	47	1	1	4	7
anemone	F	18	1	1	1	4
arctic aster	F	29	4	1	10	10
arctic sweet coltsfoot	F	41	6	1	15	15
cloudberry	F	12	2	1	2	4
common fireweed	F	47	1	1	2	7
gentian	F	12	1	1	1	2
horsetail	F	100	22	1	60	47
larkspur-leaf monkshood	F	29	1	1	2	5
marsh grass-of-parnassus	F	12	1	1	1	2
milk-vetch	F	12	1	1	2	4
northern bedstraw	F	12	3	1	5	6
northern blackberry	F	29	1	1	2	5
northern commandra	F	24	2	1	5	7
tall Jacob`s-ladder	F	12	1	1	1	2
tall bluebells	F	29	8	1	10	15
valerian	F	18	1	1	1	4
wintergreen	F	59	2	1	8	12
blue grass	G	12	2	1	3	5
bluejoint reedgrass	G	47	7	1	15	18
polar grass	G	65	3	1	10	14
spruce-muskeg sedge	G	12	3	2	4	6
Moss layer	M	100	64	10	95	80
Lichen layer	L	100	3	1	10	19
Bare soil	B	29	1	1	5	6
Litter and mulch	B	100	26	5	85	51
Rock fragments	B	12	1	1	1	2
Woody litter (>1" dia.)	B	100	8	1	20	27

Salix spp. includes: SABA3 SALIX SAMO2 SAPL2

Ecological Site: 172Xy102AK - Loamy High Flood Plains, Frozen
Cover type: White spruce/ericaceous shrub open forest
Seral status: post-PNC
Number of stands: 18
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	22	2	1	5	7
white spruce	T1	94	25	10	45	48
white spruce	T2	44	21	5	40	30
balsam poplar	T3	17	1	1	1	3
white spruce	T3	50	4	1	10	15
Labrador-tea	SS	94	18	1	35	41
black crowberry	SS	100	15	4	35	38
blueberry willow	SS	28	2	1	3	7
bog blueberry	SS	94	27	2	55	50
feltleaf willow	SS	50	5	1	20	16
gray willow	SS	11	1	1	1	2
grayleaf willow	SS	39	8	2	20	17
green alder	SS	17	3	1	5	7
little tree willow	SS	11	4	3	5	7
lowbush cranberry	SS	100	15	5	45	38
net vein willow	SS	22	1	1	2	5
prickly rose	SS	56	5	1	15	16
red bearberry	SS	50	3	1	10	13
russet buffalo-berry	SS	33	6	1	15	14
shrub birch	SS	33	7	1	20	15
shrubby cinquefoil	SS	50	1	1	2	8
swamp red currant	SS	11	4	1	8	7
thinleaf alder	SS	22	5	1	10	11
willow	SS	78	6	1	15	21
American twinflower	F	11	1	1	1	2
Bodin's milkvetch	F	11	3	1	5	6
Labrador lousewort	F	11	1	1	1	2
alpine sweet-vetch	F	33	3	1	7	10
arctic aster	F	11	1	1	1	2
arctic sweet coltsfoot	F	50	2	1	7	11
cloudberry	F	11	1	1	1	3
common fireweed	F	44	1	1	4	7
dwarf scouring-rush	F	11	1	1	1	2
horsetail	F	83	3	1	15	15
northern blackberry	F	11	1	1	1	2
northern commandra	F	39	3	1	10	12
tall Jacob`s-ladder	F	11	1	1	1	3
tall bluebells	F	11	2	2	2	5
valerian	F	22	1	1	1	3
wintergreen	F	17	3	1	4	6
bluejoint reedgrass	G	50	4	1	10	14
polar grass	G	67	2	1	5	11
rough fescue	G	11	1	1	1	2
sedge	G	33	2	1	4	7
spruce-muskeg sedge	G	28	4	1	7	10
Moss layer	M	100	71	60	85	84
Lichen layer	L	100	8	1	30	28
Bare soil	B	22	3	1	5	8
Litter and mulch	B	100	16	3	40	39
Woody litter (>1" dia.)	B	94	6	1	15	24

Salix spp. includes: SABA3 SALIX SAMO2 SAPL2

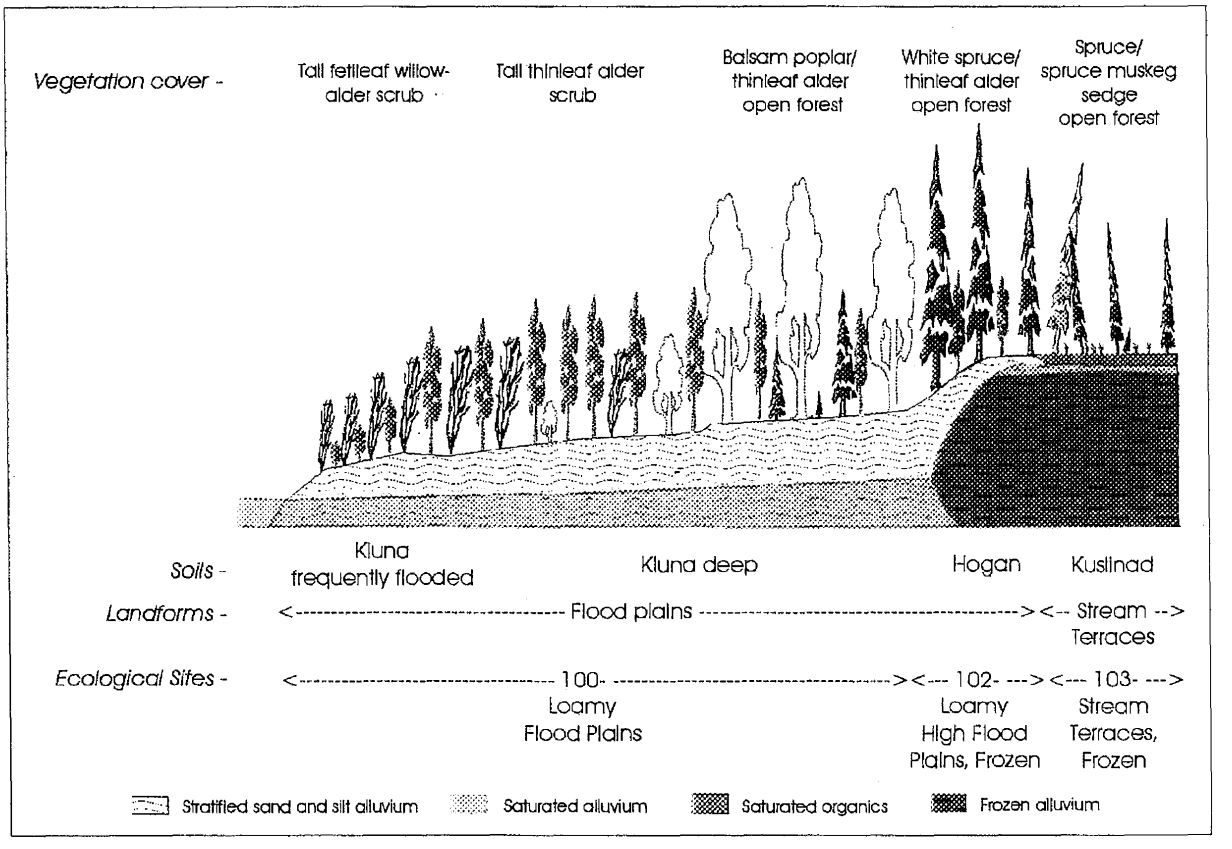


General relationships between terrace height, ecological sites, and vegetation types in the alder zone, Gulkana River Area, Alaska.

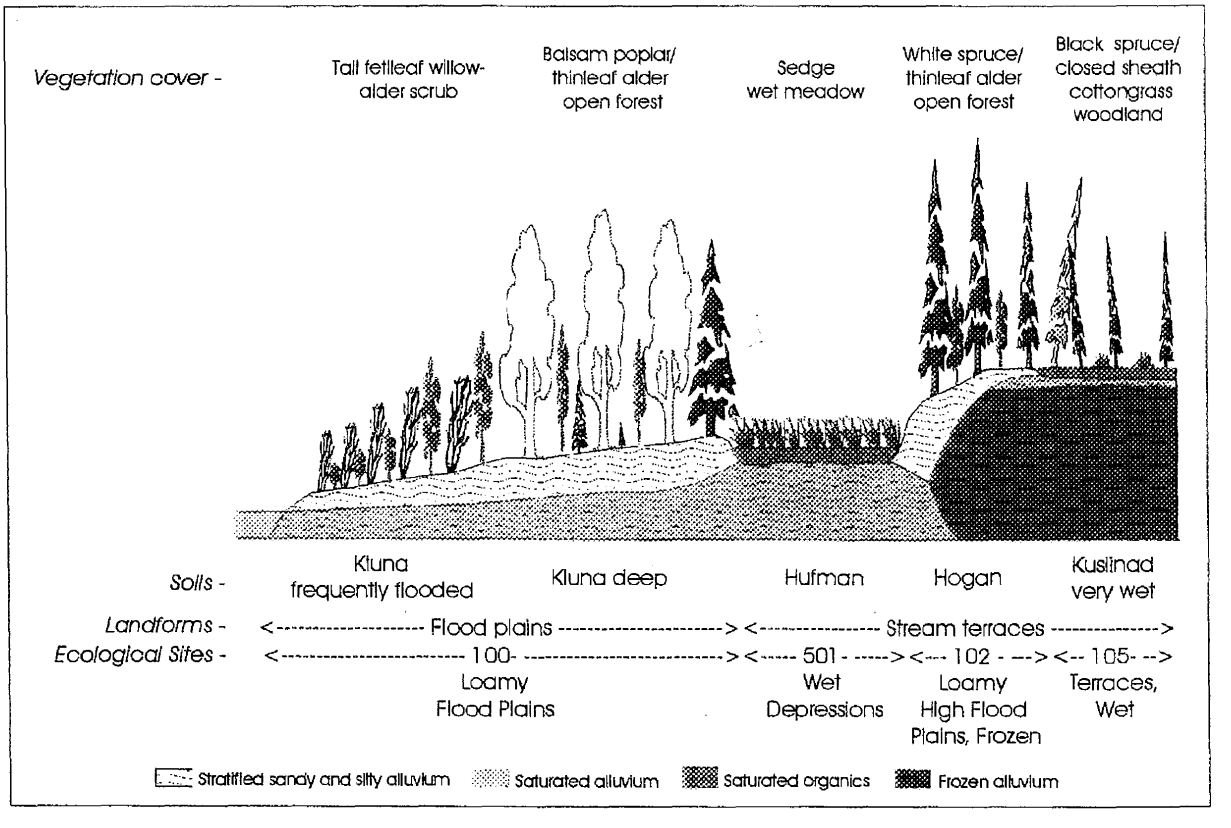
Selected physical properties for typical stages of site progression on flood plains and stream terraces in the alder zone, Gulkana River Area, Alaska.

Ecological Site (stage)	Cover Type(s)	Terrace Height avg(rge)	Flooding Frequency	Depth to SSK avg(rge)	Thickness of OM avg(rge)	Depth to Water Table		Depth to Permafrost	
						Pedons w/ <60"	Depth when <60" avg(rge)	Pedons w/ <60"	Depth when <60" avg(rge)
		-- ft --		-- in --	-- in --	-- % --	-- in --	-- % --	-- in --
100 - Loamy Flood Plains (early)	SAAL SAAL/ALTE2	3 (1-6)	freq	20 (4-48)	0 (0-1)	94	37 (22-58)	0	-
100 - Loamy Flood Plains (mid)	ALTE2 ALTE2-SAAL ALTE2/SALIX	3 (1-7)	occas-freq	28 (3-60)	1 (0-2)	83	34 (12-58)	0	-
100 - Loamy Flood Plains (late)	POBA2/ALTE2 POBA2-PIGL/ALTE2	4 (2-8)	occas	26 (8-60)	1 (0-2)	62	42 (23-55)	0	-
102 - Loamy High Flood Plains, Frozen (PNC)	PIGL/ALTE2	6 (4-12)	occas-rare	31 (17-60)	3 (0-7)	26	40 (24-55)	61	32 (14-55)
102 - Loamy High Flood Plains, Frozen (post-PNC)	PIGL/erica	9 (4-25)	rare-none	30 (12-60)	5 (2-8)	15	40 (30-50)	65	31 (12-52)
103 - Stream Terraces, Frozen (PNC)	PICEA/CALU2	9 (4-20)	rare-none	30 (18-60)	7 (2-12)	100	8 (0-23)	100	15 (0-25)

Notes:
Terrace height - estimated height of flood plain or stream terrace surface above the mid summer channel level.
Depth to SSK - depth to sandy skeletal alluvium below the mineral soil surface in pedons without permafrost or in which the permafrost level was below the SSK contact; measured in the soil pit.
Thickness of OM - thickness of the surface organic mat; measured in the soil pit.
Depth to Water Table and Permafrost - Pedons w/ <60": pedons in which a water table or permafrost was present within 60 inches below the mineral surface. Depth when <60": depth below the mineral surface when present; measured in the soil pit.



Representative cross section in the alder zone along the middle West Fork.



Representative cross section in the alder zone along the middle West Fork.



Vegetation succession and site progression between ecological site 172Xy102AK - Loamy High Flood Plains, Frozen and 172Xy103AK - Stream terraces, Frozen is characterized by die-off of the productive white spruce overstory and replacement by less productive white and black spruce. Tall thinleaf alder and other understory species common on high flood plains are gradually replaced by ericaceous shrubs, shrub birch, and other species more typical of spruce woodlands.

Stream Terraces, Frozen
172Xy103AK

Standard Site Description

Site Number: 172Xy103AK
Site Name: Stream Terraces, Frozen
Plant Name: PICEA/BEGL
Date: 4/98
Initials (Author's/Agency): MHC, DRK/USDA NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____, _____

(3) Typical Location:

Legal: NE 1/4; SE 1\4; NW 1\4; Sec. 29 T. 12N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: River valleys
(b) Specific: stream terraces, _____
(c) Microrelief: plane, _____
(2) Elevation/Aspect:
Low 1850 / All _____ High 2600 / All _____
(3) Slope: Low: 0 % High 5 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	____.____	____.____	____.____	____.____	____.____	____.____
2.	_____	____.____	____.____	____.____	____.____	____.____	____.____
3.	_____	____.____	____.____	____.____	____.____	____.____	____.____
4.	_____	____.____	____.____	____.____	____.____	____.____	____.____
5.	_____	____.____	____.____	____.____	____.____	____.____	____.____

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width	
1.	___	___	___	___	___	___	___	A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___	B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___	C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___	D) Not Determined
5.	___	___	___	___	___	___		

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____
(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic , _____
b. Soil Temperature Regime: Pergelic , _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28 °F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.2	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson Alaska
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Histic Pergelic Cryaquepts	loamy, mixed, nonacid
(2)		
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: alluvium, _____

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 8 (inches) Maximum 16 (inches)
(b) Type F & A

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Histic Epipedon
(2) Thickness: Minimum 8 (inches) Maximum 16 (inches)

e. Surface Texture: Peat, _____, _____, _____

f. Soil Depth; (not to exceed 2 classes)
Minimum 4 (inches) Maximum 32 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 4 (inches) Maximum 16 _____(inches)

h. AWC for Effective Plant Root Zone: Low .16 High .35 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____	to _____	_____	____	to ____	_____
_____	to _____	_____	____	to ____	_____
_____	to _____	_____	____	to ____	_____
_____	to _____	_____	____	to ____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum _____ (inches) Maximum _____ (inches)
(2) Average Thickness: _____(inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum _____(inches) Maximum _____(inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (Ph) Low	Amount (Ph) High
Surface Layers:	0	8	5.1	6.0
Layers:	8	27	5.6	7.3
All Other Layers:				

m. Salinity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (mmhos/cm) Low	Amount (mmhos/cm) High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (SAR) Low	Amount (SAR) High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	W	W	W	W	W	W	F	F	F
4-10"				F						W		
10-20"					F					F		
20-40"						F	F	F	F			
40-60"												

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 0 (Ft) Maximum 1 (Ft)
(2) Kind: Perched
(3) Month(s): Apr to Sep

q. Flooding:
(1) Frequency: rare to none
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	10 - 30	12 - 40
Shrubs	35 - 75	1.5 - 4
Grasses, Grass Like, & Forbs	20 - 45	1 - 1.5
Cryptogams	60 - 80	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	10 - 40	_____ - _____
P	1 - 5	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 20 - 125 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PICEA	spruce	___-___	___-___	10-30	100-100	_____
_____	_____	___-___	___-___	___-___	___-___	_____
_____	_____	___-___	___-___	___-___	___-___	_____
_____	_____	___-___	___-___	___-___	___-___	_____
_____	_____	___-___	___-___	___-___	___-___	_____

Site Index References: _____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
BEGL	shrub birch	_____	8-60	___-___	___-___	_____
LEDUM	Labrador tea	_____	15-35	___-___	___-___	_____
VAUL	bog blueberry	_____	10-20	___-___	___-___	_____
* SALIX	willow	_____	0-10	___-___	___-___	_____
** SAPL2	diamondleaf willow		0-15	___-___	___-___	_____

Other ..... ___-___NTE___ea

VAVI lowbush cranberry 1-10

ARRU red bearberry 0-20

SAMY blueberry willow 0-15

POFR4 shrubby cinquefoil 0-4

* includes tall willows SAGL ; SABE2

** includes tall willows SAGL ; SABE2

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CALU2	spruce muskeg	sedge	20-45	___-___	___-___	
ARLA2	polar grass		1-10	___-___	___-___	
CAAQ	water sedge		0-20	___-___	___-___	
ERBR6	closed sheath	cottongrass	0-15	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
PEFR5	arctic sweet	coltsfoot	1-5	___-___	___-___	
RUCH	cloudberry		0-15	___-___	___-___	
HEAL	alpine sweet-vetch		0-7	___-___	___-___	
EQUIS	horsetail		0-3	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichens	10 - 25	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total bryophytes	30 - 80	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other ..... ____-____NTE____ea

_____	_____
_____	_____
_____	_____
_____	_____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	6
Late (Good)	_____	18
Mid (Fair)	_____	_____
Early (Poor)	_____	6

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	ST2	Kuslinad
	ST21	
	ST22	
	ST24	
	ST24B	
	ST411	
	ST441	

172Xy103AK - Stream Terraces, Frozen

Spruce/spruce muskeg sedge open forest

Part A: Description of Site

1.c. Landscape Narrative: This site consists of level to moderately sloping, poorly drained stream terraces with shallow to very shallow permafrost. Elevation is generally 1850 to 2600 feet (564 to 792 m).

In the Gulkana River area, this site occurs along all reaches of the River except for the upper Middle Fork. This site is probably widespread on stream terraces at mid elevations throughout the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: Soils on this site are very poorly or poorly drained and very shallow or shallow to permafrost. They typically have an organic mat 8 to 16 inches (20 to 41 cm) thick over stratified sandy and silty alluvium. Depth to permafrost ranges from 4 to 32 inches (10 to 81 cm) below the mineral soil surface. A water table is perched on the impermeable permafrost; depth to the top of the water table ranges from within the organic mat to about 12 inches (15 cm) below the mineral surface. A reduced matrix or common reduction mottles are present above the permafrost in most profiles.

4.e. Vegetation Narrative: Spruce/spruce muskeg sedge open forest is the correlated Potential Natural Plant Community on this site.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Wild fire impacts on this site are complex and difficult to predict. In most instances, fire would kill the spruce trees and destroy much if not all of the woodland overstory. Following fires of moderate severity, sprouting from root crowns and other underground plant parts should initially produce scrub vegetation similar to the understory of the potential natural plant community. A severe burn, one in which the moss-organic layer was consumed to mineral soil, would allow for the establishment of pioneering lichens, mosses, and herbs on the soil surface. With the insulating moss-organic layer burned off, the soil temperatures would be expected to increase, resulting in melting of the permafrost and a drop in the water table. Site productivity should improve markedly at this point and then gradually decrease once again as the moss-organic layer re-establishes and thickens. Stand replacement will depend to a large degree on proximity of seed sources, the severity of burn, and suitability of the seed bed. In the boreal forest zone, repeated fires generally favors the establishment of *Picea mariana* over *Picea glauca*.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy104AK - Stream Terraces

b. Riparian or Wetland:

172Xy100AK - Loamy Flood Plains

172Xy101AK - Loamy High Flood Plains

172Xy102AK - Loamy High Flood Plains, Frozen

172Xy105AK - Terraces, Wet

172Xy501AK - Wet Depressions

8. List of Competing Sites (number and names):

172Xy104AK - Stream Terraces: slightly elevated ridges and other microsites on similar stream terrace positions or areas burned by wild fire in the not to distant past; well drained soils without permafrost; Spruce/shrub birch woodland vegetative potential with Spruce/lichen woodland present in many places.

172Xy105AK - Terraces, Wet: slightly lower and concave microsites on similar stream terrace positions; hummocky micro-topography; very poorly drained soils with very shallow permafrost and a perched water table often within the surface organic mat; Black spruce/closed sheath cottongrass woodland vegetative potential.

172Xy103AK - Stream Terraces, Frozen

Spruce/spruce muskeg sedge open forest

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progression

(1) Aggradation: Based on observations and data collected in the Gulkana River area, this site is the end point of flood plain-stream terrace site progression and vegetation succession. As the terrace is elevated above the level of flooding by down-cutting of the channel and sediment accretion, this site develops from 172Xy101AK - Loamy High Flood Plains and 172Xy102AK - Loamy High Flood Plains, Frozen. As the surface moss layer and organic mat continues to develop and permafrost rises within the soil profile, the original *Picea glauca* stand dies-off and is replaced by less productive *P. glauca* and *P. mariana*. The understory changes from *Salix* spp. dominance on site 172Xy101AK or *Alnus tenuifolia* on site 172Xy102AK to dominance by *Betula glandulosa*, various ericaceous shrubs, and feathermosses. Apparently, *Carex lugens* becomes abundant in the herb layer only in places that have remained undisturbed by wild fire for an extended period of time. Prior to this point, vegetation on this site consists primarily of Spruce/shrub birch woodland.

1.g. Recreation and Natural Beauty: Deteriorating stands of *Picea glauca* in the transitional zone between high flood plains and frozen stream terraces often contain abundant downfall suitable for firewood. Standing dead trees will provide a future source of firewood.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy103AK - Stream Terraces, Frozen
Cover type: Spruce/spruce muskeg sedge open forest
Seral status: PNC
Number of stands: 6
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	50	22	15	30	33
spruce	T2	33	13	10	15	20
black spruce	TX	17	30	30	30	22
spruce	TX	17	25	25	25	20
black spruce	T3	33	10	5	15	18
spruce	T3	17	5	5	5	9
Labrador-tea	SS	100	25	15	35	50
black crowberry	SS	83	3	1	4	15
blueberry willow	SS	50	8	3	15	20
bog blueberry	SS	100	14	10	20	38
bog rosemary	SS	17	1	1	1	3
gray willow	SS	17	7	7	7	11
grayleaf willow	SS	33	8	5	10	16
leatherleaf	SS	17	3	3	3	7
lowbush cranberry	SS	100	5	1	10	23
net vein willow	SS	33	5	1	10	13
red bearberry	SS	83	9	1	20	27
shrub birch	SS	100	28	8	60	53
shrubby cinquefoil	SS	67	2	1	4	10
small cranberry	SS	17	1	1	1	3
willow	SS	83	6	1	15	22
Labrador lousewort	F	33	1	1	1	4
alpine sweet-vetch	F	17	7	7	7	11
arctic aster	F	17	1	1	1	3
arctic dock	F	17	1	1	1	4
arctic sweet coltsfoot	F	100	3	1	5	18
cloudberry	F	50	7	1	15	19
dwarf scouring-rush	F	17	1	1	1	3
gentian	F	17	1	1	1	3
horsetail	F	67	1	1	3	9
marsh grass-of-parnassus	F	17	1	1	1	3
narrow-leaf saw-wort	F	17	1	1	1	4
northern blackberry	F	17	2	2	2	6
northern false asphodel	F	17	1	1	1	3
ragwort	F	17	1	1	1	3
serpent-grass	F	17	1	1	1	3
closed-sheath cottongrass	G	50	11	3	15	23
polar grass	G	100	3	1	10	17
rush	G	17	1	1	1	3
sedge	G	33	3	1	5	10
spruce-muskeg sedge	G	100	33	20	45	57
water sedge	G	50	8	2	20	20
Moss layer	M	100	60	30	80	77
Lichen layer	L	100	18	10	25	42
Bare soil	B	17	1	1	1	3
Litter and mulch	B	100	18	10	40	43
Surface water	B	50	5	1	15	16
Woody litter (>1" dia.)	B	83	3	1	5	16

Salix spp. includes: SABA3 SAPL2 SARI4

Ecological Site: 172Xy103AK - Stream Terraces, Frozen
Cover type: Spruce/shrub birch woodland
Seral status: mid-late
Number of stands: 18
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

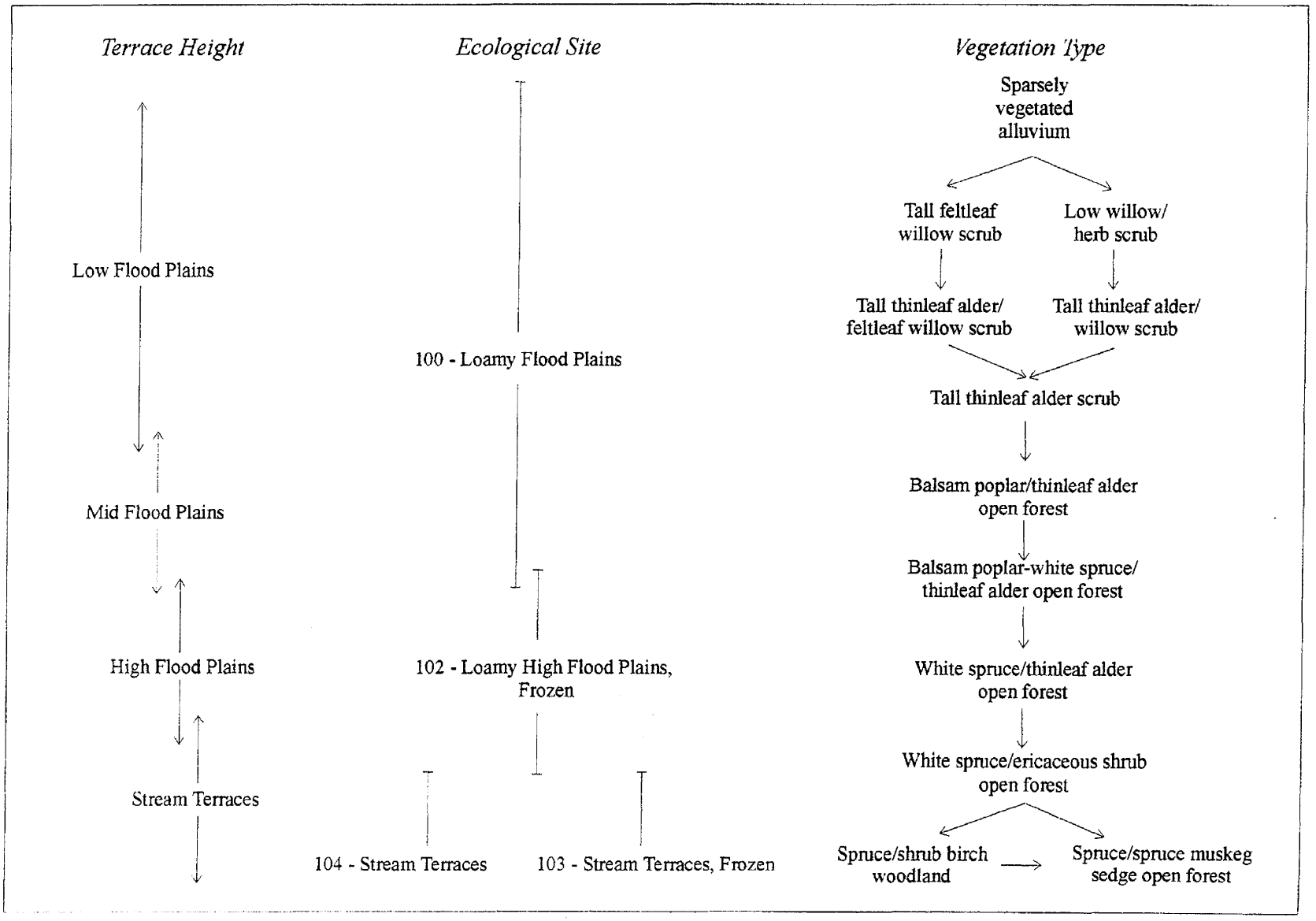
Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	56	20	10	30	33
spruce	T2	22	20	15	30	21
white spruce	T2	17	12	10	15	14
black spruce	T3	28	8	1	15	15
white spruce	T3	11	3	1	5	6
Labrador-tea	SS	100	24	3	60	49
black crowberry	SS	78	6	1	18	21
blueberry willow	SS	11	1	1	1	3
bog blueberry	SS	83	18	4	40	39
gray willow	SS	11	10	4	15	10
grayleaf willow	SS	22	8	5	10	13
lowbush cranberry	SS	94	10	2	30	31
prickly rose	SS	50	5	1	15	15
red bearberry	SS	33	3	1	6	10
russet buffalo-berry	SS	11	3	2	3	5
shrub birch	SS	83	16	2	50	37
shrubby cinquefoil	SS	11	1	1	1	2
thinleaf alder	SS	17	8	1	20	12
willow	SS	78	7	2	25	23
Canadian bunchberry	F	11	2	1	3	5
alpine sweet-vetch	F	11	1	1	1	2
arctic sweet coltsfoot	F	94	5	1	15	21
cloudberry	F	61	2	1	5	11
common fireweed	F	11	1	1	1	3
horsetail	F	28	4	1	8	11
northern blackberry	F	17	5	2	7	9
tall bluebells	F	11	3	1	5	6
bluejoint reedgrass	G	17	5	1	10	9
closed-sheath cottongrass	G	22	7	2	10	12
cottongrass	G	28	2	1	5	8
polar grass	G	78	6	1	35	21
sedge	G	28	3	1	10	8
spruce-muskeg sedge	G	17	3	1	6	7
Moss layer	M	100	59	30	80	77
Lichen layer	L	100	10	1	35	32
Bare soil	B	22	2	1	3	6
Litter and mulch	B	100	10	1	25	32
Surface water	B	33	2	1	5	7
Woody litter (>1" dia.)	B	61	3	1	10	14

Salix spp. includes: SABA3 SAPL2

Ecological Site: 172Xy103AK - Stream Terraces, Frozen
Cover type: Low shrub birch scrub
Seral status: early-mid
Number of stands: 6
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	33	4	2	5	11
black spruce	T2	33	8	5	10	16
white spruce	T2	33	8	5	10	16
black spruce	T3	67	5	1	15	18
white spruce	T3	67	6	1	10	20
Beauverd spiraea	SS	17	1	1	1	3
Labrador-tea	SS	100	20	10	30	45
black crowberry	SS	83	5	2	10	20
blueberry willow	SS	50	9	6	15	21
bog blueberry	SS	100	24	10	35	49
bog rosemary	SS	17	2	2	2	6
gray willow	SS	17	4	4	4	8
grayleaf willow	SS	33	4	3	5	12
lowbush cranberry	SS	100	8	4	15	28
net vein willow	SS	17	1	1	1	3
prickly rose	SS	33	1	1	1	5
red bearberry	SS	50	7	4	10	19
shrub birch	SS	100	35	6	75	59
shrubby cinquefoil	SS	33	6	1	10	14
thinleaf alder	SS	17	4	4	4	8
willow	SS	67	4	1	5	16
arctic sweet coltsfoot	F	67	4	1	10	17
cloudberry	F	67	5	1	10	19
felwort	F	33	2	2	2	8
horsetail	F	33	18	1	35	24
ragwort	F	17	1	1	1	3
bluejoint reedgrass	G	17	3	3	3	7
closed-sheath cottongrass	G	17	1	1	1	3
cottongrass	G	17	4	4	4	8
polar grass	G	67	3	1	5	13
sedge	G	17	7	7	7	11
spruce-muskeg sedge	G	67	33	15	70	47
tall cottongrass	G	17	2	2	2	6
Moss layer	M	100	49	20	70	70
Lichen layer	L	100	23	1	70	48
Litter and mulch	B	100	18	4	35	43
Woody litter (>1" dia.)	B	100	2	1	6	16

Salix spp. includes: SABA3 SAPL2



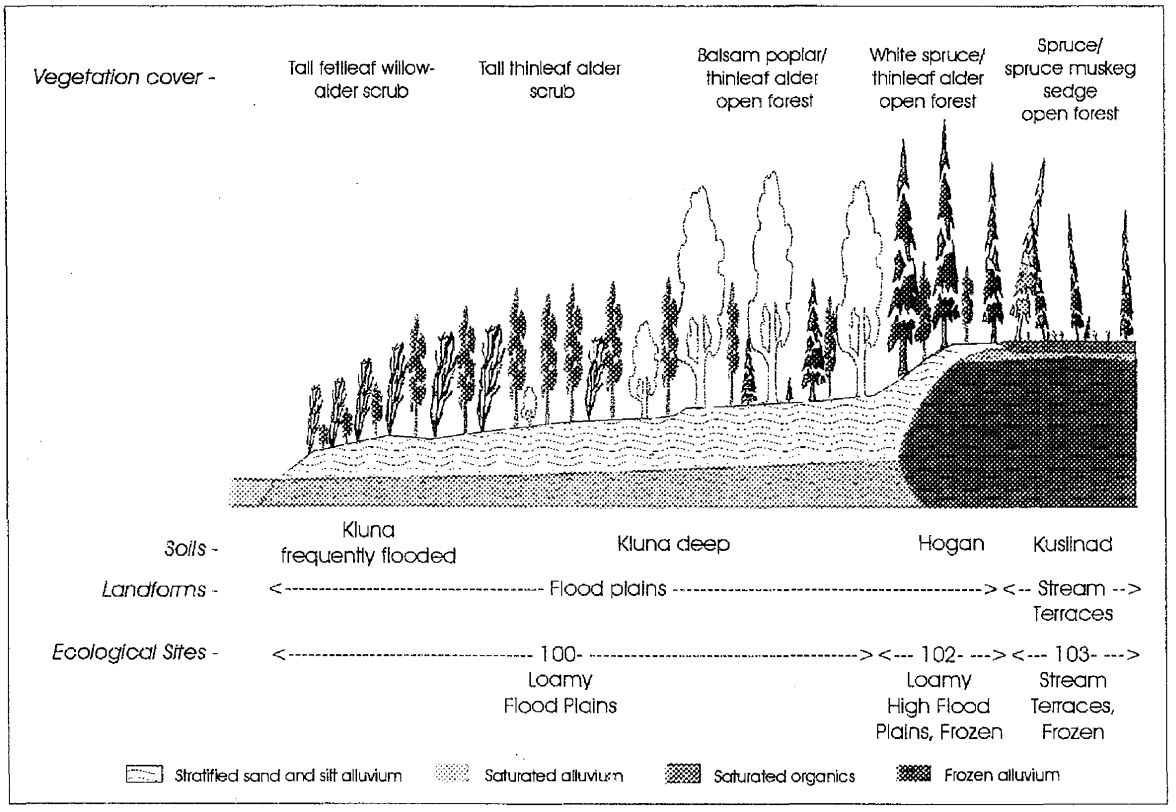
General relationships between terrace height, ecological sites, and vegetation types in the alder zone, Gulkana River Area, Alaska.

01/1999

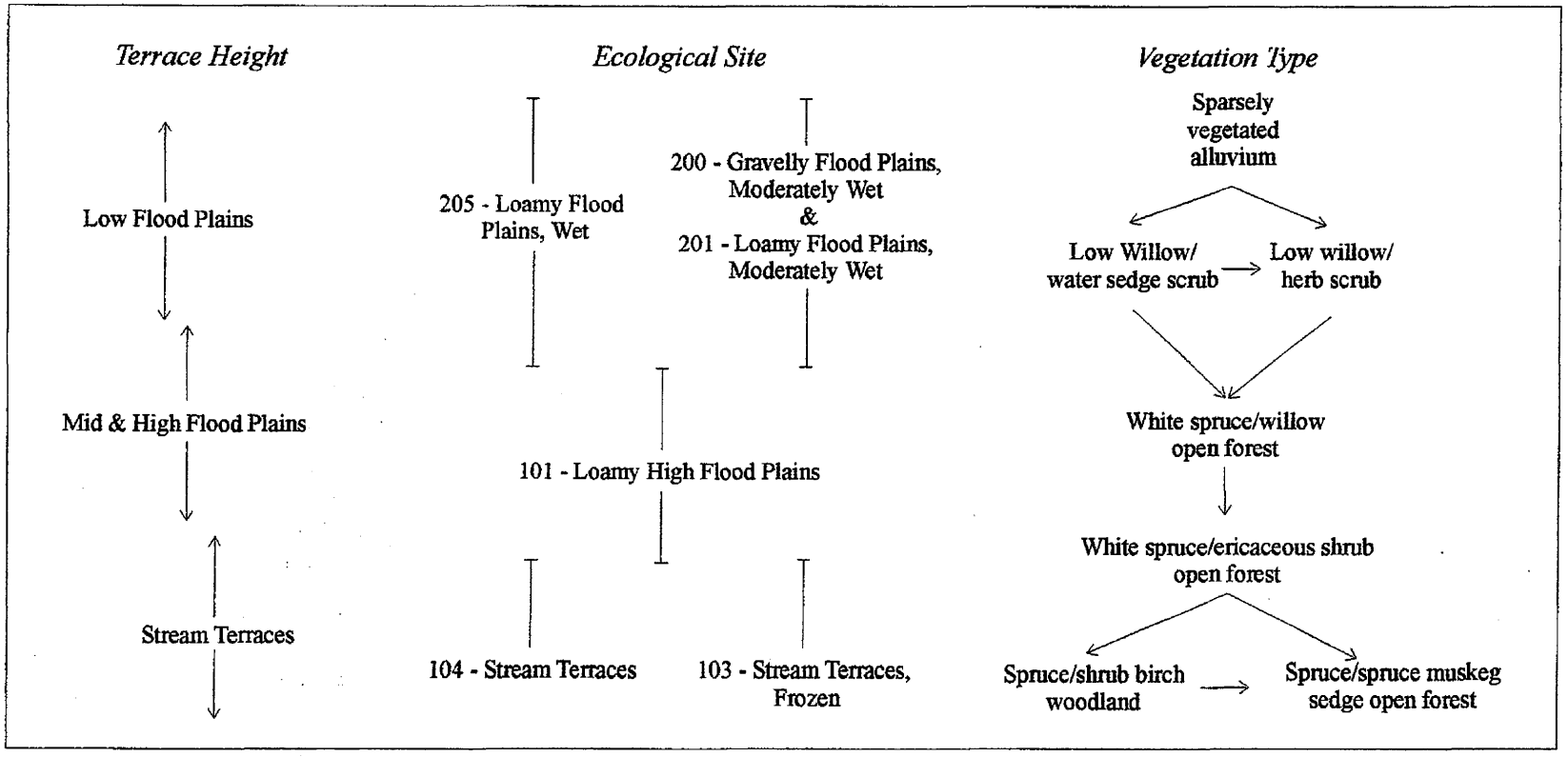
Selected physical properties for typical stages of site progression on flood plains and stream terraces in the alder zone, Gulkana River Area, Alaska.

Ecological Site (stage)	Cover Type(s)	Terrace Height avg(rge)	Flooding Frequency	Depth to SSK avg(rge)	Thickness of OM avg(rge)	Depth to Water Table		Depth to Permafrost	
						Pedons w/ <60"	Depth when <60" avg(rge)	Pedons w/ <60"	Depth when <60" avg(rge)
		-- ft --		-- in --	-- in --	-- % --	-- in --	-- % --	-- in --
100 - Loamy Flood Plains (early)	SAAL SAAL/ALTE2	3 (1-6)	freq	20 (4-48)	0 (0-1)	94	37 (22-58)	0	-
100 - Loamy Flood Plains (mid)	ALTE2 ALTE2-SAAL ALTE2/SALIX	3 (1-7)	occas-freq	28 (3-60)	1 (0-2)	83	34 (12-58)	0	-
100 - Loamy Flood Plains (late)	POBA2/ALTE2 POBA2-PIGL/ALTE2	4 (2-8)	occas	26 (8-60)	1 (0-2)	62	42 (23-55)	0	-
102 - Loamy High Flood Plains, Frozen (PNC)	PIGL/ALTE2	6 (4-12)	occas-rare	31 (17-60)	3 (0-7)	26	40 (24-55)	61	32 (14-55)
102 - Loamy High Flood Plains, Frozen (post-PNC)	PIGL/erica	9 (4-25)	rare-none	30 (12-60)	5 (2-8)	15	40 (30-50)	65	31 (12-52)
103 - Stream Terraces, Frozen (PNC)	PICEA/CALU2	9 (4-20)	rare-none	30 (18-60)	7 (2-12)	100	8 (0-23)	100	15 (0-25)

Notes:
Terrace height - estimated height of flood plain or stream terrace surface above the mid summer channel level.
Depth to SSK - depth to sandy skeletal alluvium below the mineral soil surface in pedons without permafrost or in which the permafrost level was below the SSK contact; measured in the soil pit.
Thickness of OM - thickness of the surface organic mat; measured in the soil pit.
Depth to Water Table and Permafrost - Pedons w/ <60": pedons in which a water table or permafrost was present within 60 inches below the mineral surface. Depth when <60": depth below the mineral surface when present; measured in the soil pit.



Representative cross section in the alder zone along the middle West Fork.



General relationships between terrace height, ecological sites, and vegetation types in the willow zone, Gulkana River Area, Alaska.

Selected physical properties for typical stages of site progression on flood plains and stream terraces in the willow zone, Gulkana River Area, Alaska.

Ecological Site (stage)	Cover Type(s)	Terrace Height avg(rge)	Flooding Frequency	Depth to SSK avg(rge)	Thickness of OM avg(rge)	Depth to Water Table		Depth to Permafrost	
						Pedons w/ <60"	Depth when <60" avg(rge)	Pedons w/ <60"	Depth when <60" avg(rge)
		-- ft --		-- in --	-- in --	-- % --	-- in --	-- % --	-- in --
205 - Loamy Flood Plains, Wet	SALIX/CAAQ	2 (1-5)	freq-occas	17 (0-42)	4 (1-10)	100	13 (0-30)	0	-
200 - Gravelly Flood Plains, Moderately Wet	SALIX/herb	3 (2-4)	occas-freq	28 (3-60)	1 (0-3)	100	28 (12-44)	0	-
201 - Loamy Flood Plains, Moderately Wet	SALIX/herb	3 (1-8)	occas-freq	25 (9-50)	1 (0-6)	79	36 (32-45)	0	-
	SALIX/herb2	7 (4-12)	occas	60 (58-60)	1 (0-1)	12	46 (46-60)	0	
101 - Loamy High Flood Plains (PNC)	PIGL/SALIX	6 (3-15)	occas-rare	27 (3-60)	2 (0-7)	39	40 (31-58)	24	33 (17-49)
101 - Loamy High Flood Plains (post-PNC)	PIGL/erica	9 (4-25)	rare-none	30 (12-60)	4 (0-10)	21	35 (8-50)	54	29 (6-52)
104 - Stream Terraces (mid to late seral)	PICEA/BEGL	11(6-25)	rare-none	30 (18-60)	4 (1-9)	9	31 (16-40)	27	36 (18-55)
103 - Stream Terraces, Frozen (PNC)	PICEA/CALU2	9 (4-20)	rare-none	30 (18-60)	7 (2-12)	100	8 (0-23)	100	15 (0-25)

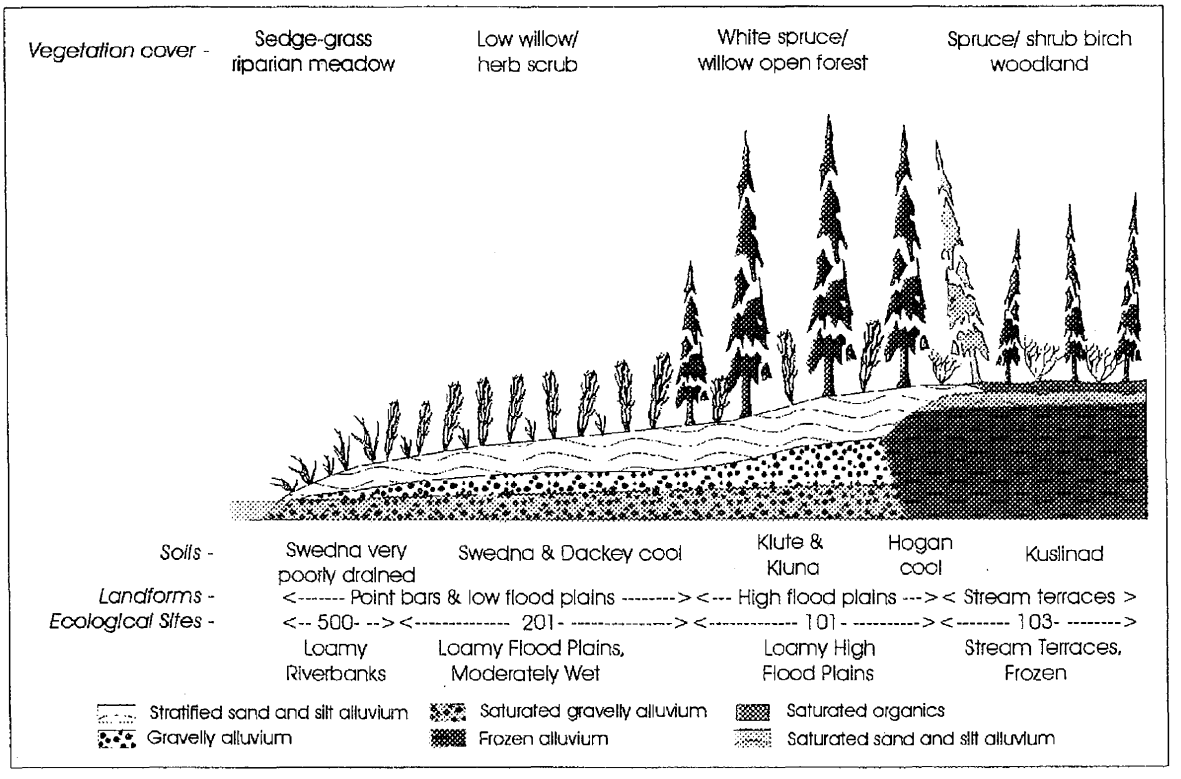
Notes:

Terrace height - estimated height of flood plain or stream terrace surface above the mid summer channel level.

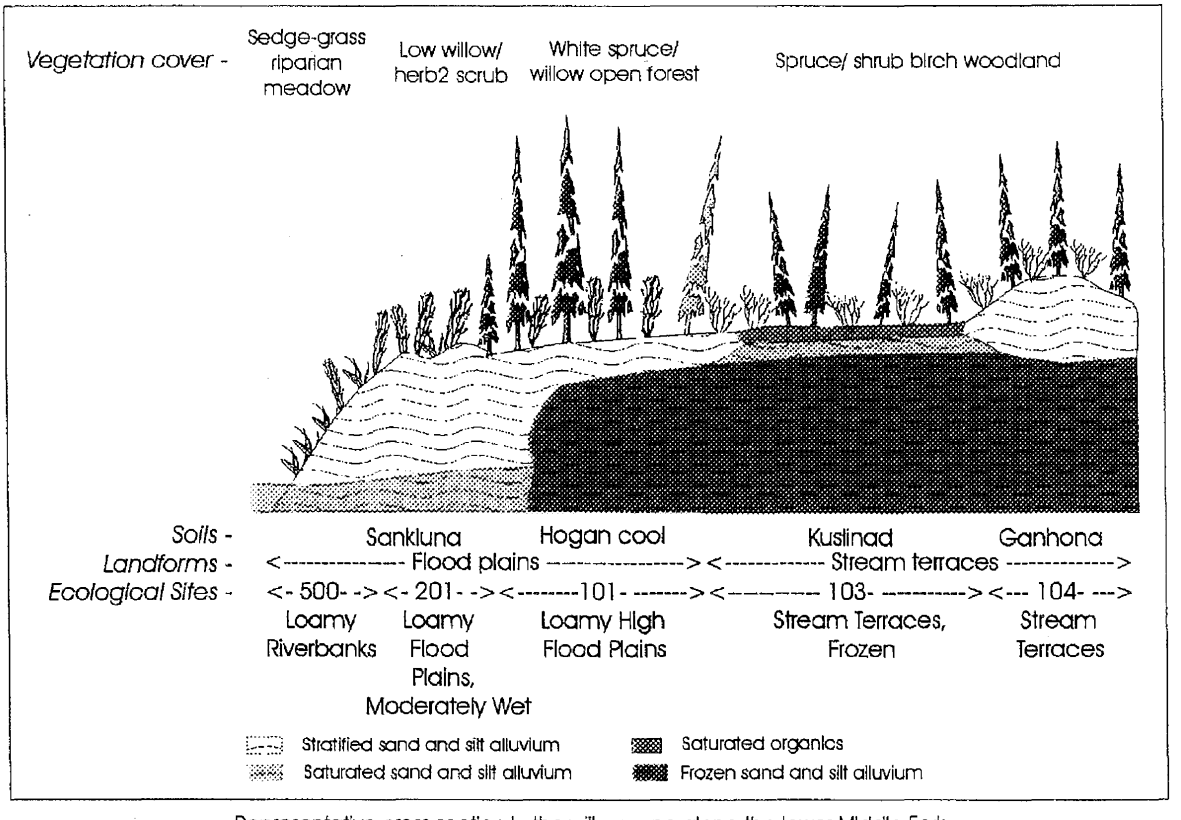
Depth to SSK - depth to sandy skeletal alluvium below the mineral soil surface in pedons without permafrost or in which the permafrost level was below the SSK contact; measured in the soil pit.

Thickness of OM - thickness of the surface organic mat; measured in the soil pit.

Depth to Water Table and Permafrost - Pedons w/ <60": pedons in which a water table or permafrost was present within 60 inches below the mineral surface. Depth when <60": depth below the mineral surface when present; measured in the soil pit.



Representative cross section in the willow zone along the upper Main Stem.



Representative cross section in the willow zone along the lower Middle Fork.

Stream Terraces
172Xy104AK

Standard Site Description

Site Number: 172Xy 104AK
Site Name: Stream Terraces
Plant Name: PICEA/BEGL
Date: 4/98
Initials (Author's/Agency): DRK, MHC / USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

      (1) MLRA Name: Copper River Plateau
      (2) Local Area: Gulkana River, _____, _____

      (3) Typical Location:

      Legal: NE 1/4; SW 1\4; SW 1\4; Sec. 31 T. 11N R. 03W Meridian Copper River
      Latitude: Deg.____ Min.____ Sec.____
      Longitude: Deg.____ Min.____ Sec.____
      UTM Coordinate: _____

   b. Physiography:

      (1) Landform:
         (a) Broad: Stream Terraces
         (b) Specific: medium, high
         (c) Microrelief: plane, convex
      (2) Elevation/Aspect:
         Low 1950 / All High 2600 / All
      (3) Slope: Low: 0 % High 20 %

   c. Landscape Narrative:

   d. Associated Water Features:

      (1) Non-stream Characteristics:

         (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

         _____ _____ _____
         _____ _____ _____

         Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

         (b) Drawdown Characteristics (reserved)
         (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	____	____	____	____	____	____
2.	_____	____	____	____	____	____	____
3.	_____	____	____	____	____	____	____
4.	_____	____	____	____	____	____	____
5.	_____	____	____	____	____	____	____

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of floodplain width/bankfull width	
1.	___	___	___	___	___	___	___	A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___	B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___	C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___	D) Not Determined
5.	___	___	___	___	___	___		

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____,
_____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic, _____
b. Soil Temperature Regime: Cryic, _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 19 (inches)
g. Frost-Free Period: 60 to 80 (days) (28 °F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.7	.7	.6	.5	.7	2.1	3.1	2.1	1.6	1.5	.7	1.0	
LOW													
TEMP HI	7	17	28	40	53	62	66	63	52	35	15	4	(°F)
MEAN	-2	4	13	27	41	49	54	50	40	25	5	-4	
LOW	-12	-10	-2	14	28	37	42	37	28	15	-5	-13	

i. Climatic Weather Station:

(1) Location: Sourdough, AK
(2) Station Number: 508625

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Typic Cryoboralfs	coarse loamy over sandy or sandy skeletal, mixed
(2)	"	coarse loamy, mixed
(3)	"	sandy skeletal, mixed

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: alluvium, _____

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 1 (inches) Maximum 6 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: ochric Epipedon
(2) Thickness: Minimum 0 (inches) Maximum 2 (inches)

e. Surface Texture: SiL, L, FSL, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 3 (inches) Maximum 13 (inches)

h. AWC for Effective Plant Root Zone: Low .13 High .20 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 2 (inches) Maximum 31 (inches)
(2) Average Thickness: 17 (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 2 (inches) Maximum 31 (inches)
(2) Average Thickness 40 (inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	6	5.1	6.5
Layers:	6	31	6.1	7.3
All Other Layers:	31	60	6.1	7.8

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	M	M	M	M	M	M	F	F	F
4-10"	↓	↓	↓	F	↓	↓	↓	↓	↓	M	↓	↓
10-20"	↓	↓	↓	↓	F	↓	↓	↓	↓	↓	M	↓
20-40"	↓	↓	↓	↓	M	↓	↓	↓	↓	↓	↓	M
40-60"	M	M	M	M	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 6 (Ft) Maximum 6 (Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: none to rare
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	15 - 45	25 - 50
Shrubs	50 - 90	2.5 - 4.5
Grasses, Grass Like, & Forbs	7 - 60	.5 - 1.5
Cryptogams	60 - 90	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	1 - 40	_____ - _____
P	0 - 5	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 25 - 130 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PICEA	spruce	35-60	--	15-45	100-100	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	

Site Index References: Farr 1967

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable
BEGL	shrub birch		0-65	--	--
LEDUM	Labrador tea		5-35	--	--
VAUL	bog blueberry		5-40	--	--
SAPLR	diamond leaf willow		2-15	--	--
VAVI	lowbush cranberry		1-25	--	--

Other ..... - NTE ea

EMNI	black crowberry	0-10
PIMA	black spruce	0-15
SAMY	blueberry willow	0-5

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
ARLAR	polar grass		0-10	___-___	___-___	
CALA4	bluejoint reedgrass		0-10	___-___	___-___	
CAREX	sedge		0-15	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
EQUIS	horsetail		0-60	___-___	___-___	
PEFRS	arctic sweet coltsfoot		0-15	___-___	___-___	
COCA13	bunchberry dogwood		0-4	___-___	___-___	
EPAN2	common fireweed		0-3	___-___	___-___	
GEL12	northern commandra		0-3	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	5 - 25	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total moss	40 - 90	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	10
Late (Good)	_____	_____
Mid (Fair)	_____	_____
Early (Poor)	_____	_____

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	ST22	Ganhona
	ST248	Kusdry
	ST41	MacLaren
	"	Sinona
	ST411	MacLaren

172Xy104AK - Stream Terraces

Spruce/shrub birch woodland

Part A: Description of Site

1.c. Landscape Narrative: This site consists of level to gently sloping stream terraces and nearly level to moderately steep dissected stream terraces formed in a thin to moderately thick layer of stratified sandy and silty alluvium over very gravelly alluvium. Permafrost is generally absent on this site. Elevation is from about 1950 to 2600 feet (594 to 792 m).

This site occurs along all reaches of the Gulkana River and is probably widespread on stream terraces elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 19 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The moderately well developed soils on this site typically have a mantle of stratified sandy and silty alluvium 2 to 31 inches (5 to 79 cm) thick over very gravelly alluvium. The surface organic mat ranges from 1 to 6 inches (2.5 to 15 cm) thick. Depth to seasonal high water table is more than 6 feet (1.8 m) and the soils are well drained.

4.e. Vegetation Narrative: Spruce/shrub birch woodland is the correlated Potential Natural Plant Community on this site. In some places this site supports Spruce/lichen woodland, which may be a persistent and relatively stable plant community on soils that are shallow to sandy and gravelly alluvium and on drier microsites such as shoulders and crests of low ridges and other convex slopes.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Wild fire impacts on the vegetation on this site are complex. In most instances, fire would kill the spruce trees and destroy much if not all of the woodland overstory. Following fires of moderate severity, sprouting from root crowns and other underground organs should initially produce Low shrub birch scrub and Low shrub birch/lichen scrub vegetation similar to the understory of the potential natural plant community. A severe burn, one in which the moss-organic layer was consumed to mineral soil, would allow for the establishment of pioneering lichens, mosses, and herbs on the soil surface. Site productivity would likely improve somewhat following a burn, but not the extent that it might on a site with shallow permafrost. Eventual stand replacement will depend to a large degree on nearby seed sources, the severity of burn, and the suitability of the seed bed. In the boreal forest zone, repeated fires generally favors the establishment of *Picea mariana* over *Picea glauca*.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy102AK - Loamy High Flood Plains, Frozen

172Xy103AK - Stream Terraces, Frozen

b. Riparian or Wetland:

172Xy101AK - Loamy High Flood Plains

172Xy105AK - Terraces, Wet

172Xy501AK - Wet Depressions

8. List of Competing Sites (number and names):

172X103AK - Loamy Stream Terraces, Frozen: similar stream terraces positions, usually not on low ridges or other convex slopes; soil with permafrost within 4 to 32 inches below mineral surface; Spruce/spruce muskeg sedge open forest vegetative potential but in most places Spruce/shrub birch woodland is present; usually with somewhat shorter trees and with lower abundance of lichens on the ground surface.

172Xy104AK - Stream Terraces
Spruce/shrub birch woodland

Part B. Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progression

(2) Degradation: Observations and data collected in the Gulkana River area suggest that in many places this site represents a retrogressive stage of site 172Xy103AK - Loamy Stream Terraces, Frozen, in which wild fire has indirectly caused the permafrost to thaw and retreat deep into the soil or possibly disappear completely.

Elsewhere, particularly on dissected terrace remnants with only a thin surface layer of finer textured alluvium, the potential for permafrost probably is limited and this site appears to represents the end point of site progression on flood plains and stream terraces. This portion of the site is also where Spruce/lichen woodland is usually found.

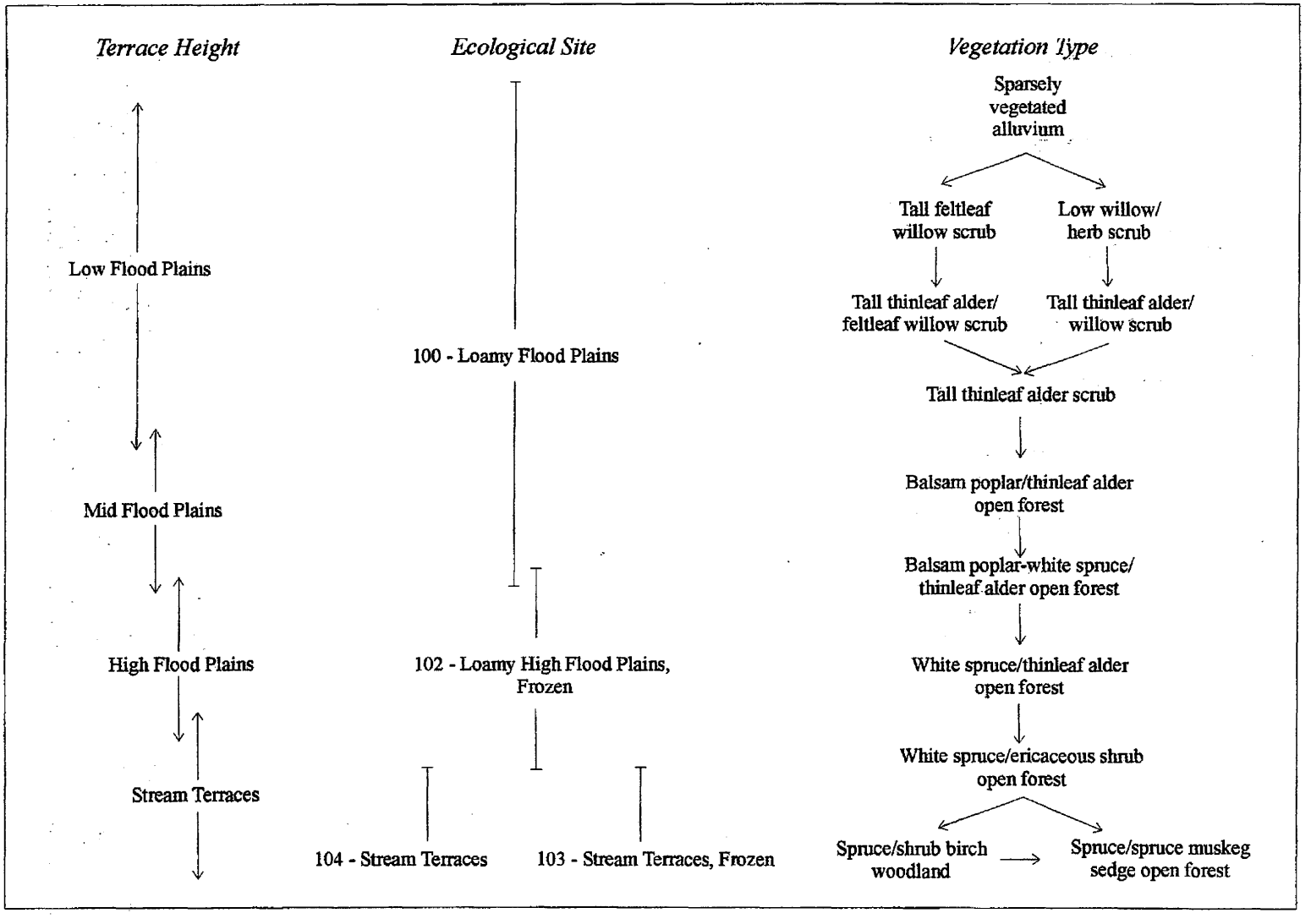
1.g. Recreation and Natural Beauty: Deteriorating stands of *Picea glauca* in the transitional zone between high flood plains and stream terraces often contain abundant downfall suitable for firewood. Standing dead trees will provide a future source of firewood.

1.k. Applicable Field Offices: BLM, Glennallen District Office

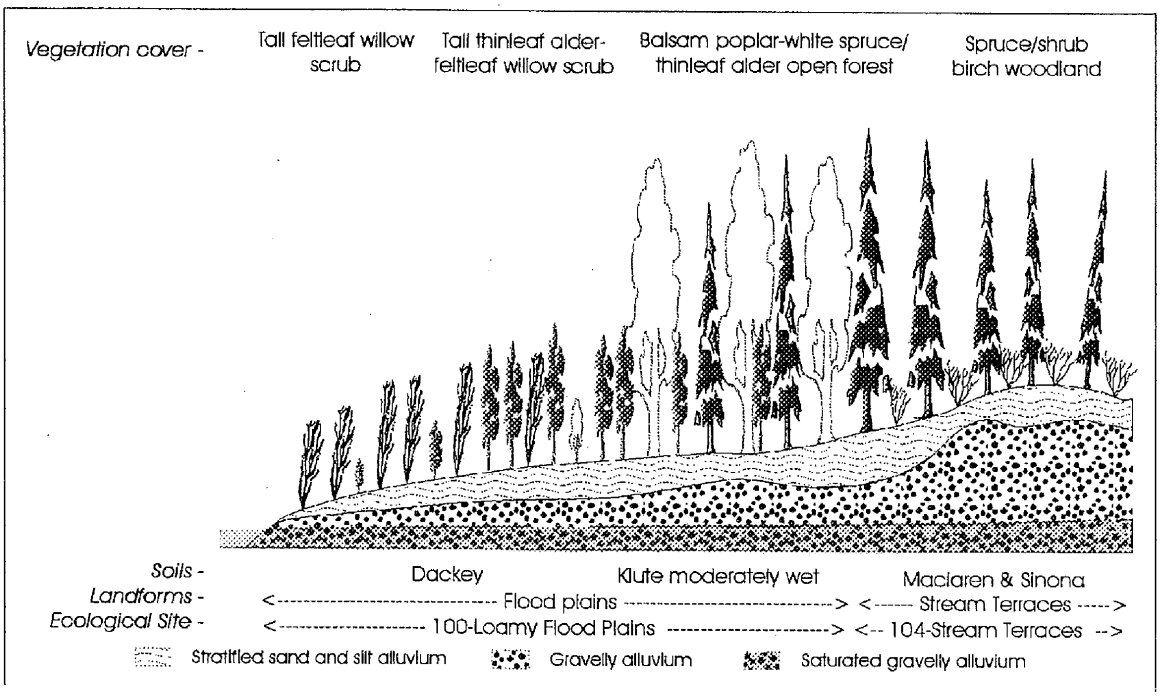
Selected physical properties for typical stages of site progression on flood plains and stream terraces in the willow zone, Gulkana River Area, Alaska.

Ecological Site (stage)	Cover Type(s)	Terrace Height avg(rge)	Flooding Frequency	Depth to SSK avg(rge)	Thickness of OM avg(rge)	Depth to Water Table		Depth to Permafrost	
						Pedons w/ <60"	Depth when <60" avg(rge)	Pedons w/ <60"	Depth when <60" avg(rge)
		-- ft --		-- in --	-- in --	-- % --	-- in --	-- % --	-- in --
205 - Loamy Flood Plains, Wet	SALIX/CAAQ	2 (1-5)	freq-occas	17 (0-42)	4 (1-10)	100	13 (0-30)	0	-
200 - Gravelly Flood Plains, Moderately Wet	SALIX/herb	3 (2-4)	occas-freq	28 (3-60)	1 (0-3)	100	28 (12-44)	0	-
201 - Loamy Flood Plains, Moderately Wet	SALIX/herb	3 (1-8)	occas-freq	25 (9-50)	1 (0-6)	79	36 (32-45)	0	-
	SALIX/herb2	7 (4-12)	occas	60 (58-60)	1 (0-1)	12	46 (46-60)	0	
101 - Loamy High Flood Plains (PNC)	PIGL/SALIX	6 (3-15)	occas-rare	27 (3-60)	2 (0-7)	39	40 (31-58)	24	33 (17-49)
101 - Loamy High Flood Plains (post-PNC)	PIGL/erica	9 (4-25)	rare-none	30 (12-60)	4 (0-10)	21	35 (8-50)	54	29 (6-52)
104 - Stream Terraces (mid to late seral)	PICEA/BEGL	11(6-25)	rare-none	30 (18-60)	4 (1-9)	9	31 (16-40)	27	36 (18-55)
103 - Stream Terraces, Frozen (PNC)	PICEA/CALU2	9 (4-20)	rare-none	30 (18-60)	7 (2-12)	100	8 (0-23)	100	15 (0-25)

Notes:
Terrace height - estimated height of flood plain or stream terrace surface above the mid summer channel level.
Depth to SSK - depth to sandy skeletal alluvium below the mineral soil surface in pedons without permafrost or in which the permafrost level was below the SSK contact; measured in the soil pit.
Thickness of OM - thickness of the surface organic mat; measured in the soil pit.
Depth to Water Table and Permafrost - Pedons w/ <60": pedons in which a water table or permafrost was present within 60 inches below the mineral surface. Depth when <60": depth below the mineral surface when present; measured in the soil pit.



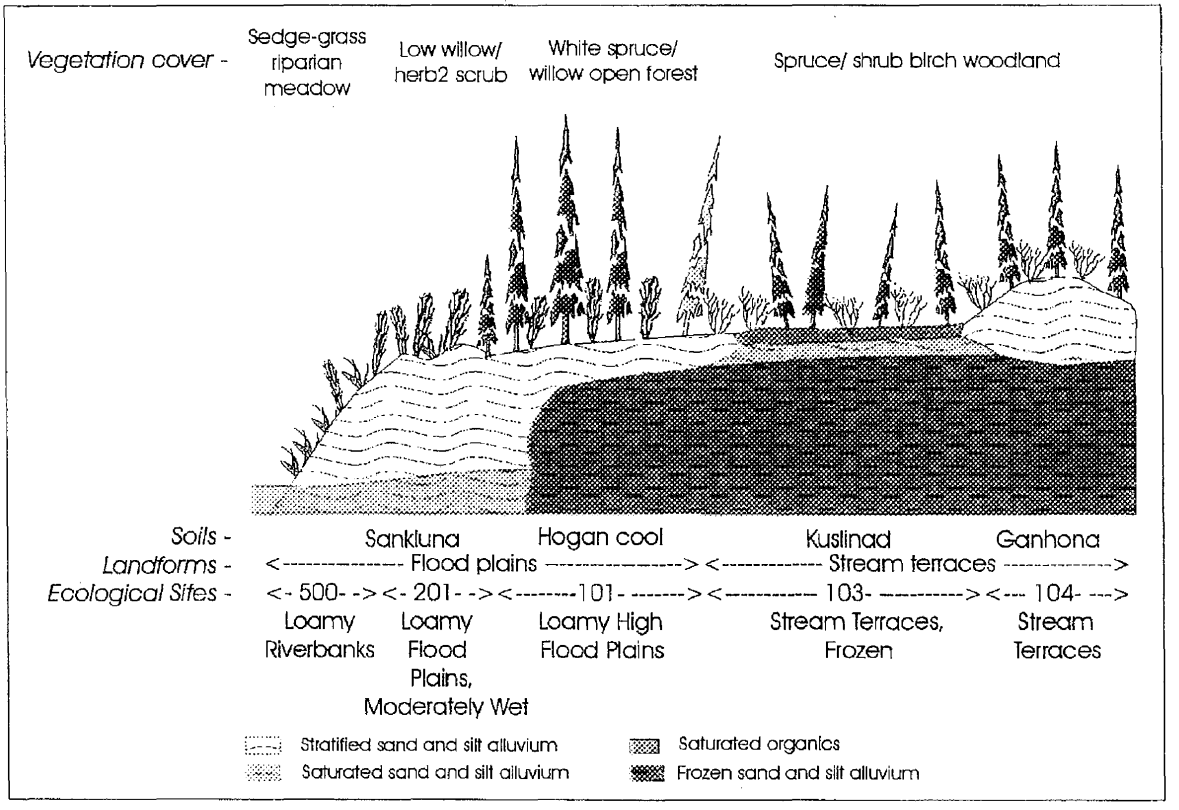
General relationships between terrace height, ecological sites, and vegetation types in the alder zone, Gulkana River Area, Alaska.



Representative cross section in the alder zone along the Main Stem below Canyon Rapids.



Representative setting of ecological site 172Xy104AK - Stream Terraces and Spruce/shrub birch woodland in the alder zone along the lower North Branch of the Gulkana River. On flood plains and point bars immediately adjacent to the river channel is ecological site 172Xy100 - Loamy Flood Plains with Tall thinleaf alder-feltleaf willow scrub and Balsam poplar/thinleaf alder open forest and ecological site 172Xy102AK - Loamy High Flood Plains, Frozen with tall White spruce/thinleaf alder open forest.



Representative cross section in the willow zone along the lower Middle Fork.

Terraces, Wet
172Xy105AK

Standard Site Description

Site Number: 172Xy105AK
Site Name: Terraces, Wet
Plant Name: PIMA/ERBR6
Date: 4/98
Initials (Author's/Agency): DRK, MHC / USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

   (1) MLRA Name: Copper River Plateau
   (2) Local Area: Gulkana River, _____
   _____

   (3) Typical Location:

   Legal: ____ 1/4; SW 1\4: NW 1\4: Sec. 11 T. 16N R. 03W Meridian Copper River
   Latitude: Deg.____ Min.____ Sec.____
   Longitude: Deg.____ Min.____ Sec.____
   UTM Coordinate: _____

1) Spe

   b. Physiography:

   (1) Landform:
   (a) Broad: _____
   (b) Specific: High stream terraces, Lacustrine terraces
   (c) Microreiief: broadly concave, hummocky
   (2) Elevation/Aspect:
   Low 1900 1All _____ High 2500 1All _____
   (3) Slope: Low: 0 % High 8 %

   c. Landscape Narrative:

   d. Associated Water Features:

   (1) Non-stream Characteristics:

   (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

   _____ _____ _____
   _____ _____ _____

   Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

   (b) Drawdown Characteristics (reserved)
   (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Containment Ratio of floodplain width/bankfull width
1.							
2.							
3.							
4.							
5.							

A) Confined (1.0 - 1.5)
B) Moderately Confined (1.5 - 2.5)
C) Unconfined (2.5+)
D) Not Determined

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____
(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic _____
b. Soil Temperature Regime: pergelic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 19 (inches)
g. Frost-Free Period: 60 to 80 (days) (28 °F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.7	.7	.6	.5	.7	2.1	3.1	2.1	1.6	1.5	.7	1.0	
LOW													
TEMP HI	7	17	28	40	53	62	66	63	52	35	15	4	(°F)
MEAN	-2	4	13	27	41	49	54	50	40	25	5	-4	
LOW	-12	-10	-2	14	28	37	42	37	28	15	-5	-13	

i. Climatic Weather Station:

(1) Location: Sourdough AK
(2) Station Number: 508825

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Cryaquepts	
(2)	Cryofibrists	
(3)	Histic Pergelic Cryaquepts Pergalic Cryohemists	clayey & loamy, mixed, nonacid loamy, mixed, euic

b. Geologic Formation:
(1) Formation(s): _____
(2) Parent material: organic matter over lacustrine deposits or alluvium

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 10 (inches) Maximum 60 (inches)
(b) Type E, A

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Histic Epipedon
(2) Thickness: Minimum 10 (inches) Maximum 60 (inches)

e. Surface Texture: PEAT, _____, _____, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 4 (inches) Maximum 38 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 4 (inches) Maximum 25 (inches)

h. AWC for Effective Plant Root Zone: Low .14 High .35 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum _____ (inches) Maximum _____ (inches)
(2) Average Thickness: _____ (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum _____(inches) Maximum _____(inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches) Minimum	Maximum	Amount (Ph) Low	High	
Surface Layers:	0	9	5.1	6.5	
Layers:	9	27	4.5	7.3	
All Other Layers:	27	60	___	___	(frozen)

m. Salinity:

	Depth Range (Inches) Minimum	Maximum	Amount (mmhos/cm) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Maximum	Amount (SAR) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	F	W	W	W	W	W	F	F	F
4-10"	↓	↓	↓	↓	↓	↓	↓	↓	↓	W	↓	↓
10-20"	↓	↓	↓	↓	F	↓	↓	↓	↓	↓	W	↓
20-40"	↓	↓	↓	↓	↓	F	F	F	F	F	F	↓
40-60"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 0 (Ft) Maximum 1 (Ft)
(2) Kind: perched
(3) Month(s): May to Oct

q. Flooding:
(1) Frequency: None
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum 0 Maximum 1 (ft)
(2) Duration: long
(3) Month(s): May to Oct

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	10 - 45	7 - 18
Shrubs	25 - 70	1 - 2.5
Grasses, Grass Like, & Forbs	15 - 75	.5 - 1.5
Cryptogams	50 - 90	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	2 - 50	_____ - _____
P	0 - 5	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 5 - 60 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIMA	black spruce	-	-	10-45	100-100	
		-	-	-	-	
		-	-	-	-	
		-	-	-	-	
		-	-	-	-	

Site Index References: _____

(2) Understory:

(a) Shrubs (and understory trees. if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIMA	blackspruce		0-15	-	-	
LEDUM	Labrador tea		5-40	-	-	
VAUL	bog blueberry		3-55	-	-	
BEGL	shrub birch		0-45	-	-	
VAVI	lowbush cranberry		2-20	-	-	

Other ..... - NTE ea

* SALIX	willow	0-15
EMNI	black crowberry	0-8
ARRU	red bearberry	0-10

* includes SABAS & SAPL2 & SAGL

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
* ERBR6	closed sheath cottongrass		15-70	___-___	___-___	
CALU2	spruce muskg sedge		0-50	___-___	___-___	
CAAQ	water sedge		0-15	___-___	___-___	
ARLA2	polar grass		0-6	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

* probably includes E. vaginatum in some stands

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
RUCH	cloudberry		0-20	___-___	___-___	
PEFR5	arctic sweet coltsfoot		0-10	___-___	___-___	
PELA	Labrador lousewort		0-1	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	1 - 25	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
Other			___-___	NTE___ea
___	___			
___	___			
___	___			
___	___			

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total bryophytes	25 - 75	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
Other			___-___	NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	29
Late (Good)	_____	_____
Mid (Fair)	_____	21
Early (Poor)	_____	_____

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	LC5	Klasi Very wet
	LL411	Pergelic Cryohemists
	"	Mendna Very Wet
	MK2	Pergelic Cryohemists
	ST24	Kuslinad Very Wet
	ST24B	"
	ST411	"
	ST5	Haggard
	TS14	Cryaquepts Very Wet

172Xy105AK - Terraces, Wet

Black spruce/closed sheath cottongrass woodland

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on nearly level and broadly concave stream terraces and lacustrine terraces and on toeslopes on lacustrine terrace escarpments. The surface is mantled in moderately thick to thick organic deposits. Surface microtopography is strongly hummocky. Most areas of this site appear to receive a surplus of water as surface runin and ground water discharge from the adjacent uplands. Ponding or wet conditions near the surface during much of the summer appear to be the most important characteristic of this site.

In the Gulkana River area, this site is of moderate extent. It occurs along the entire length of the West Fork and along the lower reaches of the Main Stem. This site probably occurs elsewhere in the Copper River basin also.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Subsection

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 19 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The soils on this site are formed in moderately thick to thick organic materials over loamy alluvium and lacustrine deposits. The surface organic mat typically ranges from about 7 to 34 inches (18 to 86 cm) thick in the inter-hummock depressions and from 16 to over 40 inches (41 to 102 cm) within the hummocks. The seasonal high water table ranges from as much as 10 inches (25 cm) of ponding to a depth of 10 inches (25 cm) below the surface and the soils are very poorly drained. Depth to permafrost ranges from within the organic material to 38 inches (97 cm) below the mineral surface. Aquic conditions including reduced matrices and saturation are present within 10 inches (25 cm) of the surface.

4.e. Vegetation Narrative: Black spruce/closed sheath cottongrass woodland is the correlated PNC on this site.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Wild fire impacts and post-fire succession on this site are complex and difficult to predict. Because of the landscape position and moisture status of the site, the vegetation probably would be susceptible to burning only during extended dry periods. Because this site receives a surplus of water as surface run-in and ground water discharge from the adjacent uplands, it should always be considerably wetter that surrounding areas. Although an increase in the depth to permafrost could occur following a fire, soil drainage probably would poor because of topography and permafrost and the site would remain wet.

Cottongrass tussocks would be expected to most impacted by fire. The degree to which *Eriophorum brachyantherum* can survive severe burning is not known. Soil and site characteristics in areas with the best tussock development suggests that their

development requires a degree of site stability. A best guess is that burning would favor an increase in sedges and dwarf shrubs and a decrease in cottongrass tussocks for an indeterminate period of time. Following light to moderate burning, Low shrub birch/closed sheath cottongrass scrub would develop on this site. Tree regeneration, primarily *Picea mariana*, would be expected to occur slowly.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy103AK - Stream Terraces, Frozen

172Xy104AK - Stream Terraces

172Xy106AK - Glaciolacustrine Uplands

172Xy107AK - Glaciolacustrine Uplands, Frozen

172Xy110AK - Glaciolacustrine Uplands, Ruptic

b. Riparian or Wetland:

172Xy111AK - Peat Mounds

172Xy202AK - Shallow Drainages

172Xy501AK - Wet Depressions

8. List of Competing Sites (number and names):

172Xy103AK - Stream Terraces, Frozen: similar position on stream terraces but usually greater slope or plane to slightly convex shape; hummocky microtopography weakly developed to lacking; less than 16 inches (41 cm) of surface organic material; water table from 0 to 18 inches (0 to 46 cm) below the mineral surface; Spruce/spruce muskeg sedge open forest vegetative potential.

172Xy107AK - Glaciolacustrine Uplands, Frozen: similar position on lacustrine but usually greater slope or plane to slightly convex shape; hummocky microtopography weakly developed to lacking; less than 16 inches (41 cm) of surface organic material; water table from 0 to 18 inches (0 to 46 cm) below the mineral surface; Spruce/spruce muskeg sedge open forest vegetative potential.

172Xy105AK - Terraces, Wet

Black spruce/closed sheath cottongrass woodland

Part B: Interpretations for Use and Management of the Site

1. a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1. b. Riparian or Wetland Site Progression:

(1) Aggradation: This site is not known to represent a progressive stage of similar or adjoining sites, in particular ecological sites 172Xy103AK - Stream Terraces, Frozen and 172Xy107AK - Glaciolacustrine Uplands, Frozen. Transitional area between these sites and ecological site 172Xy105AK - Terraces, Wet are common, however, throughout the Gulkana River Area.

(2) Degradation: Given that the soil surface is mantled with a moderately thick to thick layer of organic material throughout this site, dramatic changes in the characteristics of this site might be expected following severe wild fire during extremely dry years. The surface organic material could become highly susceptible to burning if there was a significant drop in the level of the water table during prolonged dry conditions. Ground fires under such conditions could burn into the organic mat to a considerable degree and conceivably result in a lowering of the base elevation of the surface. Later, when the water table once again rose to more normal levels, conditions may be suitable for the development of sedge wet meadow vegetation and site characteristics more typical of ecological site 172Xy501AK - Wet Depressions. Whether changes of this magnitude as a result of wild fire have in fact ever occurred is not known.

1.g. Recreation and Natural Beauty: The hummocky microtopography and wet characteristics of this site makes for extremely difficult walking when crossing areas of this site. Soil conditions result in severe limitations for trails.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy105AK - Terraces, Wet
Cover type: Black spruce/closed sheath cottongrass woodland
Seral status: PNC
Number of stands: 29
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	52	20	10	45	32
black spruce	TX	34	18	10	30	25
black spruce	T3	45	8	1	15	19
Labrador-tea	SS	100	17	5	40	42
black crowberry	SS	76	4	1	8	16
blueberry willow	SS	31	2	1	5	9
bog blueberry	SS	100	14	3	55	38
bog rosemary	SS	21	1	1	5	5
grayleaf willow	SS	14	7	1	15	10
lowbush cranberry	SS	100	6	2	20	25
red bearberry	SS	28	4	1	10	11
shrub birch	SS	97	15	2	45	38
small cranberry	SS	48	1	1	1	5
willow	SS	69	4	1	10	17
Labrador lousewort	F	17	1	1	1	3
arctic sweet coltsfoot	F	66	3	1	10	14
cloudberry	F	72	7	1	20	23
closed-sheath cottongrass	G	100	40	15	70	64
polar grass	G	52	3	1	6	12
sedge	G	21	2	1	8	7
spruce-muskeg sedge	G	38	11	2	55	20
water sedge	G	24	9	5	15	15
Moss layer	M	100	52	25	75	72
Lichen layer	L	100	11	1	25	33
Bare soil	B	21	2	1	5	6
Litter and mulch	B	100	18	2	50	42
Surface water	B	79	3	1	10	16
Woody litter (>1" dia.)	B	93	1	1	5	10

Salix spp. includes: SABA3 SAPL2

Ecological Site: 172Xy105AK - Terraces, Wet
Cover type: Spruce/spruce muskeg sedge open forest
Seral status: similar-to-PNC
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

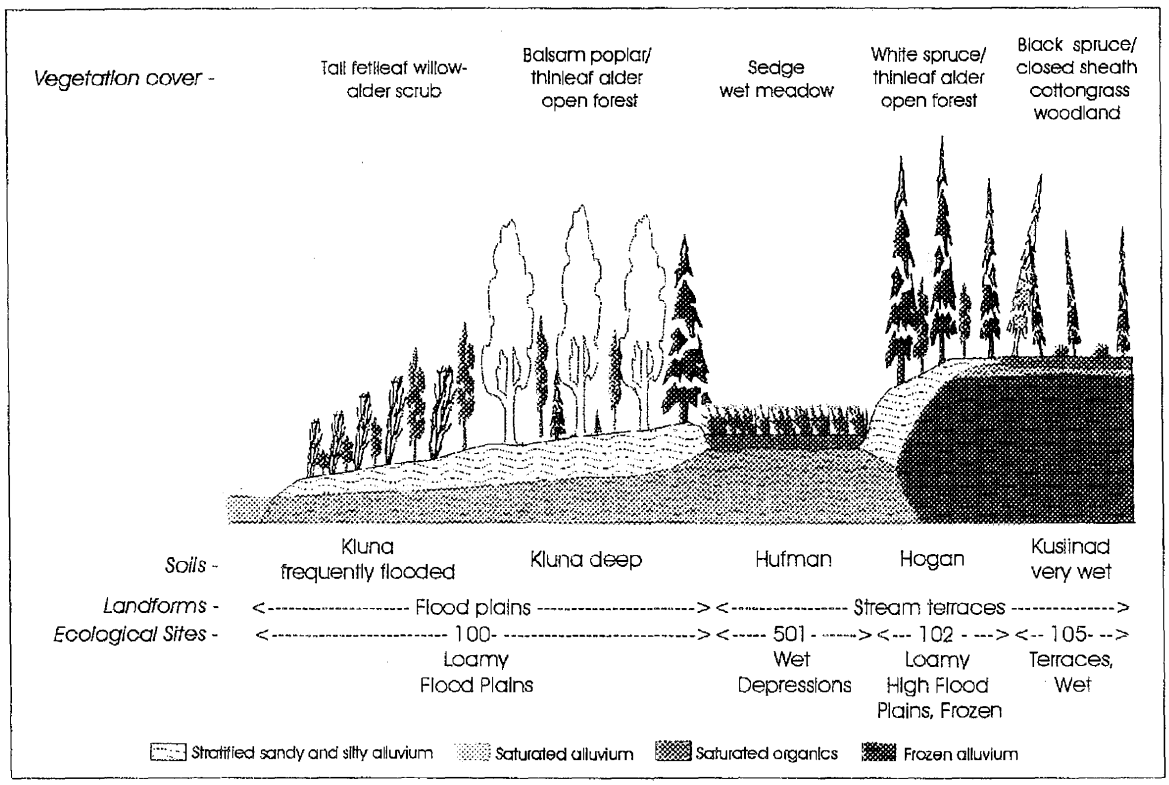
Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	TX	100	40	40	40	63
Labrador-tea	SS	100	30	30	30	55
black crowberry	SS	100	4	4	4	20
blueberry willow	SS	100	6	6	6	24
bog blueberry	SS	100	30	30	30	55
red bearberry	SS	100	10	10	10	32
shrub birch	SS	100	15	15	15	39
shrubby cinquefoil	SS	100	5	5	5	22
willow	SS	100	5	5	5	22
arctic sweet coltsfoot	F	100	1	1	1	10
cloudberry	F	100	2	2	2	14
horsetail	F	100	1	1	1	7
closed-sheath cottongrass	G	100	15	15	15	39
polar grass	G	100	1	1	1	7
spruce-muskeg sedge	G	100	55	55	55	74
Moss layer	M	100	60	60	60	77
Lichen layer	L	100	5	5	5	22
Litter and mulch	B	100	10	10	10	32
Woody litter (>1" dia.)	B	100	5	5	5	22

Salix spp. includes: SABA3

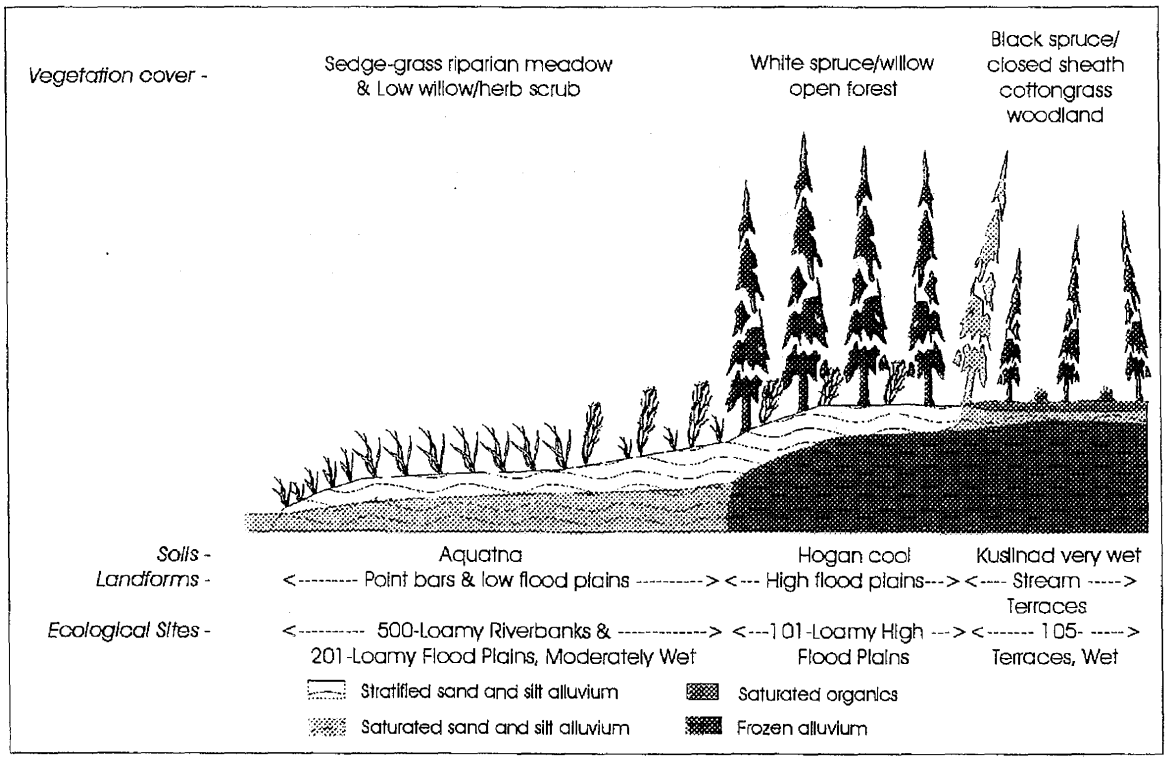
Ecological Site: 172Xy105AK - Terraces, Wet
Cover type: Low shrub birch/closed sheath cottongrass scrub
Seral status: early-mid
Number of stands: 21
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	33	4	1	7	12
white spruce	T2	19	2	2	3	7
black spruce	T3	52	13	1	30	26
white spruce	T3	24	6	3	15	12
Labrador-tea	SS	95	15	4	45	38
black crowberry	SS	38	3	1	7	11
blueberry willow	SS	24	3	1	8	9
bog blueberry	SS	100	10	1	30	31
bog rosemary	SS	38	9	1	35	19
leatherleaf	SS	33	6	1	15	14
lowbush cranberry	SS	81	8	1	65	25
red bearberry	SS	33	4	1	7	11
shrub birch	SS	100	24	2	90	49
shrubby cinquefoil	SS	24	2	1	5	7
small cranberry	SS	38	1	1	1	5
willow	SS	67	3	1	6	15
arctic sweet coltsfoot	F	33	4	1	8	11
cloudberry	F	76	3	1	7	15
closed-sheath cottongrass	G	86	59	20	85	71
cottongrass	G	14	43	25	75	25
polar grass	G	43	5	1	10	14
sedge	G	29	8	1	20	16
spruce-muskeg sedge	G	14	3	1	5	7
water sedge	G	33	16	1	40	23
Moss layer	M	100	27	5	55	52
Lichen layer	L	90	9	1	35	28
Bare soil	B	29	6	1	35	13
Litter and mulch	B	100	25	1	60	50
Surface water	B	62	7	1	35	21
Woody litter (>1" dia.)	B	71	1	1	2	7

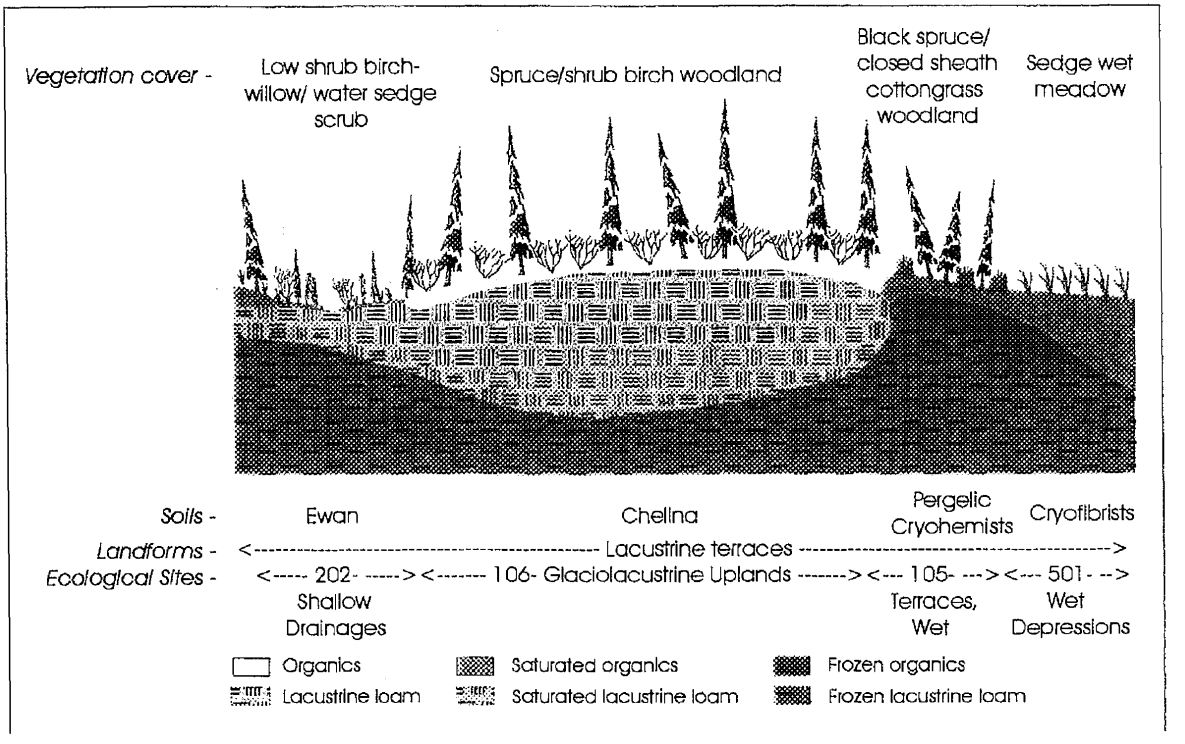
Salix spp. includes: SABA3 SALIX SAPL2



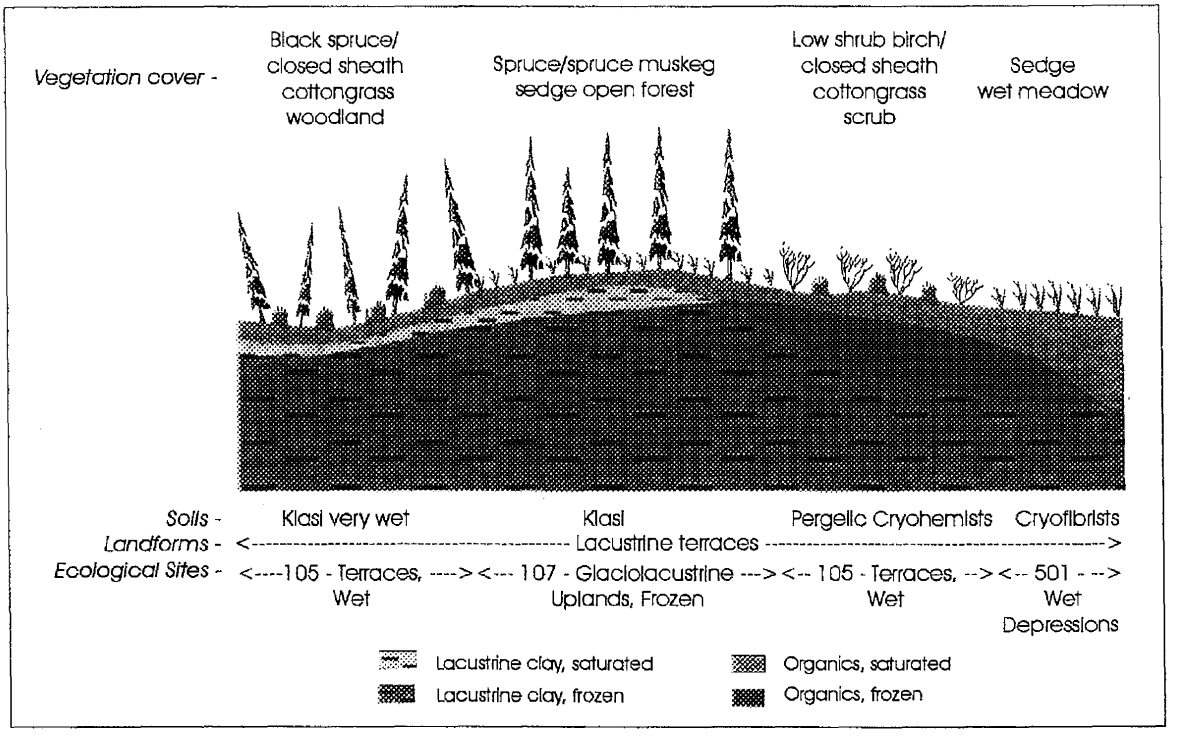
Representative cross section in the alder zone along the middle West Fork.



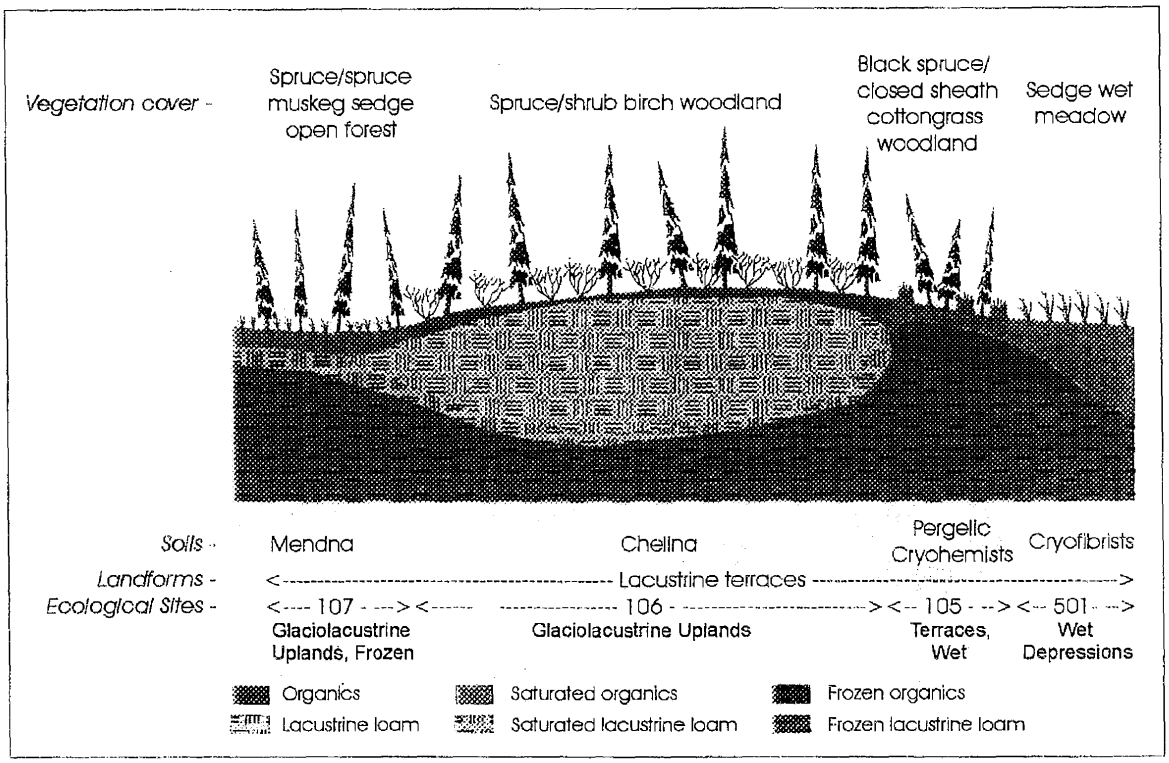
Representative cross section in the willow zone along the upper South Branch.



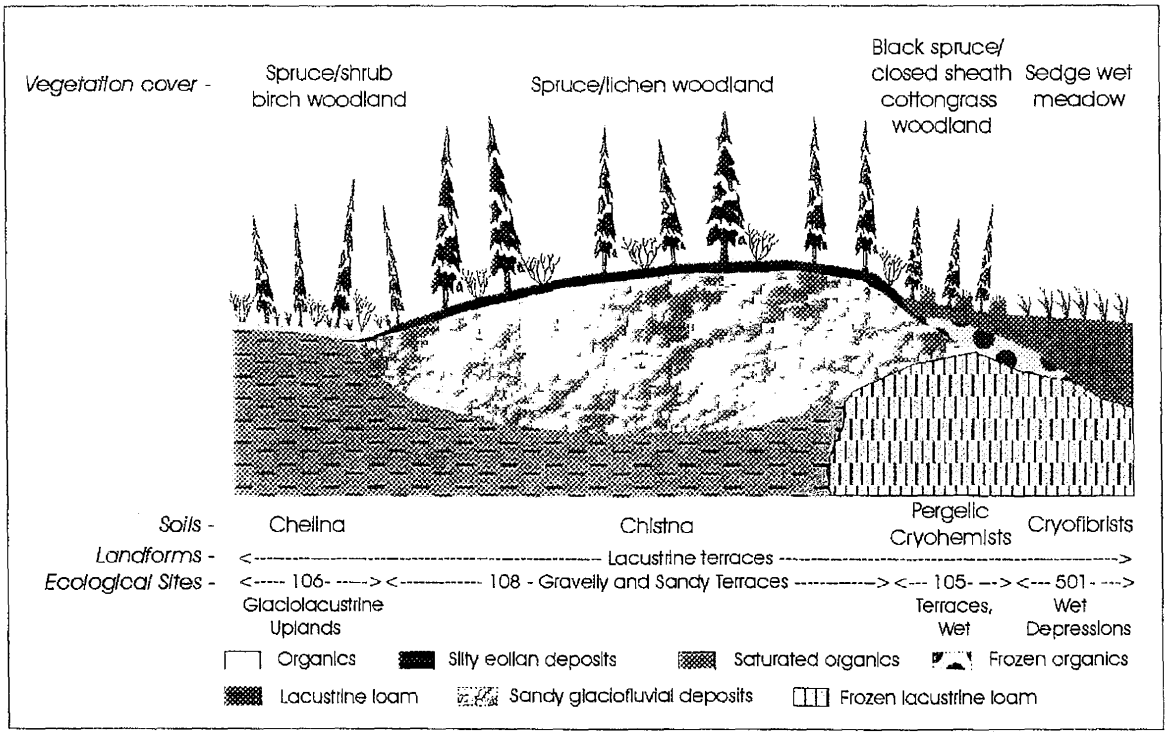
Representative cross section in the glaciolacustrine uplands above the Main Stem.



Representative cross section in the glaciolacustrine uplands above the lower Main Stem.



Representative cross section in the glaciolacustrine uplands above the Main Stem.



Representative cross section in the glaciolacustrine uplands above the West Fork.



Representative stand of Black spruce/closed sheath cottongrass woodland, the correlated potential natural plant community on ecological site 172Xy105AK - Terraces, Wet.

Glaciolacustrine Uplands
172Xy106AK

Standard Site Description

Site Number: 172Xy106AK
Site Name: Glacio lacustrine Uplands
Plant Name: PICEA/BEGL
Date: 4/98
Initials (Author's/Agency): DRK, MHC/USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

      (1) **MLRA Name:** Copper River Plateau
      (2) **Local Area:** Gulkana River

      (3) Typical Location:

      Legal: SE 1/4; NE 1\4; NW 1\4; Sec. 05 T. 12N R. 02W **Meridian** Copper River
      Latitude: Deg.____ Min.____ Sec.____
      Longitude: Deg.____ Min.____ Sec.____
      UTM Coordinate: _____

   b. Physiography:

      (1) Landform:
         (a) Broad: Uplands
         (b) Specific: lacustrine terraces, till plains, hills & mountains.
         (c) Microreiief: plane, undulating
      (2) Elevation/Aspect:
         Low 1900 / All High 2800 / All
      (3) Slope: Low: 0 % High 20 %

   c. Landscape Narrative:

   d. **Associated Water Features:**

      (1) Non-stream Characteristics:

         (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

         _____ _____ _____
         _____ _____ _____

         Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

         (b) Drawdown Characteristics (reserved)
         (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width
1.							
2.							
3.							
4.							
5.							

A) Confined (1.0 - 1.5)
B) Moderately Confined (1.5 - 2.5)
C) Unconfined (2.5+)
D) Not Determined

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____
(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___	___	___	___	___	___

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maximum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson AK
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Typic Cryochrepts	fine loamy, mixed
(2)	"	very fine, mixed (calcareous)
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: glaciolacustrine deposits, glacial till

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 1 (inches) Maximum 5 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 10
Cobbles	Low 0	High 10	Channers	Low 0	High ____
Stones	Low 0	High 10	Flagstone	Low 0	High ____

d. Surface Horizon: ochric
(1) Diagnostic Surface Horizon: umbric Epipedon
(2) Thickness: Minimum 1 (inches) Maximum 8 (inches)

e. Surface Texture: SiL, L, SiC, CL

f. Soil Depth: (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 4 (inches) Maximum 11 (inches)

h. AWC for Effective Plant Root Zone: Low .12 High .20 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
____	to ____	____	____	to ____	____
____	to ____	____	____	to ____	____
____	to ____	____	____	to ____	____
____	to ____	____	____	to ____	____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 1 (inches) Maximum 60 (inches)
(2) Average Thickness: _____(inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 60 (inches) Maximum 60 (inches)
(2) Average Thickness _____ (inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	11	4.5	6.0
Layers:	11	60	5.8	8.4
All Other Layers:				

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	M	D	D	M	M	M	F	F	F
4-10"	↓	↓	↓	F	M	M	↓	↓	↓	M	↓	↓
10-20"	↓	↓	↓	↓	F	↓	↓	↓	↓	↓	M	↓
20-40"	↓	↓	↓	↓	M	↓	↓	↓	↓	↓	↓	M
40-60"	M	M	M	M	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 6 (Ft) Maximum 6 (Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: none
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	15 - 45	25 - 50
Shrubs	50 - 85	3 - 6
Grasses. Grass Like. & Forbs	1 - 15	1 - 3
Cryptogams	40 - 85	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	5 - 30	_____ - _____
P	0 - 20	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 25 - 120 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PICEA	spruce	--	--	15-45	90-100	
POTR5	quaking aspen	--	--	0-5	0-10	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	

Site Index References:

(2) Understory:

(a) Shrubs (and understory trees. if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PICEA	spruce		0-10	--	--	
BEGL	shrub birch		0-70	--	--	
LEDUM	Labrador tea		1-60	--	--	
VAUL	bog blueberry		5-40	--	--	
* SALIX	willow		1-30	--	--	

Other ..... ___-___NTE___ea

VAVI lowbush cranberry 0-15

EMNI black crowberry 0-30

ARRU red bearberry 0-20

SAMY blueberry willow 0-15

* includes SAPL2, SAGL, SAAL

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CALUR	spruce muskeg sedge		0-15	___-___	___-___	
CACA4	bluejoint reedgrass		0-2	___-___	___-___	
ARLA2	polar grass		0-10	___-___	___-___	
FEAL	rough fescue		0-7	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
EQUIS	horsetail		0-25	___-___	___-___	
PEFR5	arctic sweet coltsfoot		0-15	___-___	___-___	
GEVI2	northern commandra		0-15	___-___	___-___	
COCA13	bunchberry dogwood		0-7	___-___	___-___	
EPAN2	common fireweed		0-2	___-___	___-___	

Other ..... ___-___NTE___ea

SENEC	groundsel	0-5

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichens	1 - 40	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
Other			___-___	NTE___ea
___	___			
___	___			
___	___			
___	___			

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total bryophytes	25 - 95	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
Other			___-___	NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		24
Late (Good)		
Mid (Fair)		10
Early (Poor)		14

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	ALR	Telay
	LCR	Gadona
	LL1	Chelina
	LL12	"
	LL13	"
	LL3	Gadona
	TS1R	Chelina

172Xy106AK - Glaciolacustrine Uplands

Spruce/shrub birch woodland

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on lacustrine terraces, till plains, and hills formed in loamy and clayey lacustrine deposits and gravelly and loamy glacial till. Permafrost is generally absent. Slopes in most places range from 0 to about 20 percent. Elevation is from 1900 to 2800 feet (579 to 853 m).

This site is found throughout the uplands in the Gulkana River area. It occurs intermittently on the same landscape with sites with shallow permafrost. This site is extensive at low to mid elevations throughout the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The poorly developed soils on this site are formed in gravelly glacial till and fine-grained lacustrine deposits. The organic mat is generally less than 6 inches (15 cm) thick. Some soils have a surface mantle of silty eolian material up to 8 inches (20 cm) thick. In most places there is no water table present within the soil profile and the soils are well drained.

4.e. Vegetation Narrative: Spruce/shrub birch woodland is the correlated PNC on this site.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Vegetation on this site is highly susceptible to wild fire. In most instances, fire would kill the spruce trees and destroy much if not all of the woodland overstory. Following fires of moderate or less severity, sprouting from root crowns and other underground organs should initially produce Low shrub birch scrub or similar vegetation. A severe burn, one in which the moss-organic layer was consumed to mineral soil, would allow for the establishment of pioneering lichens, mosses, and herbs on the soil surface.

Regeneration of the woodland overstory will depend to a large degree on available seed sources, severity of burn, and suitability of the seed bed and environment. In the boreal forest zone, repeated fires generally favors the establishment of black spruce over white spruce. Continued tree regeneration and growth would eventually lead to Spruce/shrub birch woodland. Post-fire succession on severely burned areas may pass through a Spruce/lichen woodland stage. This vegetation could persist for an extended period of time until the moss-organic layer becomes re-established.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy107AK - Glaciolacustrine Uplands, Frozen

172Xy108AK - Sandy and Gravelly Terraces

172Xy109AK - Mountain Slopes, Shallow

172Xy110AK - Glaciolacustrine Uplands, Ruptic

b. Riparian or Wetland:

172Xy105AK - Terraces, Wet

172Xy202AK - Shallow Drainages

172Xy501AK - Wet Depressions

8. List of Competing Sites (number and names):

172Xy107AK - Glaciolacustrine Uplands, Frozen: similar position on lacustrine terraces, till plains, and hills; soils with shallow permafrost, a perched water table, and restricted drainage; Spruce/spruce muskeg sedge open forest vegetative potential.

107Xy108AK - Sandy and Gravelly Terraces: isolated strandline and outwash deposits and high stream terraces; soils formed in sandy and gravelly materials; Spruce/lichen woodland vegetative potential.

172Xy109AK - Mountain Slopes, Shallow: gently sloping to steep mountain slopes and crests; soils shallow to bedrock; similar vegetative potential.

172Xy110AK - Glaciolacustrine Uplands, Ruptic: similar landforms and landscape position; soils formed in clayey and fine loamy lacustrine materials; microtopography a complex of frost boils and intervening swales and troughs; Spruce/shrub birch woodland vegetative potential.

172Xy106AK - Glaciolacustrine Uplands
Spruce/shrub birch woodland

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progressions:

(2) Degradation: Snags and charred downfall, a thin, weakly developed moss-organic mat, and other evidence of past wild fires, are common in most stands suggesting that this site does in fact experience recurring wild fires. Additional evidence includes scattered spruce trees and clumps of trees in stands of seral Low shrub birch scrub. In places, this site occurs side-by-side on the same landform with ecological site 172Xy107AK - Glaciolacustrine Uplands, Frozen, suggesting that 172Xy106AK - Glaciolacustrine Uplands is a retrogressive stage of 172Xy107AK - Glaciolacustrine Uplands, Frozen that develops following wild fire. Prominent fire lines are evident between areas of the two sites.

Absence of fire for an extended period of time in 172Xy106AK - Glaciolacustrine Uplands would allow the moss-organic layer to thicken and insulate the soils, favoring the development of permafrost and restricted soil drainage. Continued development of the moss-organic layer and soil permafrost and vegetative succession would lead to site progression toward ecological site 172Xy107AK - Glaciolacustrine Uplands, Frozen.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy106AK - Glaciolacustrine Uplands
Cover type: Spruce/shrub birch woodland
Seral status: PNC
Number of stands: 24
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	13	28	15	45	19
quaking aspen	T2	17	2	1	3	5
spruce	T2	21	26	15	40	23
white spruce	T2	67	15	10	20	32
black spruce	T3	13	4	1	5	7
white spruce	T3	42	6	1	10	15
Labrador-tea	SS	100	24	7	60	49
black crowberry	SS	88	7	1	30	24
blueberry willow	SS	38	5	1	15	14
bog blueberry	SS	100	21	5	40	46
feltleaf willow	SS	13	15	5	20	14
grayleaf willow	SS	46	10	1	20	22
lowbush cranberry	SS	96	6	1	15	23
prickly rose	SS	50	2	1	5	9
red bearberry	SS	50	3	1	20	13
shrub birch	SS	88	37	2	70	57
shrubby cinquefoil	SS	17	3	1	5	7
small cranberry	SS	17	1	1	1	3
willow	SS	71	8	1	30	24
Canadian bunchberry	F	63	2	1	7	12
Labrador lousewort	F	42	1	1	1	5
arctic sweet coltsfoot	F	58	3	1	15	14
cloudberry	F	17	1	1	2	5
clubmoss	F	21	2	1	5	6
common fireweed	F	63	1	1	2	7
horsetail	F	63	9	1	25	24
northern commandra	F	13	7	3	15	9
ragwort	F	58	1	1	5	7
bluejoint reedgrass	G	38	1	1	2	5
polar grass	G	75	3	1	10	14
rough fescue	G	21	3	1	7	8
sedge	G	21	2	1	7	7
spruce-muskeg sedge	G	33	4	1	15	12
Moss layer	M	100	49	25	85	70
Lichen layer	L	100	19	1	40	43
Bare soil	B	50	2	1	5	10
Litter and mulch	B	100	12	1	30	34
Rock fragments	B	13	1	1	2	4
Woody litter (>1" dia.)	B	67	5	1	20	18

Salix spp. includes: SALIX SAPL2

Ecological Site: 172Xy106AK - Glaciolacustrine Uplands
Cover type: Spruce/lichen woodland
Seral status: PNC (drier_microsites)
Number of stands: 10
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	60	25	10	40	39
black spruce	T3	60	6	3	10	19
quaking aspen	T3	20	1	1	2	5
white spruce	T3	30	6	5	7	13
Labrador-tea	SS	100	25	10	40	50
black crowberry	SS	60	4	2	10	16
blueberry willow	SS	60	3	1	5	13
bog blueberry	SS	100	26	8	45	51
grayleaf willow	SS	70	11	5	20	28
lowbush cranberry	SS	100	9	4	20	30
prickly rose	SS	50	2	1	5	10
red bearberry	SS	40	3	1	5	10
shrub birch	SS	90	30	1	65	52
willow	SS	50	8	3	10	19
Canadian bunchberry	F	50	1	1	2	7
arctic sweet coltsfoot	F	20	2	1	3	6
clubmoss	F	20	1	1	2	5
horsetail	F	30	3	1	6	10
northern commandra	F	20	1	1	1	3
polar grass	G	20	3	1	4	7
rough fescue	G	30	2	1	3	7
sedge	G	30	1	1	1	4
Moss layer	M	100	24	15	30	48
Lichen layer	L	100	45	30	65	67
Bare soil	B	80	2	1	5	12
Litter and mulch	B	100	15	1	35	38
Woody litter (>1" dia.)	B	70	8	1	25	23

Salix spp. includes: SAPL2

Ecological Site: 172Xy106AK - Glaciolacustrine Uplands
Cover type: Low shrub birch scrub
Seral status: early-mid
Number of stands: 9
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

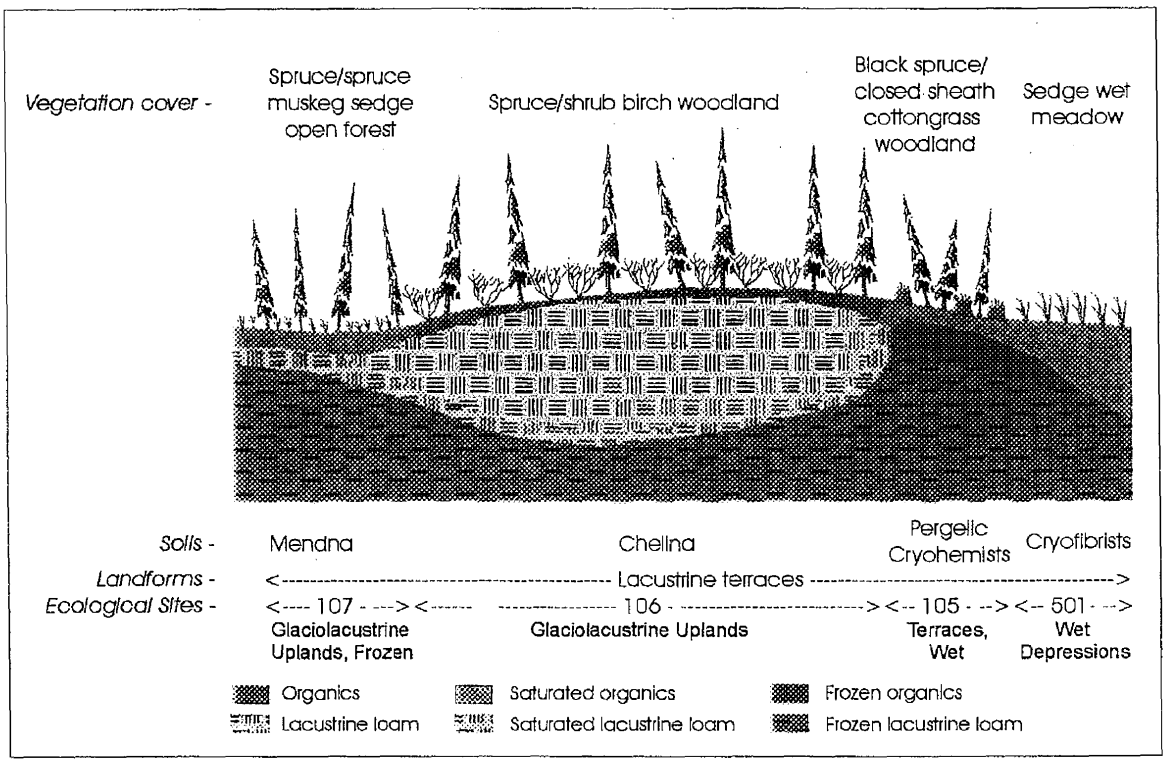
Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	56	9	1	15	22
white spruce	T2	33	4	2	8	12
white spruce	T3	56	12	1	30	25
Beauverd spiraea	SS	11	5	5	5	7
Labrador-tea	SS	100	27	10	40	52
Scouler willow	SS	11	1	1	1	2
black crowberry	SS	67	4	2	10	16
blueberry willow	SS	44	4	1	7	13
bog blueberry	SS	100	31	5	60	56
feltleaf willow	SS	22	1	1	1	3
grayleaf willow	SS	78	8	1	20	25
lowbush cranberry	SS	67	5	1	15	17
net vein willow	SS	33	2	1	2	7
prickly rose	SS	33	2	1	5	8
red bearberry	SS	44	4	1	5	13
shrub birch	SS	100	58	10	85	76
shrubby cinquefoil	SS	22	3	2	3	7
shurb birch (hybrid)	SS	11	1	1	1	2
willow	SS	78	3	1	5	16
Canadian bunchberry	F	44	2	1	3	8
Labrador lousewort	F	56	1	1	1	5
Unknown forb	F	11	1	1	1	2
arctic dock	F	11	1	1	1	2
arctic sweet coltsfoot	F	22	2	1	3	7
cloudberry	F	11	1	1	1	3
clubmoss	F	11	1	1	1	2
common fireweed	F	89	1	1	1	7
horsetail	F	33	1	1	3	7
marsh grass-of-parnassus	F	11	1	1	1	2
milk-vetch	F	11	1	1	1	2
ragwort	F	22	1	1	1	3
tall Jacob`s-ladder	F	22	1	1	1	3
bluejoint reedgrass	G	11	5	5	5	7
polar grass	G	44	2	1	6	9
rough fescue	G	67	1	1	2	7
spruce-muskeg sedge	G	22	28	1	55	25
Moss layer	M	100	34	15	65	59
Lichen layer	L	100	13	1	20	36
Bare soil	B	33	4	1	7	12
Litter and mulch	B	56	20	5	35	33
Rock fragments	B	11	1	1	1	2
Surface water	B	11	1	1	1	2
Woody litter (>1" dia.)	B	56	4	1	10	14

Salix spp. includes: SABA3 SAPL2

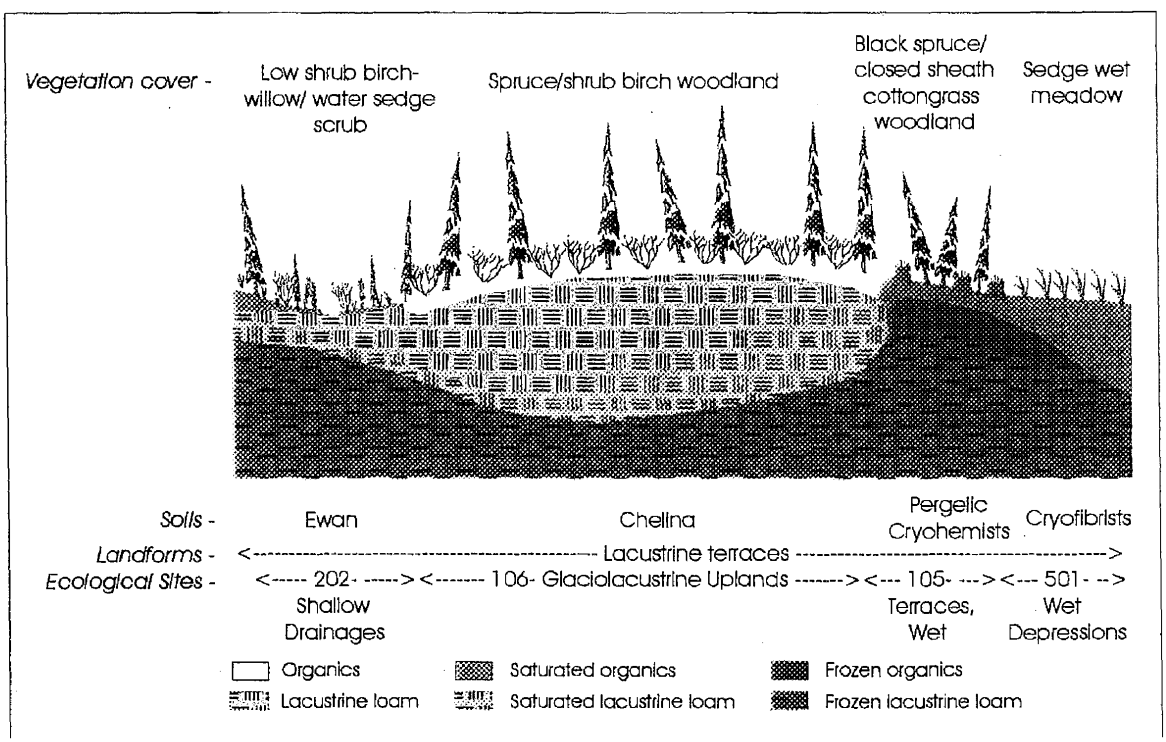
Ecological Site: 172Xy106AK - Glaciolacustrine Uplands
Cover type: Low shrub birch/lichen scrub
Seral status: early (drier microsites)
Number of stands: 5
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	20	1	1	1	4
black spruce	T2	20	1	1	1	3
white spruce	T2	80	6	2	15	21
black spruce	T3	20	5	5	5	10
white spruce	T3	100	2	1	5	14
Beauverd spiraea	SS	20	1	1	1	3
Labrador-tea	SS	100	25	4	60	50
Scouler willow	SS	20	1	1	1	4
black crowberry	SS	80	7	2	15	24
blueberry willow	SS	20	4	4	4	9
bog blueberry	SS	100	16	5	40	40
grayleaf willow	SS	60	2	1	5	11
lowbush cranberry	SS	100	3	1	4	17
prickly rose	SS	20	1	1	1	3
red bearberry	SS	40	1	1	2	7
russet buffalo-berry	SS	20	4	4	4	9
shrub birch	SS	100	55	10	85	74
shrubby cinquefoil	SS	20	1	1	1	3
willow	SS	80	4	1	7	19
Canadian bunchberry	F	20	1	1	1	3
Labrador lousewort	F	40	1	1	1	4
arctic sweet coltsfoot	F	40	3	1	5	11
cloudberry	F	20	1	1	1	4
clubmoss	F	20	1	1	1	4
common fireweed	F	60	1	1	1	6
horsetail	F	60	4	1	10	15
ragwort	F	20	1	1	1	3
blue grass	G	20	1	1	1	3
bluejoint reedgrass	G	40	1	1	1	4
closed-sheath cottongrass	G	20	1	1	1	3
narrow false oat	G	20	1	1	1	3
polar grass	G	40	1	1	2	7
rough bent	G	20	1	1	1	3
rough fescue	G	40	4	1	6	12
sedge	G	20	1	1	1	3
Moss layer	M	100	35	25	45	59
Lichen layer	L	100	41	30	55	64
Bare soil	B	60	2	1	5	11
Litter and mulch	B	100	18	5	30	42
Rock fragments	B	40	1	1	1	4
Surface water	B	20	1	1	1	3
Woody litter (>1" dia.)	B	80	4	1	7	18

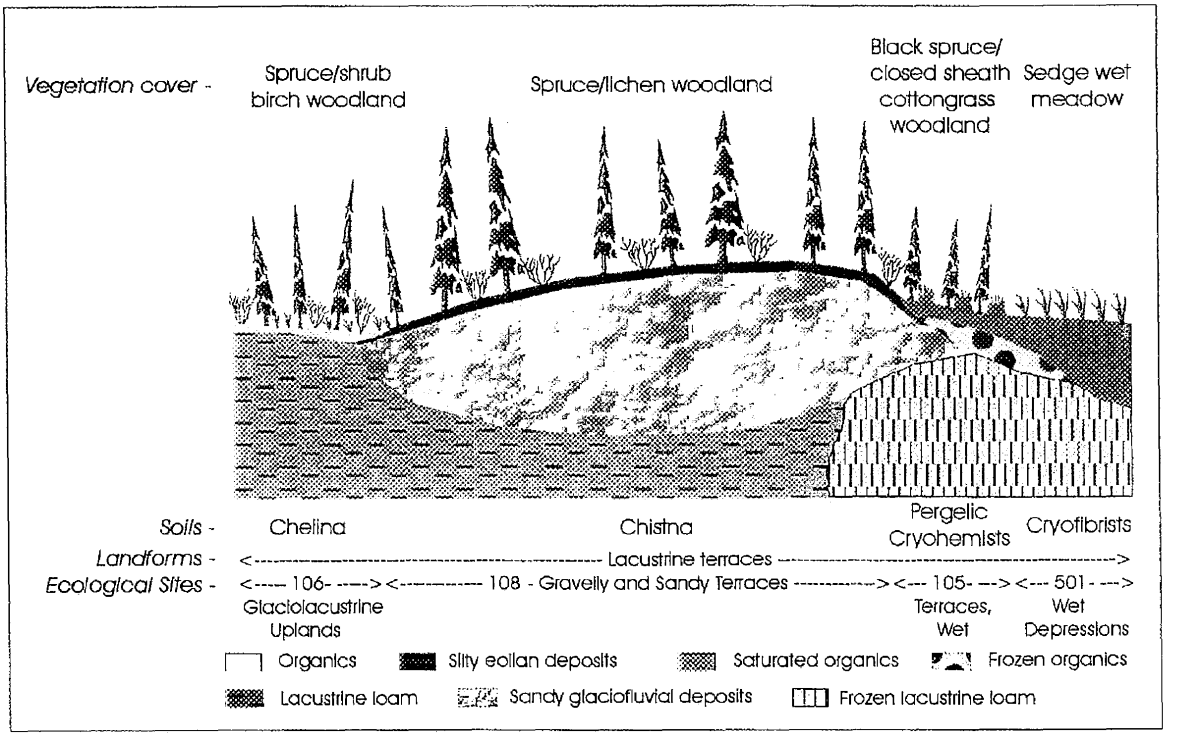
Salix spp. includes: SABA3 SAPL2



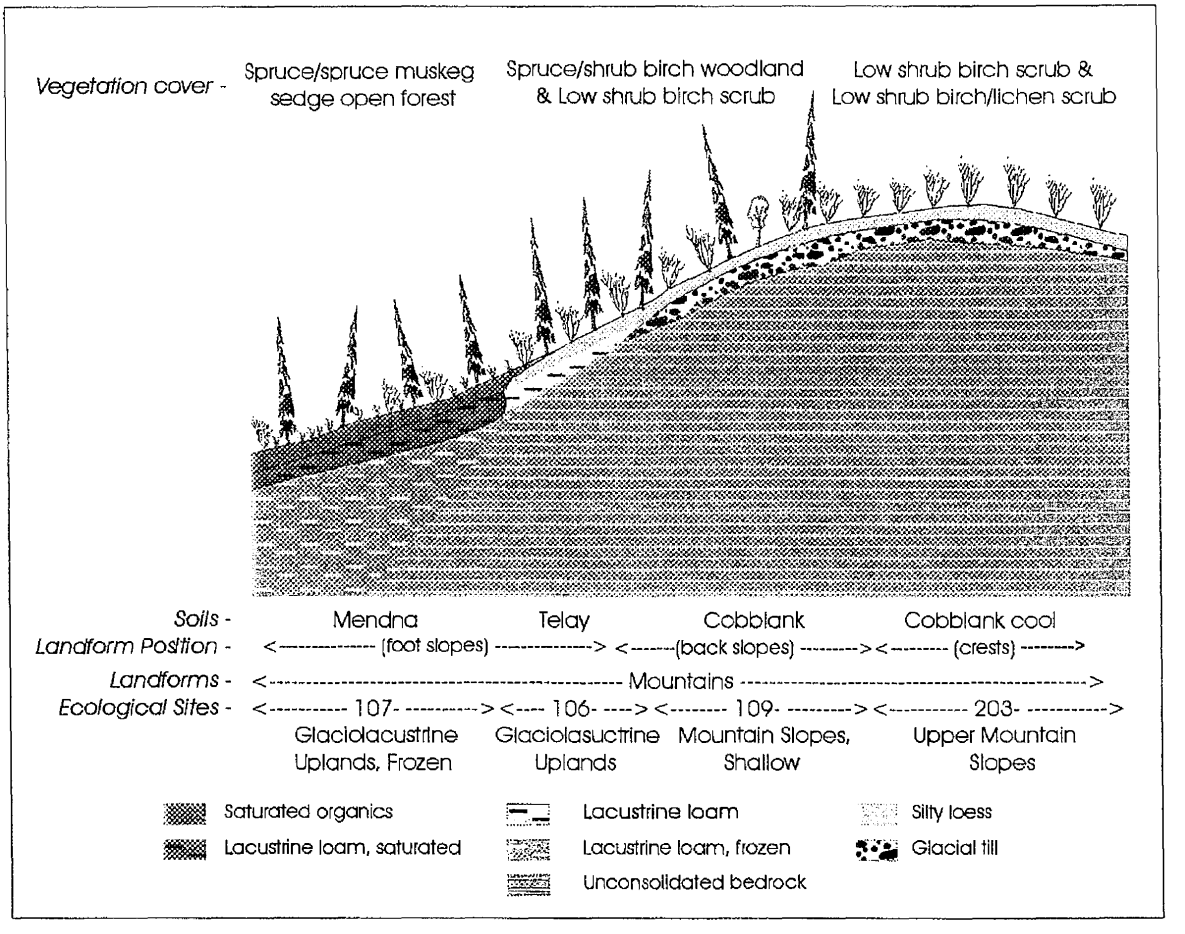
Representative cross section in the glaciolacustrine uplands above the Main Stem.



Representative cross section in the glaciolacustrine uplands above the Main Stem.



Representative cross section in the glaciolacustrine uplands above the West Fork.



Representative cross section of mountains slopes above the upper Main Stem.

Glaciolacustrine Uplands, Frozen
172Xy107AK

Standard Site Description

Site Number: 172Xy107AK
Site Name: Glaciolacustrine Uplands, Frozen
Plant Name: PICEA/CALH2
Date: 4/98
Initials (Author's/Agency): DRK, MHC/USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

      (1) MLRA Name: Copper River Plateau
      (2) Local Area: Gulkana River, _____, _____

      (3) Typical Location:

      Legal: SW 1/4; NE 1\4; SW 1\4; Sec. 27 T. 11N R. 02W Meridian Copper River
      Latitude: Deg.____ Min.____ Sec.____
      Longitude: Deg.____ Min.____ Sec.____
      UTM Coordinate: _____

   b. Physiography:

      (1) Landform:
         (a) Broad: Glaciolacustrine uplands
         (b) Specific: lacustrine terraces, till plains, hills & mountains.
         (c) Microrelief: plane, undulating
      (2) Elevation/Aspect:
         Low 1900 / All High 2800 / All
      (3) Slope: Low: 0 % High 25 %

   c. Landscape Narrative:

   d. Associated Water Features:

      (1) Non-stream Characteristics:

         (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

         _____ _____ _____
         _____ _____ _____

         Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

         (b) Drawdown Characteristics (reserved)
         (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of floodplain width/bankfull width
1.							
2.							
3.							
4.							
5.							

A) **Confined** (1.0 - 1.5)
B) **Moderately Confined** (1.5 - 2.5)
C) **Unconfined** (2.5+)
D) **Not Determined**

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____
(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic _____
b. Soil Temperature Regime: Pergelic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.7	.7	.6	.5	.7	2.1	3.1	2.1	1.6	1.5	.7	1.0	
LOW													
TEMP HI	7	17	28	40	53	62	66	63	52	35	15	4	(°F)
MEAN	-2	4	13	27	41	49	54	50	40	25	5	-4	
LOW	-12	-10	-2	14	28	37	42	37	28	15	-5	-13	

i. Climatic Weather Station:

(1) Location: Sourdough AK
(2) Station Number: 508625

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Histic Pergelic Cryaquepts	clayey OR loamy OR sandy, mixed, nonacid
(2)		
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: lacustrine deposits, glacial till

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 3 (inches) Maximum 15 (inches)
(b) Type E, A

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Histic Epipedon
(2) Thickness: Minimum 3 (inches) Maximum 15 (inches)

e. Surface Texture: L, CL, SiL, SiC

f. Soil Depth: (not to exceed 2 classes)
Minimum 10 (inches) Maximum 40 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 3 (inches) Maximum 15 (inches)

h. AWC for Effective Plant Root Zone: Low .18 High .35 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 0 (inches) Maximum 40 (inches)
(2) Average Thickness: _____(inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 0 (inches) Maximum 23 (inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches) Minimum	Maximum	Amount (Ph) Low	High	
Surface Layers:	0	9	5.1	6.5	(organic)
Layers:	9	20	5.6	7.8	
All Other Layers:	20	60	___	___	(frozen)

m. Salinity:

	Depth Range (Inches) Minimum	Maximum	Amount (mmhos/cm) Low	High
Surface Layers:	___	___	___	___
Layers:	___	___	___	___
All Other Layers:	___	___	___	___

n. Sodicity:

	Depth Range (Inches) Minimum	Maximum	Amount (SAR) Low	High
Surface Layers:	___	___	___	___
Layers:	___	___	___	___
All Other Layers:	___	___	___	___

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	W	W	W	W	W	W	F	F	F
4-10"	↓	↓	↓	F	F	↓	↓	↓	↓	W	↓	↓
10-20"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
20-40"	↓	↓	↓	↓	↓	F	F	F	F	F	↓	↓
40-60"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 0 (Ft) Maximum 1.5 (Ft)
(2) Kind: perched
(3) Month(s): Apr. to Oct.

q. Flooding:
(1) Frequency: none
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum 0 Maximum .5 (ft)
(2) Duration: brief
(3) Month(s): Apr to May

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	10 - 45	12 - 40
Shrubs	35 - 70	2 - 5
Grasses, Grass Like, & Forbs	15 - 80	1 - 2
Cryptogams	60 - 95	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	2 - 50	_____ - _____
P	1 - 15	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 20 - 140 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PICEA	spruce	-	-	10-45	100-100	
		-	-	-	-	
		-	-	-	-	
		-	-	-	-	
		-	-	-	-	

Site Index References: _____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PICEA	spruce		0-30	-	-	
LEDUM	Labrador tea		4-40	-	-	
BEGL	shrub birch		3-55	-	-	
VAUL	bog blueberry		5-35	-	-	
* SALIX	willow		0-35	-	-	

Other ..... ____-____NTE____ea

EANI black crowberry 0-15

ARRU red bearberry 0-15

VAVI lowbush cranberry 0-10

SAGL greyleaf willow 0-25

includes SAPL2, SABA3, SARI4

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CALUR	spruce muskeg sedge		15-80	___-___	___-___	
CACA4	bluejoint reedgrass		0-3	___-___	___-___	
ARLA2	polar grass		0-7	___-___	___-___	
ERBR6	closed sheath	cottongrass	0-15	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
PEFR5	arctic sweet	coltsfoot	1-25	___-___	___-___	
RUCH	cloudberry		0-30	___-___	___-___	
EQUIS	horsetail		0-20	___-___	___-___	
PELA	Labrador lousewort		___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	3 - 55	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total bryophyte	20 - 90	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		36
Late (Good)		35
Mid (Fair)		
Early (Poor)		9

e. Vegetation Narrative:

5. Wildlife

a. Species List:

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	LC1	Klasi
	LC5	"
	LL1	Mendna
	LL2	"
	TS1	Cryaquepts
	TS12	Mendna
	TS14	Cryaquepts
	TS3	Mankomen

172Xy107AK - Glaciolacustrine Uplands, Frozen

Spruce/spruce muskeg sedge open forest

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on lacustrine terraces, till plains, and hills formed in loamy and clayey lacustrine deposits and gravelly and loamy glacial till. The soil surface has a moderately thick organic mat and permafrost is generally present within 60 inches (152 cm) of the mineral surface. Slope ranges from 0 to 25 percent but are generally less than 10 percent. Elevation is from 1900 to 2800 feet (579 to 853 m).

This site is found throughout the uplands in the Gulkana River Area. It occurs intermittently on the same landscapes with sites without permafrost. This site is extensive at low to mid elevations throughout the Copper River Basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The poorly developed soils on this site are formed in gravelly glacial till and fine-grained lacustrine deposits. Some soils have mantles of silty eolian material up to 2 inches thick. In the absence of wild fire, an organic mat about 8 to 16 inches (20 to 41 cm) thick develops on the soil surface and in most places permafrost is present above 60 inches (152 cm). A water table is usually perched on the permafrost and the soils are poorly to very poorly drained.

4.e. Vegetation Narrative: Spruce/spruce muskeg sedge open forest is the correlated PNC on this site.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Following wild fire, post-fire succession would likely begin with a short lived herb stage in which *Betula glandulosa* and ericaceous shrubs from the original forest vegetation would sprout and regenerate. Within about 5 to 10 years, Low shrub birch scrub, often with common to abundant tall willows and spruce seedlings and saplings, would dominate the site. Depending on pre-fire overstory composition and available fire seed sources, tree regeneration may also include *Populus tremuloides*. Vegetation succession would lead to Spruce/shrub birch woodland and eventually to the Spruce/spruce muskeg sedge open forest.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy106AK - Glaciolacustrine Uplands

172Xy108AK - Sandy and Gravelly Terraces

172Xy109AK - Mountain Slopes, Shallow

172Xy110AK - Glaciolacustrine Uplands, Ruptic

b. Riparian or Wetland:

172Xy105AK - Terraces, Wet

172Xy202AK - Shallow Drainages

172Xy501AK - Wet Depressions

8. List of Competing Sites (number and names):

172Xy106AK - Glaciolacustrine Uplands: similar landforms and landscape position; soils formed in similar materials but with only a thin organic mat, no permafrost, and well drained; Spruce/shrub birch woodland vegetative potential.

107Xy108AK - Sandy and Gravelly Terraces: isolated strandline and outwash deposits and high stream terraces; soils formed in sandy and gravelly materials; Spruce/lichen woodland vegetative potential.

172Xy109AK - Mountain Slopes, Shallow: gently sloping to steep mountain slopes and crests; soils shallow to bedrock; Spruce/shrub birch woodland vegetative potential.

172Xy110AK - Glaciolacustrine Uplands, Ruptic: similar landforms and landscape position; soils formed in clayey and fine loamy lacustrine materials; microtopography a complex of low frost boils and intervening swales and troughs; Spruce/shrub birch woodland vegetative potential.

172Xy107AK - Glaciolacustrine Uplands, Frozen
Spruce/spruce muskeg sedge open forest

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progressions:

(2) Degradation: Wild fire on this site could be expected to impact both the structure and composition of the vegetation and the characteristics of the site. Moderate to severe burns in which the moss-organic layer on the soil surface is blackened and partially to completely destroyed would favor a rapid and long-term warming of the soil profile. Over a relative short period of time, the permafrost level would drop and soil drainage should improve. In this situation, the site would be expected to retrogress to 172Xy106AK - Glaciolacustrine Uplands and Spruce/shrub birch woodland vegetative potential.

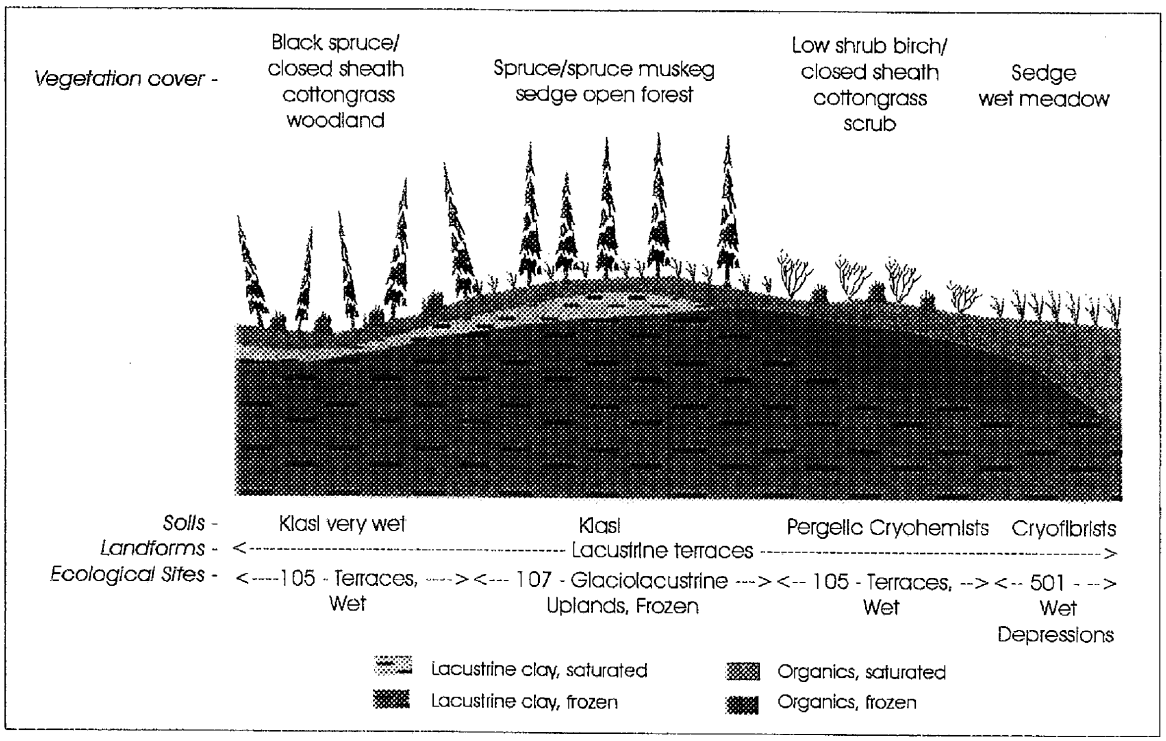
Absence of fire for an extended period of time and development of the moss-organic layer, would allow for permafrost development and site progression back to the original 172Xy107AK - Glaciolacustrine Uplands, Frozen and Spruce/spruce muskeg sedge open forest. The length of time necessary for this progressive change in site conditions is not known.

1.k. Applicable Field Offices: BLM, Glennallen District Office

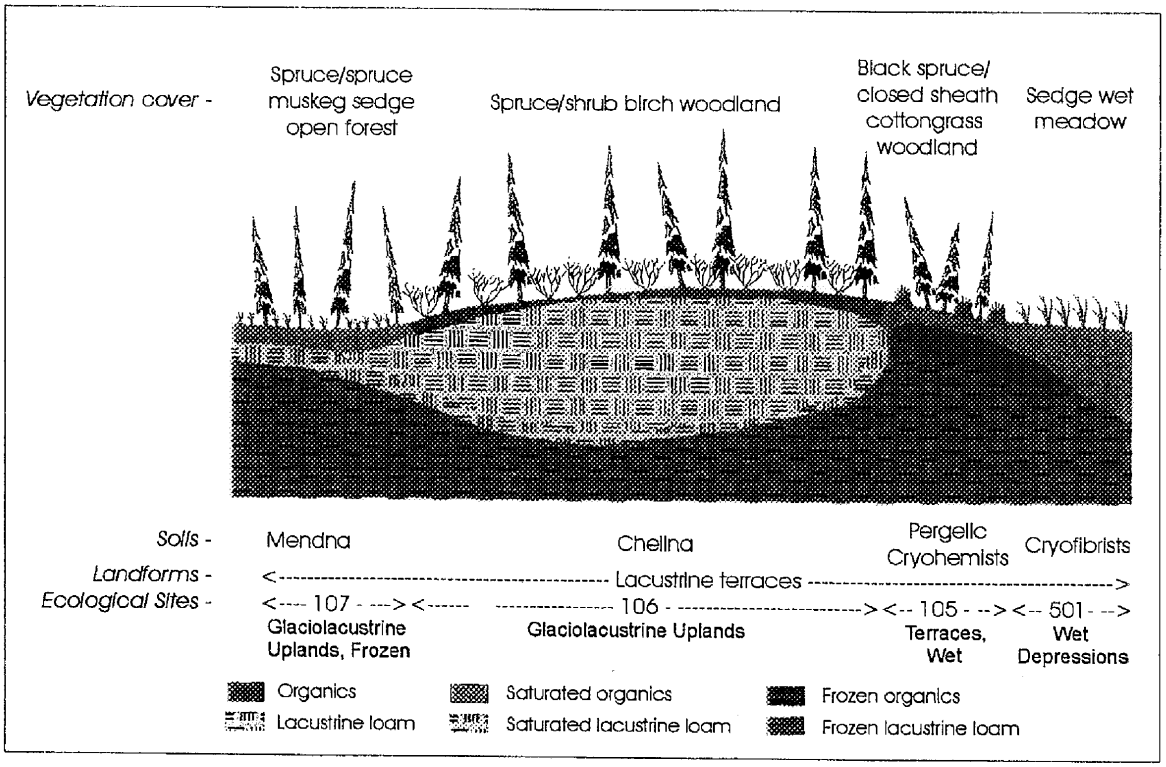
Ecological Site: 172Xy107AK - Glaciolacustrine Uplands, Frozen
Cover type: Low shrub birch scrub
Seral status: early
Number of stands: 9
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T1	22	5	2	7	10
spruce	T1	11	5	5	5	7
black spruce	T2	22	3	2	4	8
spruce	T2	11	5	5	5	7
white spruce	T2	33	5	4	5	12
black spruce	T3	33	5	2	10	13
spruce	T3	22	13	5	20	17
white spruce	T3	67	6	1	15	20
Labrador-tea	SS	100	17	5	35	41
black crowberry	SS	78	3	1	4	14
blueberry willow	SS	67	3	1	10	15
bog blueberry	SS	100	14	5	25	37
feltleaf willow	SS	11	2	2	2	5
grayleaf willow	SS	33	4	1	7	11
lowbush cranberry	SS	100	4	1	7	19
net vein willow	SS	22	1	1	2	5
prickly rose	SS	11	1	1	1	2
red bearberry	SS	56	5	3	8	16
russet buffalo-berry	SS	22	1	1	2	5
shrub birch	SS	100	26	3	65	51
shrubby cinquefoil	SS	44	2	1	3	8
small cranberry	SS	56	1	1	1	6
thinleaf alder	SS	11	3	3	3	6
willow	SS	78	6	2	10	21
Canadian bunchberry	F	11	1	1	1	2
Labrador lousewort	F	33	1	1	1	4
alpine sweet-vetch	F	11	2	2	2	5
arctic aster	F	11	1	1	1	2
arctic sweet coltsfoot	F	100	4	1	8	20
cloudberry	F	44	1	1	2	7
common fireweed	F	44	1	1	1	5
horsetail	F	33	22	1	65	27
marsh grass-of-parnassus	F	11	1	1	1	2
ragwort	F	22	1	1	1	3
single delight	F	22	1	1	1	3
tall Jacob`s-ladder	F	11	1	1	1	2
valerian	F	11	1	1	1	2
violet	F	11	1	1	1	2
closed-sheath cottongrass	G	22	2	2	2	7
cottongrass	G	11	1	1	1	2
polar grass	G	89	5	2	15	22
rough fescue	G	22	3	2	3	7
sedge	G	22	2	1	3	6
spruce-muskeg sedge	G	78	33	4	75	51
water sedge	G	11	4	4	4	7
Moss layer	M	100	39	25	55	63
Lichen layer	L	100	14	1	45	38
Bare soil	B	100	3	1	15	16
Litter and mulch	B	100	9	1	30	30
Rock fragments	B	11	1	1	1	2
Surface water	B	78	1	1	2	8
Woody litter (>1" dia.)	B	56	2	1	5	12

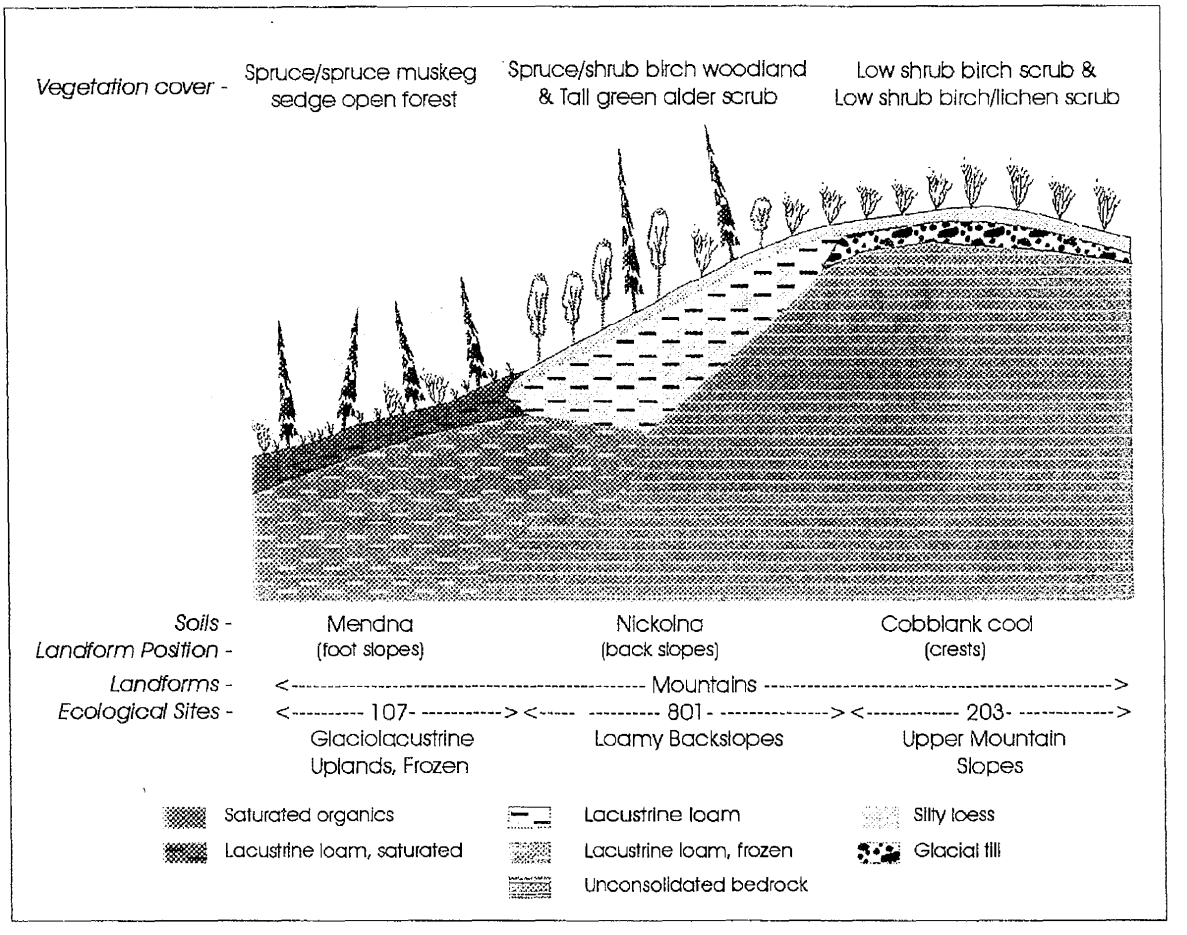
Salix spp. includes: SAMO2 SAPL2



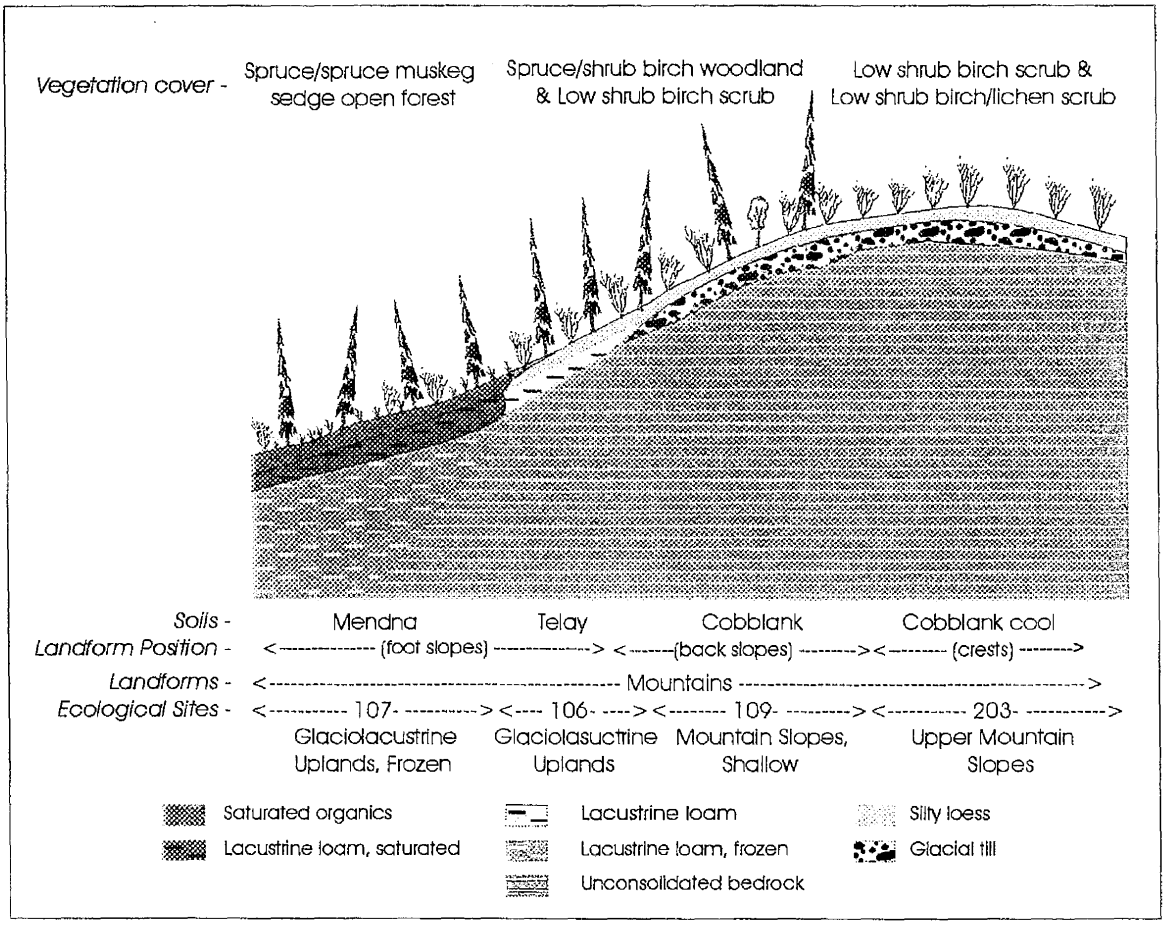
Representative cross section in the glaciolacustrine uplands above the lower Main Stem.



Representative cross section in the glaciolacustrine uplands above the Main Stem.



Representative cross section of mountains slopes above the upper Main Stem.



Representative cross section of mountains slopes above the upper Main Stem.



Representative stand of Spruce/spruce muskeg sedge open forest, the correlated potential natural plant community on ecological site 172Xy107AK Glaciolacustrine Uplands, Frozen.

Gravelly and Sandy Terraces
172Xy108AK

Standard Site Description

Site Number: 172Xy108AK
Site Name: Gravelly and Sandy Terraces
Plant Name: PICEA/lichen
Date: 4/98
Initials (Author's/Agency): DRK, MHC/USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

   (1) MLRA Name: Copper River Plateau
   (2) Local Area: Gulkana River, _____
   _____

   (3) Typical Location:

   Legal: SW 1/4; SW 1\4; SE 1\4: Sec. 31 T. 11N R. 02W Meridian Copper River
   Latitude: Deg.____ Min.____ Sec.____
   Longitude: Deg.____ Min.____ Sec.____
   UTM Coordinate: _____

   b. Physiography:

   (1) Landform:
   (a) Broad: glaciofluvial Uplands
   (b) Specific: strandlines, alluvial fans
   (c) Microrelief: plane, convex
   (2) Elevation/Aspect:
   Low 1900 / All High 2700 / All
   (3) Slope: Low: 0 % High 12 %

   c. Landscape Narrative:

   d. Associated Water Features:

   (1) Non-stream Characteristics:

   (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

   _____ _____ _____
   _____ _____ _____

   Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

   (b) Drawdown Characteristics (reserved)
   (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Containment Ratio of Floodplain width/bankfull width	
1.								A) Confined (1.0 - 1.5)
2.								B) Moderately Confined (1.5 - 2.5)
3.								C) Unconfined (2.5+)
4.								D) Not Determined
5.								

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 19 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.7	.7	.6	.5	.7	2.1	3.1	2.1	1.6	1.5	.7	1.0	
LOW													
TEMP HI	7	17	28	40	53	62	66	63	52	35	15	4	(°F)
MEAN	-2	4	13	27	41	49	54	50	40	25	5	-4	
LOW	-12	-10	-2	14	28	37	42	37	28	15	-5	-13	

i. Climatic Weather Station:

(1) Location: Sourdough AK
(2) Station Number: 508625

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Typic Cryochrepts	sandy, mixed
(2)	Typic Haploxeroids	coarse-loamy over sandy or sandy-skeletal, mixe
(3)	"	sandy-skeletal, mixed

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: outwash, _____

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 0 (inches) Maximum 3 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Spodic, Cambic Epipedon
(2) Thickness: Minimum 5 (inches) Maximum 9 (inches)

e. Surface Texture: SiL, _____, _____, _____, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 3 (inches) Maximum 11 (inches)

h. AWC for Effective Plant Root Zone: Low .14 High .20 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 4 (inches) Maximum 60 (inches)
(2) Average Thickness: _____ (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 4 (inches) Maximum 60 (inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	3	4.5	6.0
Layers:	3	18	5.1	6.5
All Other Layers:	18	60	5.6	6.5

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	F	D	D	M	M	M	F	F	F
4-10"					M					M		
10-20"						M	D	D			M	
20-40"									D			
40-60"	M	M	M	M			M	M	M			M

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 5 (Ft) Maximum 5 (Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: none
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	20 - 50	35 - 45
Shrubs	35 - 70	3 - 6
Grasses, Grass Like. & Forbs	1 - 15	.5 - 1
Cryptogams	60 - 90	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	3 - 25	_____ - _____
P	0 - 20	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 45 - 150 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIMA	black spruce	-	-	-	25-75	
PIGL	white spruce	35-50	-	-	25-75	
POTRS	quaking aspen	-	-	-	0-2	
		-	-	-	-	
		-	-	-	-	

Site Index References: Farr 1967

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
BEGL	shrub birch		5-65	-	-	
LEDUM	Labrador tea		3-50	-	-	
VAUL	bog blueberry		3-45	-	-	
SAGL	grayleaf willow		0-6	-	-	
VAVI	lowbush cranberry		2-20	-	-	

Other ..... - NTE ea

EMNI black crowberry 1-25

SAPL2 diamond leaf willow 0-20

PICEA spruce 0-20

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
FEAL	rough fescue		0-15	___-___	___-___	
CACA4	bluejoint reedgrass		0-2	___-___	___-___	
CALU2	spruce-muskeg sedge		0-3	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
GELI2	northern commandra		0-10	___-___	___-___	
LYCOP2	clubmoss		0-6	___-___	___-___	
EPAN2	common fireweed		0-1	___-___	___-___	
COCA13	bunchberry dogwood		0-2	___-___	___-___	
EQUIS	horsetail		0-4	___-___	___-___	

Other ..... ___-___NTE___ea

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	35-65	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____	_____
_____	_____
_____	_____
_____	_____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total bryophytes	5-40	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		14
Late (Good)		4
Mid (Fair)		
Early (Poor)		5

e. Vegetation Narrative:

5. Wildlife

a. Species List:

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	AF1	Pippod
	"	Clarena
	AT1	Chistna
	"	Pippod

172Xy108AK - Gravelly and Sandy Terraces
Spruce/lichen woodland

Part A: Description of Site

1.c. Landscape Narrative: This site consists of isolated strandline deposits on glaciolacustrine uplands and alluvial fans. The landscape is formed in deep, sandy and gravelly materials, often overlain by a thin mantle of eolian silts. Slopes generally range from 0 to about 12 percent. Occasional short slopes up to 25 percent occur also. Elevation is from 1900 to 2700 feet (579 to 823 m).

In the Gulkana River area, this site occurs as scattered, relatively small areas of strandline deposits throughout most of the uplands with the exception of the South Branch. It is found on high terraces immediately above the River corridor and on nearby lacustrine terraces. The site also occurs on fan terraces along the Middle Fork. This site probably occurs on strandline deposits, eskers, and alluvial fans throughout the central Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The moderately well developed soils on this site have a thin mantle of silty eolian material 1 to 8 inches (2.5 to 20 cm) thick over very gravelly or sandy glaciofluvial materials. Most have a thin organic mat up to about 3 inches (8 cm) thick. Permeability is rapid and the soils are somewhat excessively drained. Depth to seasonal high water table is greater than 6 feet (1.8 m). Because of the coarse textures and low water holding capacity, these soils are relatively dry throughout the growing season.

4.e. Vegetation Narrative: Spruce/lichen woodland is the correlated Potential Natural Plant Community on this site. This PNC probably is best described as a fire climax (depends on being burned at rather regular intervals). Microsites than have remained unburned for an extended period and cooler and moister microsites, such as northerly aspects and concave slopes, often support Spruce/shrub birch woodland.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): This site appears to be near the dry extreme of wooded sites in the Copper River basin and, therefore, is probably more susceptible to wild fire than most other woodland sites. The moderately open to closed cover of *Betula glandulosa* in the understory would readily carry a fire throughout the stand. The prevalence of *Picea mariana* as the major tree species in many stands may be a result of repeated fires, which tend to favor *Picea mariana* regeneration at the expense of *Picea glauca*. Because of the dry soil conditions, this site also appears to be less likely to develop the thick moss-organic layer on the soil surface than more moist sites.

In most instances, fire would kill the spruce trees and destroy much if not all of the woodland overstory. Early seral vegetation likely would be scrub dominated by *Betula glandulosa*, ericaceous shrubs, and tall *Salix* spp., primarily *Salix glauca* and *Salix bebbiana*. Tree regeneration likely would begin almost immediately following the burn. The semi-serotinous cones of *Picea mariana* would provide an immediate seed source in areas with *Picea mariana* in the original stand. *Populus tremuloides*, with light, wind disseminated seed, would also find a suitable seed bed. In may places, this site currently support Quaking aspen-white spruce forest. Regeneration of *Picea glauca*, which produces adequate seed crops infrequently, would be largely dependent on the timing of seed production and the availability of a suitable seed bed.

The ground layer initially would be dominated by sparse herbs and mosses adapted to bare mineral soils, such as *Polytrichum* spp. and *Ceratodon purpureus*. Lichens and patches of moss would begin to displace much of the herbaceous vegetation within a few years.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy106AK - Glaciolacustrine Uplands

172Xy107AK - Glaciolacustrine Uplands, Frozen

b. Riparian or Wetland:

8. List of Competing Sites (number and names):

172Xy106AK - Glaciolacustrine Uplands: adjacent lacustrine terraces and till plains; soils formed in fine textured glaciolacustrine materials; Spruce/shrub birch woodland vegetative potential with only minor lichen cover in the ground layer.

172Xy107AK - Glaciolacustrine Uplands, Frozen: adjacent lacustrine terraces and till plains; soils formed in fine textured glaciolacustrine materials; permafrost present within soil profile; Spruce/spruce muskeg sedge open forest potential with varying but generally low lichen cover in the ground layer.

172Xy108AK - Gravelly and Sandy Terraces
Spruce/lichen woodland

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy108AK - Gravelly and Sandy Terraces
Cover type: Quaking aspen-white spruce forest
Seral status: late
Number of stands: 4
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

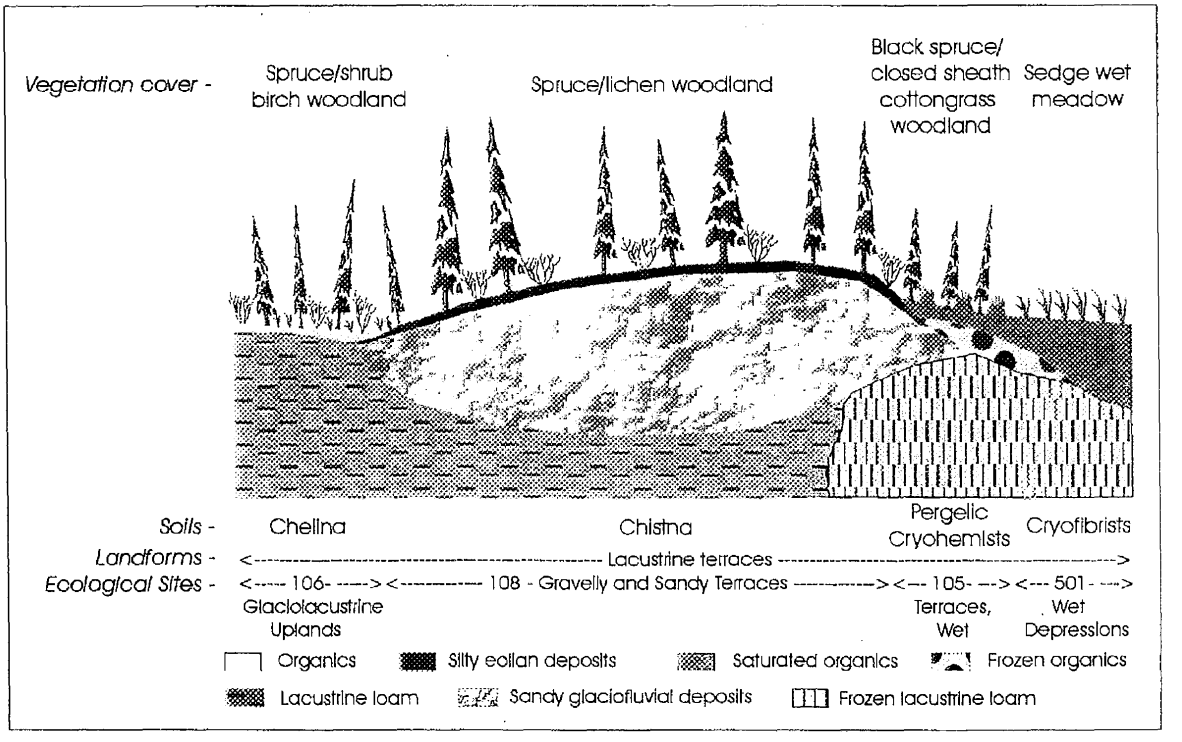
Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	25	1	1	1	5
quaking aspen	T1	100	31	15	50	56
white spruce	T1	100	26	20	35	51
spruce	T2	25	15	15	15	19
white spruce	T2	50	15	15	15	27
balsam poplar	T3	25	1	1	1	4
quaking aspen	T3	75	1	1	2	9
spruce	T3	25	5	5	5	11
white spruce	T3	50	3	1	5	12
Labrador-tea	SS	75	13	10	15	32
black crowberry	SS	100	8	3	15	28
blueberry willow	SS	50	5	1	10	16
bog blueberry	SS	100	7	1	15	25
gray willow	SS	50	5	1	10	16
grayleaf willow	SS	25	1	1	1	4
highbush cranberry	SS	25	1	1	1	5
kinnikinnick	SS	75	3	2	5	16
lowbush cranberry	SS	100	13	5	15	35
prickly rose	SS	75	2	1	3	11
red bearberry	SS	50	1	1	1	5
russet buffalo-berry	SS	75	2	1	5	12
shrub birch	SS	50	17	4	30	29
shrubby cinquefoil	SS	50	1	1	2	8
willow	SS	25	1	1	1	4
American twinflower	F	25	7	7	7	13
arctic aster	F	25	2	2	2	7
arctic lupine	F	25	1	1	1	4
clubmoss	F	25	1	1	1	5
common fireweed	F	100	1	1	1	7
horsetail	F	50	2	1	2	9
milk-vetch	F	50	1	1	1	5
northern commandra	F	100	6	2	15	23
wintergreen	F	50	1	1	1	5
bluejoint reedgrass	G	50	1	1	1	5
purple reedgrass	G	50	1	1	1	5
rough fescue	G	75	1	1	3	10
Moss layer	M	100	34	30	40	58
Lichen layer	L	100	18	1	45	42
Bare soil	B	75	1	1	1	6
Litter and mulch	B	100	55	40	60	74
Woody litter (>1" dia.)	B	100	10	2	20	31

Salix spp. includes: SALIX

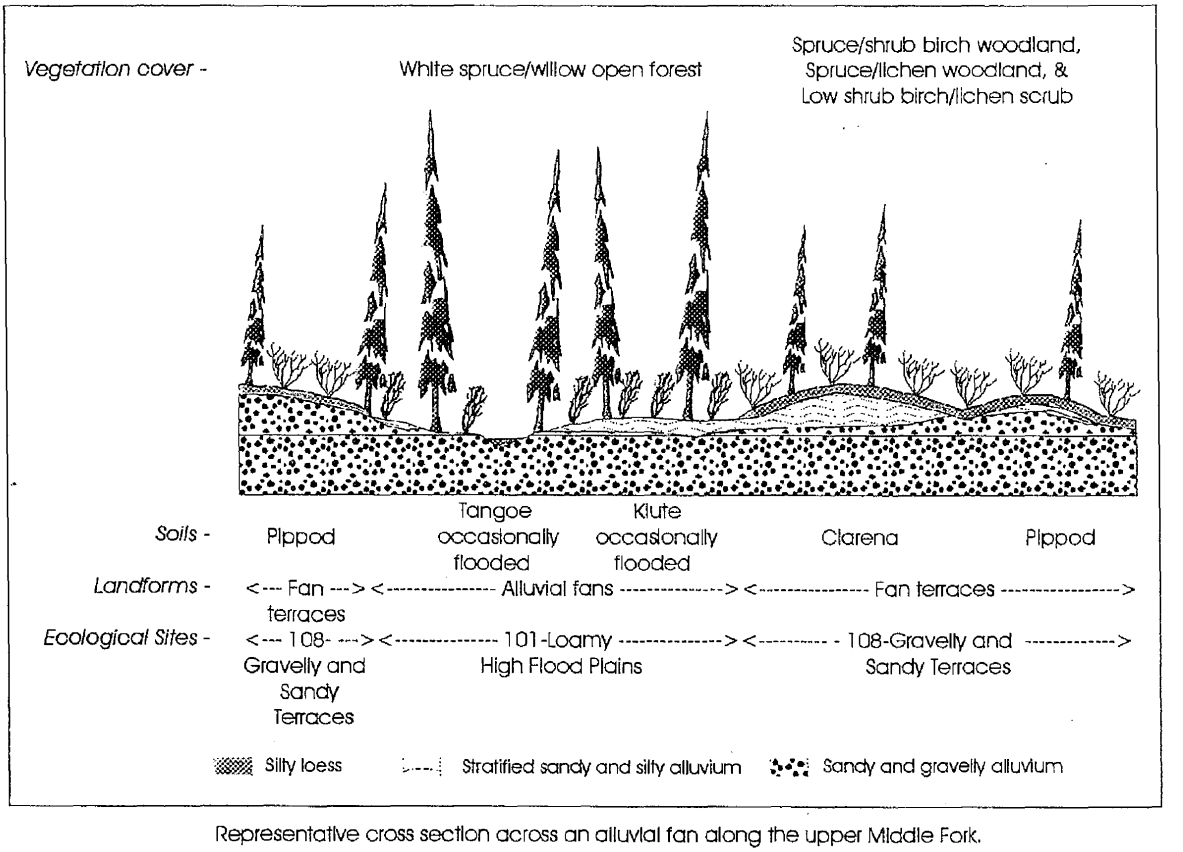
Ecological Site: 172Xy108AK - Gravelly and Sandy Terraces
Cover type: Low shrub birch/lichen scrub
Seral status: early
Number of stands: 5
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	20	1	1	1	3
white spruce	T1	40	6	5	7	15
spruce	T2	20	10	10	10	14
white spruce	T2	20	2	2	2	6
white spruce	T3	80	1	1	1	8
Alaska bog willow	SS	20	1	1	1	3
Labrador-tea	SS	40	2	1	3	8
black crowberry	SS	60	1	1	2	8
blueberry willow	SS	60	2	1	5	11
bog blueberry	SS	40	4	2	5	12
lowbush cranberry	SS	60	10	3	20	24
net vein willow	SS	20	2	2	2	6
oval-leaf blueberry	SS	20	1	1	1	3
prickly rose	SS	20	1	1	1	3
shrub birch	SS	100	75	70	85	87
shrubby cinquefoil	SS	40	1	1	1	5
willow	SS	80	2	1	5	13
Canadian bunchberry	F	60	1	1	1	5
Labrador lousewort	F	20	1	1	1	3
boreal sagebrush	F	60	1	1	2	8
clubmoss	F	20	1	1	1	3
common fireweed	F	40	1	1	1	4
gentian	F	40	1	1	1	4
horsetail	F	20	1	1	1	3
larkspur-leaf monkshood	F	40	1	1	1	5
northern blackberry	F	80	2	1	4	11
ragwort	F	100	1	1	1	8
tall Jacob`s-ladder	F	20	2	2	2	6
wormwood	F	20	1	1	1	3
bluejoint reedgrass	G	20	2	2	2	6
polar grass	G	20	1	1	1	3
rough bent	G	20	1	1	1	3
rough fescue	G	100	11	5	20	34
sedge	G	40	3	1	5	11
Moss layer	M	100	35	25	45	59
Lichen layer	L	100	44	5	65	66
Bare soil	B	40	3	1	5	10
Litter and mulch	B	100	9	5	15	30
Woody litter (>1" dia.)	B	20	1	1	1	3

Salix spp. includes: SALIX SAPL2



Representative cross section in the glaciolacustrine uplands above the West Fork.



Representative cross section across an alluvial fan along the upper Middle Fork.



Ecological site 172Xy108AK - Sandy and Gravelly Terraces on an alluvial fan along the upper Middle Fork. Vegetation is Spruce/lichen woodland. The flood plain on the fan in the background supports White spruce/willow open forest and is included in ecological site 172Xy101AK - Loamy High Flood Plains.

Mountain Slopes, Shallow
172Xy109AK

Standard Site Description

Site Number: 172Xy109AK
Site Name: Mountain Slopes, Shallow
Plant Name: PICEA/BEGL
Date: 4/98
Initials (Author's/Agency): DRK, MHC / USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

   (1) **MLRA Name:** Copper River Plateau
   (2) **Local Area:** Gulkana River, _____
   _____

   (3) **Typical Location:**

   Legal: SW 1/4; NE 1\4; SW 1\4; Sec. 08 T. 12N R. 02W **Meridian** Copper River
   Latitude: Deg.____ Min.____ Sec.____
   Longitude: Deg.____ Min.____ Sec.____
   UTM Coordinate: _____

   b. Physiography:

   (1) Landform:
   (a) Broad: Mountain Slopes
   (b) Specific: backslopes, shoulders, crest
   (c) Microrelief: plane, convex
   (2) Elevation/Aspect:
   Low 2500 / All _____ High 2900 / All _____
   (3) Slope: Low: 0 % High 35 %

   c. Landscape Narrative:

   d. **Associated Water Features:**

   (1) Non-stream Characteristics:

   (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

   _____ _____ _____
   _____ _____ _____

   Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

   (b) Drawdown Characteristics (reserved)
   (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed	Materials: Bank	Containment Ratio of floodplain width/bankfull width	
1.				A) Confined (1.0 - 1.5)
2.				B) Moderately Confined (1.5 - 2.5)
3.				C) Unconfined (2.5+)
4.				D) Not Determined
5.				

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
____	____	____	____	____	____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maximum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28 °F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson AK
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Lithic Cryochrepts	Loamy-skeletal, mixed
(2)		
(3)		

b. Geologic Formation:
(1) Formation(s): _____
(2) Parent material: glacial till & colluvium over bedrock

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 2 (inches) Maximum 5 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 6	Channers	Low 0	High 0
Stones	Low 0	High 6	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Cambic Epipedon
(2) Thickness: Minimum 4 (inches) Maximum 8 (inches)

e. Surface Texture: SiL

f. Soil Depth: (not to exceed 2 classes)
Minimum 10 (inches) Maximum 20 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 10 (inches) Maximum 20 (inches)

h. AWC for Effective Plant Root Zone: Low .12 High .20 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
	to			to	
	to			to	
	to			to	
	to			to	

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 3 (inches) Maximum 17 (inches)
(2) Average Thickness: 10 (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 3 (inches) Maximum 17 (inches)
(2) Average Thickness 10 (inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	10	4.5	6.0
Layers:	10	18	5.1	6.5
All Other Layers:	18	22		

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	M	M	M	M	M	M	F	F	F
4-10"	↓	↓	↓	F	↓	↓	↓	↓	↓	M	↓	↓
10-20"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	M	↓
20-40"	—	—	—	—	—	—	—	—	—	—	—	—
40-60"	—	—	—	—	—	—	—	—	—	—	—	—

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 5 (Ft) Maximum 5 (Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: None
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	10 - 20	15 - 30
Shrubs	50 - 90	3 - 6
Grasses, Grass Like, & Forbs	0 - 5	.5 - 2
Cryptogams	15 - 60	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	30 - 50	_____ - _____
P	0 - 15	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 15 - 40 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL	white spruce	--	--	10-20	--	
BEPA	paper birch	--	--	0-3	--	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	

Site Index References: _____

(2) Understory:

(a) Shrubs (and understory trees. if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIGL	white spruce		0-3	--	--	
BEGL	shrub birch		20-65	--	--	
LEDUM	Labrador tea		5-55	--	--	
VAUL	bog blueberry		15-45	--	--	
* SALIX	Willow		5-15	--	--	

Other ..... -- NTE ___ ea

VAVI	lowbush cranberry	1-10
EMNI	black crowberry	0-5

* includes SAAL, SAGL, SAMO2, SAPL2, SASC

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
ARLAZ	polar grass		0-1	--	--	
CACAA	bluejoint reedgrass		0-1	--	--	
FEAL	rough fescue		0-1	--	--	
			--	--	--	
			--	--	--	

Other ..... ___-___NTE___ea

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
COCA13	bunchberry dogwood		0-2	--	--	
MEPA	tall bluebells		0-1	--	--	
EPAN2	common fireweed		0-1	--	--	
EQUI5	horsetail		0-1	--	--	
			--	--	--	

Other ..... ___-___NTE___ea

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	1-30	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total bryophytes	15-35	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____	_____
_____	_____
_____	_____
_____	_____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	6
Late (Good)	_____	_____
Mid (Fair)	_____	_____
Early (Poor)	_____	_____

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commoniy Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	AL2	Cobblank
"	BR1	Cobblank

172Xy109AK - Mountain Slopes, Shallow
Spruce/shrub birch woodland

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on bedrock cored mountain slopes and summits below about 2900 feet (884 m) elevation. Most areas have been smeared with a thin mantle of loamy till and lacustrine deposits. Slopes range from about 8 to 35 percent.

In the Gulkana River area, this site is of minor occurrence in a few scattered locations above the Middle Fork and upper Main Stem. It is probably extensive at middle elevations throughout the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F; mean July temperature is 54 °F. Mean annual precipitation ranges from 18 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The moderately well developed soils on this site have a mantle of silty eolian material 1 to 4 inches (2 to 10 cm) thick over very gravelly and very cobbly loamy till and loamy lacustrine material. Bedrock is at depths of 10 to 20 inches in most places. The soils are well drained.

4.e. Vegetation Narrative: Spruce/shrub birch scrub is the correlated PNC on this site. At the elevation of this site, *Picea glauca* is the usually the only spruce found. Seral Low shrub birch scrub is present in many places.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Wildfire, which is common in the boreal forest zone of the Copper River basin, periodically impacts this site. Most stands have common to abundant charred snags and woody debris; scattered trees and clumps of trees are common also. Following wildfire, the vegetation on this site would be expected to go through a relatively short-lived herb stage codominated by herbs and shrub sprouts. This would be followed by a Low shrub birch scrub stage with occasional to common spruce regeneration. Most areas of this site in the Gulkana River area currently support Low shrub birch scrub. Woodland development likely is a long-term process at the elevation and on the soils of this site. Seed trees in many burned stands were rare and tree seedlings nearly impossible to find.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy106AK - Glaciolacustrine Uplands

172Xy203AK - Upper Mountain Slopes, Shallow

172Xy801AK - Loamy Backslopes

b. Riparian or Wetland:

8. List of Competing Sites (number and names):

172Xy106AK - Glaciolacustrine Uplands: lacustrine terraces and till plains generally below 2700 feet (823 m) elevation; deep soils; Spruce/shrub birch woodland vegetative potential, however, in many areas seral Low shrub birch scrub is found.

172Xy203AK - Upper Mountain Slopes, Shallow: higher elevation mountain slopes; similar soils; Low shrub birch scrub vegetative potential.

172Xy109AK - Mountain Slopes, Shallow
Spruce/shrub birch woodland

Part B: Interpretations for Use and Management of the Site

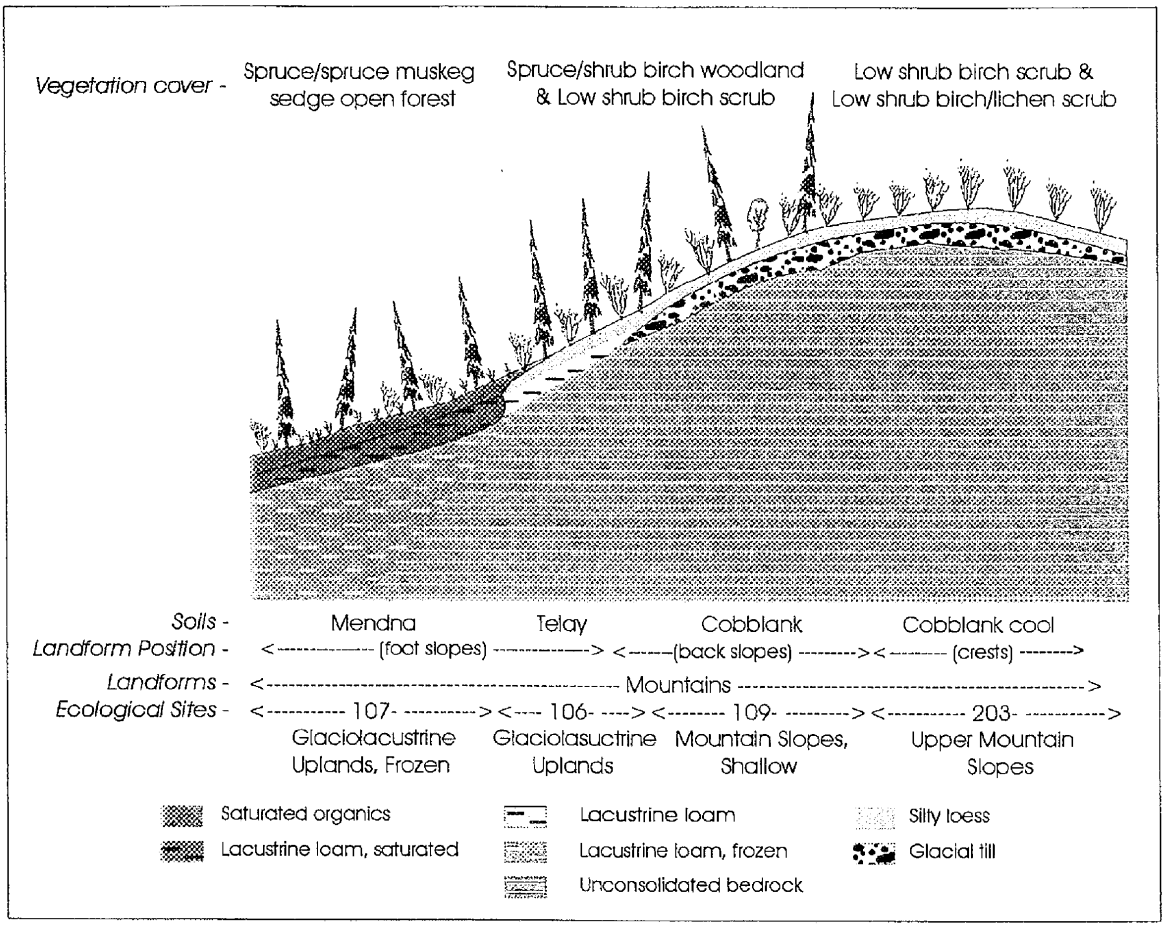
1.a. Plant Community Characteristics: see attached summary table and diagram for stand characteristics for the PNC.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy109AK - Mountain Slopes, Shallow
Cover type: Spruce/shrub birch woodland
Seral status: PNC
Number of stands: 6
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	17	10	10	10	13
paper birch	T2	17	3	3	3	7
white spruce	T2	83	11	10	15	30
quaking aspen	T3	17	1	1	1	3
white spruce	T3	17	3	3	3	7
Beauverd spiraea	SS	17	1	1	1	3
Labrador-tea	SS	100	24	5	55	49
Scouler willow	SS	33	3	1	5	10
black crowberry	SS	83	3	1	5	16
bog blueberry	SS	100	33	15	45	58
currant	SS	17	1	1	1	3
feltleaf willow	SS	33	5	5	5	13
grayleaf willow	SS	33	10	5	15	18
green alder	SS	17	1	1	1	3
lowbush cranberry	SS	100	6	1	10	23
prickly rose	SS	50	1	1	1	5
red bearberry	SS	17	3	3	3	7
shrub birch	SS	100	43	20	65	65
shrubby cinquefoil	SS	17	10	10	10	13
willow	SS	100	8	1	15	28
American twinflower	F	17	1	1	1	3
Canadian bunchberry	F	67	1	1	2	10
Unknown forb	F	33	1	1	1	4
clubmoss	F	17	1	1	1	3
common fireweed	F	33	1	1	1	4
horsetail	F	33	1	1	1	4
ragwort	F	17	1	1	1	3
tall Jacob`s-ladder	F	17	1	1	1	3
tall bluebells	F	50	1	1	1	5
bluejoint reedgrass	G	17	1	1	1	3
polar grass	G	67	1	1	1	6
rough fescue	G	17	1	1	1	4
Moss layer	M	100	26	15	35	51
Lichen layer	L	100	6	1	30	24
Bare soil	B	33	1	1	1	4
Litter and mulch	B	100	14	1	50	37
Rock fragments	B	33	1	1	2	6
Surface water	B	17	1	1	1	3
Woody litter (>1" dia.)	B	17	15	15	15	16

Salix spp. includes: SAMO2 SAPL2



Representative cross section of mountains slopes above the upper Main Stem.

Glaciolacustrine Uplands, Ruptic
172Xy110AK

Standard Site Description

Site Number: 172XY110AK
Site Name: Glaciolacustrine Uplands, Ruptic
Plant Name: PICEA/BEGL
Date: 4/98
Initials (Author's/Agency): PRK, MHC / USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

   (1) MLRA Name: Copper River Plateau
   (2) Local Area: Gulkana River, _____
   (3) Typical Location:

   Legal: SE 1/4; SE 1\4; SE 1\4: Sec. 11 T. 10N R. 07W Meridian Copper River
   Latitude: Deg.____ Min.____ Sec.____
   Longitude: Deg.____ Min.____ Sec.____
   UTM Coordinate: _____

   b. Physiography:

   (1) Landform:
   (a) Broad: Glaciolacustrine Uplands
   (b) Specific: lacustrine terraces, _____
   (c) Microrelief: frost boils, _____
   (2) Elevation/Aspect:
   Low 2300 / All _____ High 2500 / All _____
   (3) Slope: Low: 0 % High 8 %

   c. Landscape Narrative:

   d. Associated Water Features:

   (1) Non-stream Characteristics:

   (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

   _____ _____ _____
   _____ _____ _____

   Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

   (b) Drawdown Characteristics (reserved)
   (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of floodplain width:bankfull width	
1.								A) Confined (1.0 - 1.5)
2.								B) Moderately Confined (1.5 - 2.5)
3.								C) Unconfined (2.5+)
4.								D) Not Determined
5.								

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maximum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic _____
b. Soil Temperature Regime: Pergelic, Cryic
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 19 (inches)
g. Frost-Free Period: 60 to 80 (days)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.7	.7	.6	.5	.7	2.1	3.1	2.1	1.6	1.5	.7	1.0	
LOW													
TEMP HI	7	17	28	40	53	62	66	63	52	35	15	4	(°F)
MEAN	-2	4	13	27	41	49	54	50	40	25	5	-4	
LOW	-12	70	-2	14	28	37	42	37	28	15	-5	-13	

i. Climatic Weather Station:

(1) Location: Sourdough AK
(2) Station Number: 508625

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Pergelic Ruptic-Histic	clayey, mixed, nonacid
(2)	Cryaquepts	
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: lacustrine deposits

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 0 (inches) Maximum 14 (inches)
(b) Type _____

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 5	Boulders	Low 0	High 0
Cobbles	Low 0	High 5	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Histic Epipedon (discontinuous)
(2) Thickness: Minimum 0 (inches) Maximum 14 (inches)

e. Surface Texture: SICL, PEAT, _____, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 10 (inches) Maximum 40 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 3 (inches) Maximum 13 (inches)

h. AWC for Effective Plant Root Zone: Low .13 High .35 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____	to _____	_____	_____	to _____	_____
_____	to _____	_____	_____	to _____	_____
_____	to _____	_____	_____	to _____	_____
_____	to _____	_____	_____	to _____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum _____ (inches) Maximum _____ (inches)
(2) Average Thickness: _____ (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum _____(inches) Maximum _____(inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (Ph) Low	Amount (Ph) High	
Surface Layers:	0	9	5.6	6.5	(organics)
Layers:	9	21	6.1	7.8	
All Other Layers:	21	60	____	____	(frozen)

m. Salinity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (mmhos/cm) Low	Amount (mmhos/cm) High
Surface Layers:	_____	_____	____	____
Layers:	_____	_____	____	____
All Other Layers:	_____	_____	____	____

n. Sodicity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (SAR) Low	Amount (SAR) High
Surface Layers:	_____	_____	____	____
Layers:	_____	_____	____	____
All Other Layers:	_____	_____	____	____

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	W	W	M	M	M	M	F	F	F
4-10"	↓	↓	↓	F	F	W	↓	↓	↓	M	↓	↓
10-20"	↓	↓	↓	↓	↓	↓	W	W	W	W	W	↓
20-40"	↓	↓	↓	↓	↓	F	F	F	F	F	F	↓
40-60"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 0 (Ft) Maximum 2 (Ft)
(2) Kind: perched
(3) Month(s): Apr to Oct

q. Flooding:
(1) Frequency: None
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ___ Maximum ___(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	10 - 20	15 - 30
Shrubs	35 - 65	2 - 4
Grasses, Grass Like, & Forbs	15 - 30	1 - 3
Cryptogams	45 - 60	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N,R	5 - 30	_____ - _____
P	1 - 10	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 35 - 120 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PICEA	spruce	--	--	10-20	100-100	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	

Site Index References: _____

(2) Understory:

(a) Shrubs (and understory trees. if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PICEA	spruce		0-7	--	--	
BEGL	shrub birch		15-45	--	--	
LEDUM	Labrador tea		25-35	--	--	
VAUL	bog blueberry		15-20	--	--	
* SALIX	willow		5-10	--	--	

Other ..... -- NTE ___ ea

VAVi lowbush cranberry 2-7

EMNi black crowberry 0-5

ARRU red bearberry 0-4

SHCA russet buffalo-berry 0-5

* includes SAGL, SAPL2

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
ARLA2	polar grass		1 - 10	___-___	___-___	
ERBRG	closed sheath	cottongrass	0 - 10	___-___	___-___	
CALU2	spruce muskeg	sedge	0 - 5	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
EQUIS	horsetail		0 - 15	___-___	___-___	
PEFR5	arctic sweet coltsfoot		1 - 6	___-___	___-___	
EPANZ	common fireweed		0 - 2	___-___	___-___	
SENEC	ragwort		0 - 2	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	15 - 35	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total bryophytes	30 - 60	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		5
Late (Good)		
Mid (Fair)		
Early (Poor)		8

e. Vegetation Narrative:

5. Wildlife

a. Species List:

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	LC1	Swillma thin surface
		Swillma

172Xy110AK - Glaciolacustrine Uplands, Ruptic
Spruce/shrub birch woodland

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on glaciolacustrine terraces formed in clayey lacustrine deposits. This site is characterized by surface microtopography consisting of a complex sparsely vegetated ice-cored frost boils and intervening swales and troughs. In most places the frost boils are about 24 inches (61 cm) high and 9 feet (3 m) across. Bare soil material is common on the mounds while the intermound troughs between boils have moderately thick to thick organic mats. The landscape is underlain by permafrost, including ice-rich soil material, ice lenses, vein ice, and probably occasional ice wedges. Slopes generally range from 0 to 8 percent. Elevation is 2300 to 2500 feet (701 to 762 m).

Within the Gulkana River area, this site is of limited extent and found only on lacustrine terraces above the upper South Branch. The occurrence of this site elsewhere in the Copper River basin is not known.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: Soils on this site are formed in clayey lacustrine deposits. On frost boils, the soil is sparsely vegetated; the organic mat ranges from 0 to 4 inches (0 to 10 cm), and bare mineral soil is exposed across much of the surface. Soils on frost boils are moderately deep to permafrost and somewhat poorly drained. In intermound swales and troughs, the soils have an organic mat 8 to 14 inches (20 to 36 cm) thick. Permafrost is shallow to moderately deep and the soils are very poorly drained. Soil horizons are mixed by cryoturbation; buried, distorted, and fractured horizons are present in most places. Redoximorphic features indicative of wetness are evident in troughs but less evident in boils.

4.e. Vegetation Narrative: Spruce/shrub birch woodland is the correlated PNC on this site, although dramatic differences in understory composition is evident on the frost boils versus the intermound swales and troughs. On frost boils, the understory in mature stands is characterized by sparse shrubs, herbs, and patches of moss with extensive bare soil. In the swales and troughs, the understory generally has common to abundant low shrubs and a luxuriant moss layer. In many places, the vegetation is similar to the understory of Black spruce/closed sheath cottongrass woodland.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Wild fire on this site would be expected to potentially impact both the structure and composition of the vegetation and the characteristics of the site. Moderate to severe burns in which the moss-organic layer on the soil surface is blackened and partially to completely destroyed would favor a rapid and long-term warming of the soil profile. Over a relative short period of time, the

permafrost level would drop and soil drainage should improve. Melting vein ice and ice wedges could lead to thermokarsting, liquifaction, and debris flows, especially on steeper slopes. Post-fire vegetative succession would probably begin with a herb-shrub sprout stage, followed by a Low shrub birch scrub stage. The rate and degree of tree regeneration would depend in part on the availability of seed sources following burning.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy106AK - Glaciolacustrine Uplands

172Xy107AK - Glaciolacustrine Uplands, Frozen

b. Riparian or Wetland:

172Xy202AK - Shallow Drainages

8. List of Competing Sites (number and names):

172Xy105AK - Terraces, Wet: similar lacustrine terrace landscape position; frost boil microrelief absent, may have irregularly hummocky microrelief; soils with continuous, thick organic mat and uniform shallow permafrost, very poor drainage, and occasional ponding; Black spruce/closed sheath cottongrass woodland vegetative potential with relatively uniform understory aspect and lacking the frost boil-trough variability.

172Xy106AK - Glaciolacustrine Uplands: similar lacustrine terrace landscape position; frost boil microrelief absent; well drained soils without permafrost; Spruce/shrub birch woodland vegetation potential with relatively uniform understory aspect and lacking frost boil-trough variability.

172Xy107AK - Glaciolacustrine Uplands, Frozen: similar lacustrine terrace landscape position; frost boil microrelief absent, may have irregularly hummocky microrelief; soils with continuous, thick organic mat and uniform shallow permafrost and very poor drainage; Spruce/spruce muskeg sedge open forest vegetative potential with nearly continuous, moderately open to closed low shrub layer and continuous, luxuriant graminoid and moss layers below.

172Xy110AK - Glaciolacustrine Uplands, Ruptic
Spruce/shrub birch woodland

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagram for seral stages and stand characteristics.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy110AK - Glaciolacustrine Uplands, Ruptic
Cover type: Spruce/shrub birch woodland
Seral status: PNC
Number of stands: 5
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
spruce	T2	20	20	20	20	20
white spruce	T2	80	15	10	20	35
spruce	T3	20	7	7	7	12
white spruce	T3	60	5	1	10	18
Labrador-tea	SS	100	29	25	35	54
black crowberry	SS	80	5	3	5	19
blueberry willow	SS	80	6	1	10	21
bog blueberry	SS	100	19	15	20	44
grayleaf willow	SS	80	5	1	10	21
lowbush cranberry	SS	100	5	2	7	22
prickly rose	SS	40	1	1	2	7
red bearberry	SS	80	2	1	4	13
russet buffalo-berry	SS	80	3	1	5	15
shrub birch	SS	100	29	15	45	54
shrubby cinquefoil	SS	20	1	1	1	3
small cranberry	SS	40	1	1	1	4
willow	SS	80	5	4	5	19
Labrador lousewort	F	20	1	1	1	3
arctic dock	F	20	1	1	1	3
arctic sweet coltsfoot	F	100	4	1	6	19
cloudberry	F	20	1	1	1	3
common fireweed	F	80	1	1	2	8
horsetail	F	60	10	4	15	24
ragwort	F	40	1	1	2	7
wintergreen	F	20	1	1	1	3
bluejoint reedgrass	G	20	1	1	1	3
closed-sheath cottongrass	G	80	6	1	10	23
polar grass	G	100	4	1	10	20
rough fescue	G	20	5	5	5	10
sedge	G	20	1	1	1	4
spruce-muskeg sedge	G	60	2	1	3	10
Moss layer	M	100	41	30	60	64
Lichen layer	L	100	22	15	35	47
Bare soil	B	100	8	2	15	28
Litter and mulch	B	100	21	5	30	46
Surface water	B	40	4	2	5	12
Woody litter (>1" dia.)	B	100	3	1	10	17

Salix spp. includes: SALIX SAPL2

Ecological Site: 172Xy110AK - Glaciolacustrine Uplands, Ruptic
Cover type: Black spruce/closed sheath cottongrass woodland
Seral status: PNC (moist_microsites)
Number of stands: 5
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

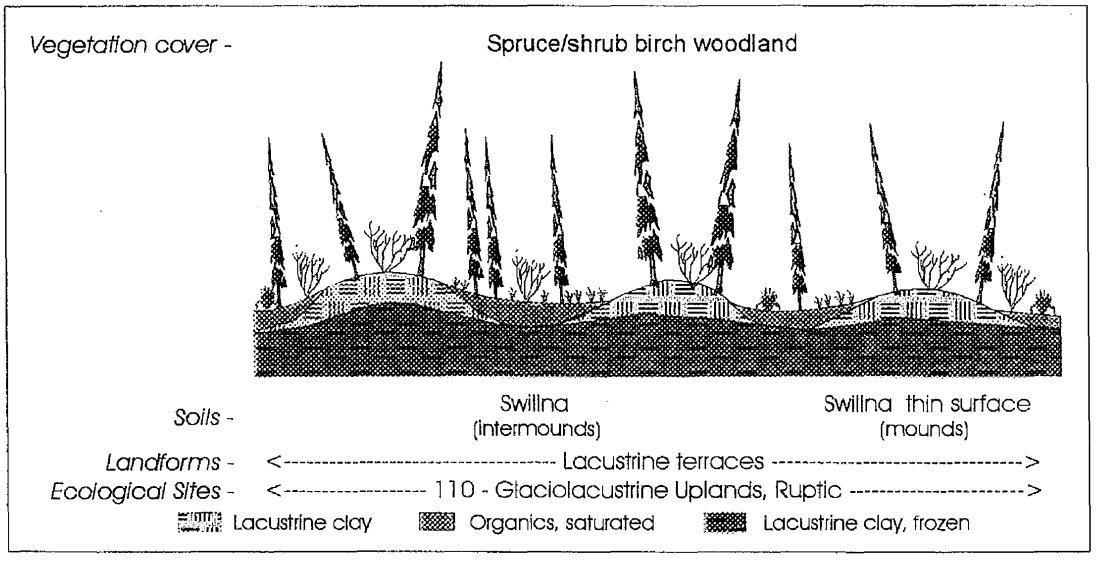
Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	60	12	10	15	26
spruce	T2	40	23	20	25	30
black spruce	T3	60	8	5	10	22
spruce	T3	20	10	10	10	14
Labrador-tea	SS	100	15	10	20	39
black crowberry	SS	80	2	1	3	13
blueberry willow	SS	80	5	3	7	20
bog blueberry	SS	100	10	7	15	32
bog rosemary	SS	20	1	1	1	3
leatherleaf	SS	20	1	1	1	3
little tree willow	SS	80	2	1	4	14
lowbush cranberry	SS	100	5	4	8	23
red bearberry	SS	60	1	1	2	8
russet buffalo-berry	SS	20	2	2	2	6
shrub birch	SS	100	17	10	25	41
shrubby cinquefoil	SS	20	1	1	1	4
small cranberry	SS	60	1	1	1	5
willow	SS	100	7	5	10	26
Labrador lousewort	F	20	1	1	1	3
arctic dock	F	20	1	1	1	3
arctic sweet coltsfoot	F	100	9	1	35	30
cloudberry	F	60	2	1	3	10
common fireweed	F	60	1	1	1	5
dwarf scouring-rush	F	20	1	1	1	3
ragwort	F	20	1	1	1	3
closed-sheath cottongrass	G	100	42	15	60	65
polar grass	G	100	4	1	5	19
spruce-muskeg sedge	G	60	13	4	25	28
Moss layer	M	100	42	30	60	65
Lichen layer	L	100	19	15	25	44
Bare soil	B	100	3	1	7	16
Litter and mulch	B	100	29	20	40	54
Surface water	B	80	1	1	2	10
Woody litter (>1" dia.)	B	100	1	1	3	11

Salix spp. includes: SAPL2

Ecological Site: 172Xy110AK - Glaciolacustrine Uplands, Ruptic
Cover type: Low shrub birch scrub
Seral status: early-mid
Number of stands: 8
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	25	4	3	5	10
white spruce	T2	75	3	1	5	14
spruce	T3	13	10	10	10	11
white spruce	T3	88	14	7	25	35
Labrador-tea	SS	100	14	4	35	37
black crowberry	SS	75	3	1	8	15
blueberry willow	SS	50	5	2	10	16
bog blueberry	SS	100	12	5	25	35
grayleaf willow	SS	38	9	6	15	19
lowbush cranberry	SS	100	4	2	10	20
net vein willow	SS	38	1	1	2	7
prickly rose	SS	50	1	1	1	6
red bearberry	SS	25	3	1	6	9
russet buffalo-berry	SS	38	9	4	20	19
shrub birch	SS	100	31	10	65	56
shrubby cinquefoil	SS	50	1	1	2	8
willow	SS	88	5	3	10	21
Labrador lousewort	F	13	1	1	1	3
alpine sweet-vetch	F	13	1	1	1	3
arctic aster	F	50	1	1	1	6
arctic dock	F	25	1	1	1	4
arctic sweet coltsfoot	F	100	2	1	7	14
cloudberry	F	50	1	1	1	6
common fireweed	F	38	1	1	2	7
horsetail	F	13	1	1	1	4
Unknown grass	G	13	3	3	3	6
closed-sheath cottongrass	G	13	4	4	4	7
polar grass	G	88	3	1	5	16
rough bent	G	13	1	1	1	3
sedge	G	13	1	1	1	4
spruce-muskeg sedge	G	88	41	7	65	60
Moss layer	M	100	31	15	40	55
Lichen layer	L	100	20	2	40	44
Bare soil	B	88	3	1	5	17
Litter and mulch	B	100	10	3	30	31
Surface water	B	13	1	1	1	3
Woody litter (>1" dia.)	B	63	1	1	4	9

Salix spp. includes: SABA3 SAPL2



Representative cross section in the glaciolacustrine uplands above the South Branch..



Potential natural vegetation on ecological site 172Xy110AK - Glaciolacustrine Uplands, Ruptic. Whitish areas in the understory are frost-heaved mounds characterized by bare soil, pioneering lichens, and sparse herbs and dwarf shrubs. Swales and depressions between the mounds are characterized by shrub birch, low and dwarf ericaceous shrubs and other plant species common in spruce woodlands throughout the Gulkana River area.

Peat Mounds
172Xy111AK

Standard Site Description

Site Number: 172Xy111AK
Site Name: PEAT MOUNDS
Plant Name: PICEA/BEGL
Date: 4/28
Initials (Author's/Agency): DRK, MHC/USDA NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____

(3) Typical Location:

Legal: NW 1/4; NE 1\4; NW 1\4; Sec. 07 T. 12N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: Glaciolacustrine terraces, stream terraces
(b) Specific: Peat mounds, _____
(c) Microreliief: convex, _____
(2) Elevation/Aspect:
Low 1900 / All High 2500 / All
(3) Slope: Low: 0 % High 100 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	____._____	____._____	____._____	____._____	____._____	____._____
2.	_____	____._____	____._____	____._____	____._____	____._____	____._____
3.	_____	____._____	____._____	____._____	____._____	____._____	____._____
4.	_____	____._____	____._____	____._____	____._____	____._____	____._____
5.	_____	____._____	____._____	____._____	____._____	____._____	____._____

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width
1.	___	___	___	___	___	___	___ A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___ B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___ C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___ D) Not Determined
5.	___	___	___	___	___	___	

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____._ to _____._

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____,
_____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic, _____
b. Soil Temperature Regime: pergelic, _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28 °F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.8	3.2	2.3	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1.1	
LOW	-8	-1	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson, Alaska
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Pergelic Cryohemists	euic
(2)		
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: organic matter

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 21 (inches) Maximum 60 (inches)
(b) Type E

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Histic Epipedon
(2) Thickness: Minimum 21 (inches) Maximum 60 (inches)

e. Surface Texture: Peat, _____, _____, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 24 (inches) Maximum 32 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 11 (inches) Maximum 20 (inches)

h. AWC for Effective Plant Root Zone: Low .30 High .35 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum _____ (inches) Maximum _____ (inches)
(2) Average Thickness: _____(inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum _____(inches) Maximum _____(inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (Ph) Low	Amount (Ph) High
Surface Layers:	0	27	4.5	7.3
Layers:				
All Other Layers:				

m. Salinity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (mmhos/cm) Low	Amount (mmhos/cm) High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (SAR) Low	Amount (SAR) High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	F	M	D	D	M	M	F	F	F
4-10"	↓	↓	↓	↓	F	M	M	↓	↓	M	↓	↓
10-20"	↓	↓	↓	↓	↓	F	↓	↓	↓	↓	M	↓
20-40"	↓	↓	↓	↓	↓	↓	F	F	F	F	F	↓
40-60"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum _____(Ft) Maximum _____(Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: None
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	5 - 25	5 - 25
Shrubs	40 - 80	0.5 - 4
Grasses, Grass Like. & Forbs	2 - 16	0.3 - 1.5
Cryptogams	70 - 90	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	5 - 40	_____ - _____
P	0 - 1	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PICEA	spruce	--	--	5 - 25	100 - 100	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	
		--	--	--	--	

Site Index References: _____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
LEDUM	Labrador-tea		20 - 55	--	--	
BEGL	Shrub birch		10 - 40	--	--	
VAUL	bog blueberry		15 - 30	--	--	
VAVI	lowbush cranberry		0 - 10	--	--	
EMNI	black crowberry		0 - 15	--	--	

Other ..... - NTE ea

SAPL2 diamondleaf willow 0 - 10

(b) Grasses and Grass Like ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CALU2	spruce muskeg sedge		1-15	___-___	___-___	
ARLA2	polar grass		0-10	___-___	___-___	
ERBR6	closed-sheath cottongrass		0-25	___-___	___-___	
CACA4	bluejoint reedgrass		0-3	___-___	___-___	
CAAQ	water sedge		0-10	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
RUCH	cloudberry		1-20	___-___	___-___	
PEFR5	arctic sweet coltsfoot		1-10	___-___	___-___	
PELA	Labrador lousewort		0-1	___-___	___-___	
____	_____	____	___-___	___-___	___-___	
____	_____	____	___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	2 - 25	____-____	____-____
_____	_____	_____-_____	____-____	_____-_____
_____	_____	_____-_____	____-____	_____-_____
_____	_____	_____-_____	____-____	_____-_____
_____	_____	_____-_____	____-____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total bryophytes	45 - 70	____-____	____-____
_____	_____	_____-_____	____-____	_____-_____
_____	_____	_____-_____	____-____	_____-_____
_____	_____	_____-_____	____-____	_____-_____
_____	_____	_____-_____	____-____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		1
Late (Good)		5
Mid (Fair)		
Early (Poor)		

e. Vegetation Narrative:

5. Wildlife

a. Species List:

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	LL41	Pergelic Cryohemists, Dry
"	STR	"

172Xy111AK - Peat Mounds
Spruce/shrub birch woodland

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on frozen peat mounds (also called palsa) adjacent to ponds, lakes, and wet meadows on glaciolacustrine uplands and occasionally on stream terraces. The rounded to flat-topped mounds and ridges are elevated 2 to 30 feet (0.6 to 9.1 m) above the adjacent landscape. Frozen peat, often with thin lenses or large ice masses, is usually encountered within 40 inches (102 cm) of the surface and most mounds have a core of massive ice at varying depths. Slopes range from 0 to 100 percent. Elevation is 1900 to 2500 feet (579 to 762 m).

In the Gulkana River area, this site is found in scattered locations usually of small extent on lacustrine terraces above the North Branch, West Fork and Main Stem. It is also found occasionally on stream terraces near the confluence of the Middle Fork and the Main Stem. This site likely occurs elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The soils on this site are formed in slightly to moderately decomposed organic materials derived from *Sphagnum* spp., *Carex* spp., and ericaceous shrubs. Mineral lenses and horizons are present in some soils. In most places, the soils are shallow or moderately deep over permafrost. Most soils do not have a water table perched on the permafrost and are well drained.

4.e. Vegetation Narrative: Spruce/shrub birch woodland is the correlated PNC on this site. In many places, particularly on lower relief mounds, cover of stunted trees is less than 10 percent and Low shrub birch scrub may be the potential or, at the least, a persistent late seral stage.

5.b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.): This site is probably highly susceptible to wild fire in most places. During summer and in otherwise dry years, the elevated, convex mounds are well drained and the surface organic matter is dry. This site also occurs adjacent to other glaciolacustrine upland ecological sites, which are highly susceptible to wild fire. Adjacent ponds and Sedge wet meadows may provide some degree of fire protection.

Following a light burn, vegetative succession should lead directly and rather quickly to scrub vegetation dominated by *Betula glandulosa* and ericaceous shrubs. Spruce trees would not likely survive the fire and would be expected to regenerate slowly. See *Riparian or Wetland Site Progressions* in Part B of this site description for additional wild fire impacts.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy103AK - Stream Terraces, Frozen

172Xy104AK - Stream Terraces

172Xy106AK - Glaciolacustrine Uplands

172Xy107AK - Glaciolacustrine Uplands, Frozen

b. Riparian or Wetland:

172Xy105AK - Terraces, Wet

172Xy202AK - Shallow Drainages

172Xy501AK - Wet Depressions

8. List of Competing Sites (number and names):

172Xy111AK - Peat Mounds
Spruce/shrub birch woodland

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progressions:

(1) Aggradation: In most places this site occurs in complex with ecological site 172Xy501AK - Wet Depressions and Sedge wet meadow vegetation. In many situations the peat mounds are believed to have developed from the wet meadows. Initial stages of peat ;mound development probably is due to an unusually thin cover of snow (Williams and Smith 1989), which allow for deep frost penetration and frost heaving. Heaving ground often forms discrete, irregularly spaced bumps several inches in height. The drier peat near the surface of these slightly elevated areas increases the overall insulating qualities of the peat, maintaining frozen soil conditions throughout the summer and promoting the formation of ice crystals and masses. The developing ice core of the mound is fed by the abundant water from the adjacent wet meadows and ponds. Free water in contact with the frozen core in turn freezes, increasing the size and extent of the frozen core. Peat mounds are usually formed as the core of massive ice enlarges and pushes the surface up and above the surrounding landscape.

All stages of mound development can be observed in the Gulkana River area, from low, small diameter mounds dispersed throughout areas of wet meadow to high, steep sided mounds elevated as much as 30 feet (9.1 m) above adjacent wet meadows and lakes. Small, low relief mounds typically support Low shrub birch/closed sheath cottongrass scrub. *Eriophorum brachyantherum* and other wetland plant species decline in abundance as the mound is further elevated above the surrounding landscape.

The impact of wild fire on ecological site 172Xy111AK - Peat Mounds depends to a large degree on its effects on the thermal balance of the mound and is likely to range from slight to devastating. Following a very light burn, vegetative succession should lead directly and rather quickly to scrub vegetation dominated by *Betula glandulosa* and ericaceous shrubs. Spruce trees would not likely survive the fire and would be expected to regenerate slowly. Moderate to severe burning, on the other hand, could lead to complete destruction of the site. Blackening and partial combustion of the surface organic layers by fire could dramatically effect the insulating capacity of the organic surface and disrupt the thermal balance of the mound. During particularly dry conditions, the fire could possibly consume the organic material to a considerable depth. The blackened surface in combination with the loss of the surface vegetation would result in a significant increase in the amount of solar energy hitting and being absorbed at the mound surface. In the most extreme case, the ice core would melt sufficiently for the peat mound to collapse. In this situation, a portion, if not all, of the mound would likely retrogress to ecological site 172Xy501AK - Wet Depressions and Sedge wet meadow vegetation or to a pond.

1.g. Recreation and Natural Beauty: This site, particularly when occurring in complex with ecological site 172Xy501AK - Wet Depressions, provides striking contrast and landscape diversity in extensive areas of otherwise monotonous spruce woodlands characteristic of glaciolacustrine terraces. This site also provides excellent opportunities for viewing wildlife and hunting.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy111AK - Peat Mounds
Cover type: Spruce/shrub birch woodland
Seral status: PNC
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	100	25	25	25	50
Labrador-tea	SS	100	30	30	30	55
black crowberry	SS	100	7	7	7	26
bog blueberry	SS	100	15	15	15	39
lowbush cranberry	SS	100	10	10	10	32
shrub birch	SS	100	10	10	10	32
arctic dock	F	100	1	1	1	7
arctic sweet coltsfoot	F	100	2	2	2	14
cloudberry	F	100	20	20	20	45
closed-sheath cottongrass	G	100	4	4	4	20
polar grass	G	100	10	10	10	32
spruce-muskeg sedge	G	100	15	15	15	39
Moss layer	M	100	70	70	70	84
Lichen layer	L	100	15	15	15	39
Litter and mulch	B	100	15	15	15	39
Woody litter (>1" dia.)	B	100	1	1	1	7

Salix spp. includes:

Ecological Site: 172Xy111AK - Peat Mounds
Cover type: Low shrub birch scrub
Seral status: early-mid
Number of stands: 2
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

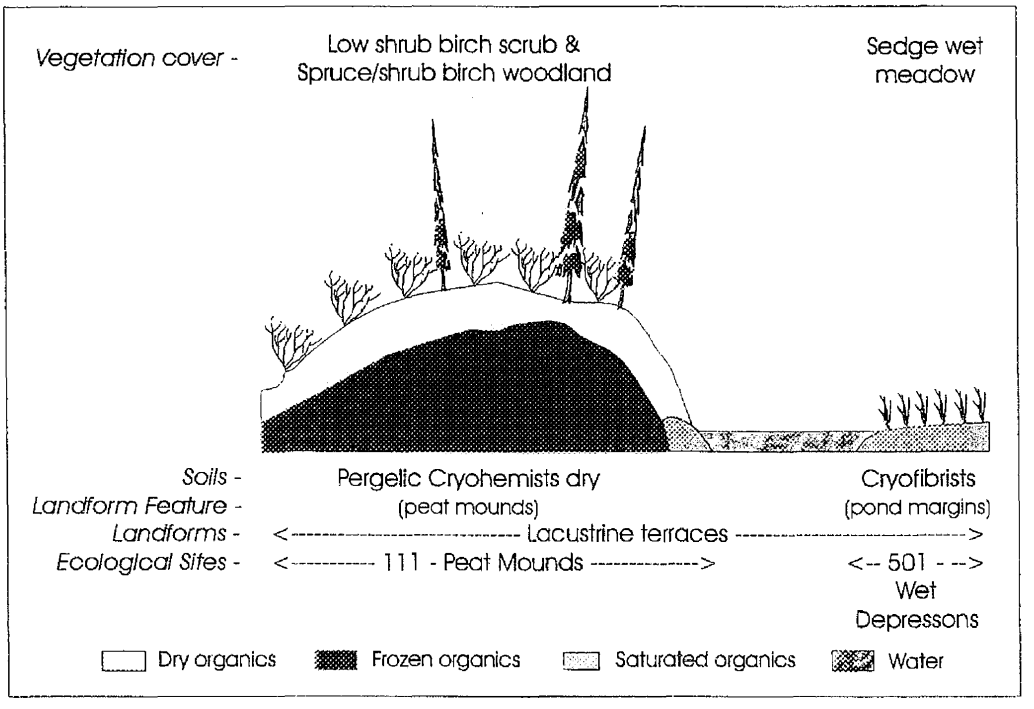
Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	100	5	5	5	22
Beauverd spiraea	SS	100	1	1	1	7
Labrador-tea	SS	100	20	15	25	45
black crowberry	SS	100	2	1	2	12
bog blueberry	SS	100	23	20	25	47
lowbush cranberry	SS	50	1	1	1	5
shrub birch	SS	100	33	25	40	57
willow	SS	100	8	5	10	27
Labrador lousewort	F	50	1	1	1	5
arctic sweet coltsfoot	F	100	6	1	10	23
cloudberry	F	100	1	1	1	10
common fireweed	F	50	1	1	1	5
polar grass	G	100	2	1	3	13
sedge	G	100	1	1	1	7
Moss layer	M	100	40	35	45	63
Lichen layer	L	100	2	2	2	14
Litter and mulch	B	100	1	1	1	7
Surface water	B	50	1	1	1	5

Salix spp. includes: SAPL2

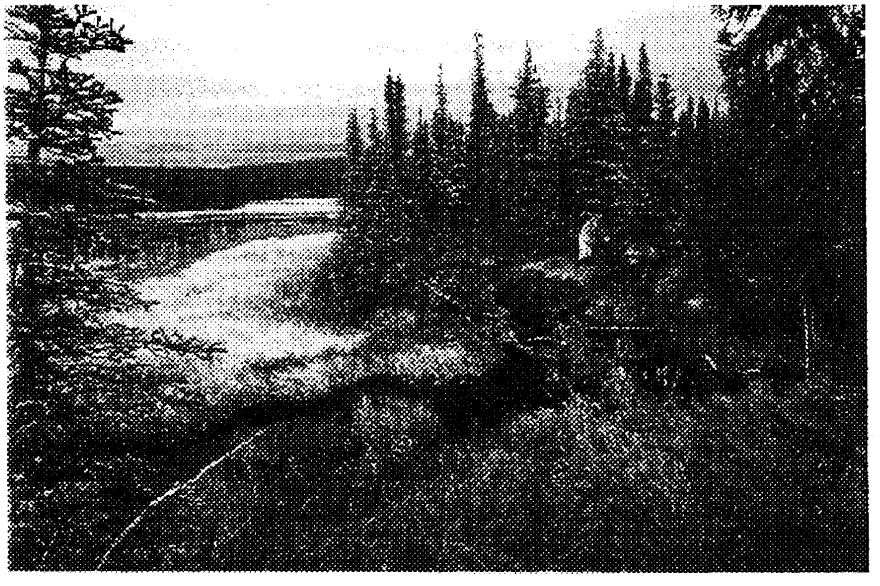
Ecological Site: 172Xy111AK - Peat Mounds
Cover type: Low shrub birch/closed sheath cottongrass scrub
Seral status: early, low relief mounds
Number of stands: 2
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T2	50	1	1	1	7
black spruce	T3	50	1	1	1	5
Labrador-tea	SS	100	20	10	30	45
black crowberry	SS	100	8	1	15	28
bog blueberry	SS	100	18	10	25	42
lowbush cranberry	SS	100	3	1	5	17
shrub birch	SS	100	18	15	20	42
Labrador lousewort	F	100	1	1	1	7
arctic sweet coltsfoot	F	50	1	1	1	7
cloudberry	F	100	9	2	15	29
bluejoint reedgrass	G	50	3	3	3	12
closed-sheath cottongrass	G	100	20	15	25	45
sedge	G	50	10	10	10	22
water sedge	G	50	2	2	2	10
Moss layer	M	100	28	20	35	52
Lichen layer	L	100	21	7	35	46
Litter and mulch	B	100	20	1	40	45
Woody litter (>1" dia.)	B	50	1	1	1	7

Salix spp. includes:



Representative cross section in the glaciolacustrine uplands above the upper North Branch.



Typical setting of ecological site 172Xy111AK - Peat Mounds. Peat mounds usually occurs as low, steep sided mounds and ridges in complex with small lakes and ponds and Sedge wet meadows within and along the edges of topographic depressions. The depressions are included in Ecological site 172Xy501AK - Wet Depressions

Gravelly Flood Plains
172Xy200AK

Standard Site Description

Site Number: 172Xy200AK
Site Name: Gravelly Flood Plains, Moderately Wet
Plant Name: SALIX/herb
Date: 1/98
Initials (Author's/Agency): DRK, MHC / USDA-NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____, _____

(3) Typical Location:

Legal: SE 1/4; SW 1\4; NE 1\4; Sec. 05 T. 12N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: floodplains
(b) Specific: low & mid, _____
(c) Microrelief: plane, _____
(2) Elevation/Aspect:
Low 2500 / All High 2850 / All
(3) Slope: Low: 0 % High 3 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	___.___	___.___	___.___	___.___	___.___	___.___
2.	_____	___.___	___.___	___.___	___.___	___.___	___.___
3.	_____	___.___	___.___	___.___	___.___	___.___	___.___
4.	_____	___.___	___.___	___.___	___.___	___.___	___.___
5.	_____	___.___	___.___	___.___	___.___	___.___	___.___

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width
1.	___	___	___	___	___	___	___ A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___ B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___ C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___ D) Not Determined
5.	___	___	___	___	___	___	

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____._ to _____ .__

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____,
_____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic, _____
b. Soil Temperature Regime: Cryic, _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28 °F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson Alaska
(2) Station Number: 506095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Oxyaquic Cryorthents	sandy skeletal, mixed, nonacid
(2)		
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: Alluvium, _____

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 0 (inches) Maximum 2 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low	0	High	45	Boulders Low	0	High 0
Cobbles	Low	0	High	20	Channers Low	0	High 0
Stones	Low	0	High	0	Flagstone Low	0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Ochric Epipedon
(2) Thickness: Minimum 1 (inches) Maximum 10 (inches)

e. Surface Texture: SL, SR-S-SI _____, _____

f. Soil Depth; (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 3 (inches) Maximum 16 (inches)

h. AWC for Effective Plant Root Zone: Low .02 High .18 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 0 (inches) Maximum 8 (inches)
(2) Average Thickness: >55 (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 0 (inches) Maximum 8 (inches)
(2) Average Thickness >55 (inches)

l. Reaction:

	Depth Range (Inches) Minimum	Maximum	Amount (Ph) Low	High
Surface Layers:	0	8	6.1	7.3
Layers:	8	60	6.1	7.8
All Other Layers:				

m. Salinity:

	Depth Range (Inches) Minimum	Maximum	Amount (mmhos/cm) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Maximum	Amount (SAR) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	F	M	M	M	M	M	F	F	F
4-10"	↓	↓	↓	↓	F	↓	↓	↓	↓	↓	↓	↓
10-20"	↓	↓	↓	↓	M	↓	↓	↓	↓	M	↓	↓
20-40"	W	W	W	W	W	W	W	W	W	W	W	W
40-60"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 1 (Ft) Maximum 3.2 (Ft)
(2) Kind: Apparent
(3) Month(s): May to Sep

q. Flooding:
(1) Frequency: frequent
(2) Duration: brief - long
(3) Months: May to Sep

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	0 - 7	2 - 25
Shrubs	65 - 85	2.5 - 6
Grasses, Grass Like, & Forbs	1 - 15	1 - 2.5
Cryptogams	15 - 35	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	1 - 70	_____ - _____
P	0 - 10	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL	white spruce	__-__	____-____	0-1	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIGL	white spruce	_____	0-5	__-__	__-__	_____
* SALIX	willow	_____	60-75	__-__	__-__	_____
POFR4	shrubby cinquefoil		0-20	__-__	__-__	_____
VAUL	bog blueberry	_____	2-15	__-__	__-__	_____
SAMY	blueberry willow	_____	0-5	__-__	__-__	_____

Other ..... __-__NTE__ea

SAAL felt leaf willow 0-5

_____ _____

_____ _____

_____ _____

* primarily SAPL2; includes SAMO2 and SABA3 also

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
ARLAZ	polargrass		0-2	___-___	___-___	
CACAA	bluejoint reedgrass		0-15	___-___	___-___	
CAREX	sedge		2-15	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
EQUIS	horsetail		0-10	___-___	___-___	
SWPE	felwort		1-3	___-___	___-___	
RUAR	northern blackberry		0-25	___-___	___-___	
PEFR4	arctic sweet coltsfoot		0-7	___-___	___-___	
POAC	tall Jacob's-ladder		0-4	___-___	___-___	

Other ..... ___-___NTE___ea

SAST11	Sitka burnet	0-5

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	0 - 15	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
Other			___-___	NTE___ea
___	___			
___	___			
___	___			
___	___			

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total moss	15 - 35	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
Other			___-___	NTE___ea

_____	_____
_____	_____
_____	_____
_____	_____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	4
Late (Good)	_____	_____
Mid (Fair)	_____	1
Early (Poor)	_____	_____
Drier/older microsites		1

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
619	FPI	Tangoe
	FPR	Tangoe wet occasionally flooded

172Xy200AK - Gravelly Flood Plains, Moderately Wet
Low willow/herb scrub

Part A: Description of Site

1.c. Landscape Narrative: This site consists of level to gently sloping flood plains formed in a very thin mantle of stratified alluvium over gravelly and cobbly alluvium along clear water rivers and streams. Terrace height above the mean summer channel level is typically 3 feet (0.6 m) or less and the site is frequently to occasionally flooded. In some places, the site is cut with shallow, narrow ephemeral and perennial channels. Elevation is generally from 2500 to 2850 feet (762 to 869 m).

In the Gulkana River area, this site occurs primarily along the Middle Fork, along the Main Stem from the outlet of Paxson Lake to the Middle Fork confluence, and along Keg Creek on the North Branch. It also occurs in small, isolated areas throughout the remainder of the River corridor. This site undoubtedly occurs along moderate to steep gradient reaches of the other non-glacial streams and rivers elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Units (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is 1 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 18 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The weakly developed soils on this site typically have a mantle of stratified sandy and silty alluvium less than 8 inches (20 cm) thick over very gravelly and cobbly alluvium. The surface organic mat ranges from 0 to 1 inch (0 to 2.5 cm) thick. Depth to seasonal high water table ranges from 12 to 40 inches (30 to 102 cm) and the soils are somewhat poorly drained. During periods of peak snowmelt and runoff, the water table is at or near the soil surface. On the lowest flood plain positions, the water table may remain near the surface most of the growing season.

4.e. Vegetation Narrative: Low willow/herb scrub is the correlated Potential Natural Plant Community on this site. In most places, this PNC is best characterized as a riparian association, which develops and persists under a regime of intermittent fluvial disturbance. In the Gulkana River Area, the upper elevational limit of this site, which corresponds with the upper elevational limit of the survey area within the river corridor, may be above the limit of tree growth. In this situation, the PNC probably represents the long term vegetative potential.

5.b. Wildlife Narrative: This site provides excellent winter habitat for moose. Willow browse is dense and most stands exhibit moderate to severe hedging. Beaver use of the willow is evident in many stands. Uses include forage and dam building materials.

6. Community Dynamics (Fire, etc.): Tall feltleaf willow scrub is an early and apparently short lived seral stage on this site. Most stands of this type are of small extent and usually restricted to gravelly bars within and along the margins of the river channel. Otherwise, Low willow/herb scrub is the predominant vegetation type found on this site. On slightly higher terrace positions, white spruce seedlings and small

saplings are frequently found within the Low willow/herb scrub. In a few places, small stands of White spruce/willow open forest occur also.

This site is probably only moderately susceptible to wild fire. Wet soil conditions should limit the severity of burning, allowing the willow scrub to regenerate quickly from root sprouts.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy103AK - Stream Terraces, Frozen

b. Riparian or Wetland:

172Xy101AK - Loamy High Flood Plains

172Xy205AK - Loamy Flood Plains, Wet

172Xy500AK - Loamy Riverbanks

8. List of Competing Sites (number and names):

172Xy201AK - Loamy Flood Plains, Moderately Wet: similar to slightly higher flood plain positions; soils with 10 to 37 inches (25 to 94 cm) of stratified sandy and silty alluvium over very gravelly and cobbly alluvium; similar vegetative potential.

172Xy205AK - Loamy Flood Plains, Wet: similar to slightly lower flood plain positions; soils usually with 10 to 37 inches (25 to 94 cm) of stratified sandy and silty alluvium over very gravelly and cobbly alluvium; water table 0 to 18 inches (0 to 46 cm) and poorly to very poorly drained soils; Low willow/water sedge scrub vegetative potential.

172Xy200AK - Gravelly Flood Plains, Moderately Wet
Low willow/herb scrub

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progression:

(1) Aggradation: Based on observations and data collected in the Gulkana River area, this site is best described as an early stage of site progression and vegetation succession on flood plains along moderate to steep gradient stream channels. Down-cutting by the channel and continued surface deposition of alluvium will over time raise the terrace height, increase the thickness of the fine textured alluvium on the soil surface, and cause other changes in site and soil properties. Site progression appears to lead to 172Xy101AK - Loamy High Flood Plains and White spruce/willow open forest vegetation. Near the upper elevational limit of 172Xy200AK - Gravelly Flood Plains, Moderately Wet the potential for trees is probably limited to occasional scattered trees and clumps of trees on favorable microsites. In these areas, site progression appears to lead to 172Xy201AK - Loamy Flood Plains, Moderately Wet and continued Low willow/herb scrub vegetative potential.

1.e. Insects and Disease Pests and Animal Damage: In many places, insect gall are common on willows. The insect(s) associated with these galls is not known. Most stands experience seasonally heavy browsing by moose and the willow is usually moderately to occasionally severely hedged. Beaver cut willow stems are common throughout many stands.

1.k. Applicable Field Offices: BLM, Glennallen District Office

NOTES:

As currently defined, site 200 is generally below treeline; site progression from low flood plains toward high flood plains is accompanied by vegetation succession toward White spruce/willow woodland. Treeline, however, appears to occur at about 2500 feet elevation, just below the elevation of Dickey Lake on the upper Middle Fork.

During initial field work in the Tangle Lakes portion of the Delta River Area, gravelly flood plains with Low willow/herb scrub were found in number of places. These site/stands are probably entirely above the elevation of tree growth and woodland potential. These sites/stands also are similar to ones found immediately below Dickey Lake in the Gulkana River Area.

In conjunction with the Delta River Area project, a new site will have to be defined to include gravelly flood plains above treeline. On this new site, Low willow/herb scrub would still be the potential during site progression toward higher flood plains. Dickey Lake area sites/stands currently included in site 200 would be correlated to the new site.

Ecological Site:172Xy200AK - Gravelly Flood Plains, Moderately Wet
Cover type: Low willow/herb scrub
Seral status: PNC
Number of stands: 4
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	25	1	1	1	4
white spruce	T2	50	5	2	7	15
white spruce	T3	75	3	1	5	14
Labrador-tea	SS	25	1	1	1	4
black crowberry	SS	25	2	2	2	7
blueberry willow	SS	50	4	3	5	14
bog blueberry	SS	100	11	2	15	32
feltleaf willow	SS	25	5	5	5	11
net vein willow	SS	25	1	1	1	5
red bearberry	SS	50	10	10	10	22
shrub birch	SS	25	5	5	5	11
shrubby cinquefoil	SS	75	12	1	20	30
willow	SS	100	70	60	75	84
Canadian bunchberry	F	25	1	1	1	4
Sitka burnet	F	25	5	5	5	11
anemone	F	25	1	1	1	4
arctic sweet coltsfoot	F	25	7	7	7	13
buttercup	F	25	1	1	1	4
cloudberry	F	50	1	1	1	7
common fireweed	F	25	1	1	1	4
dwarf scouring-rush	F	25	1	1	1	4
felwort	F	100	1	1	3	11
fleabane	F	25	1	1	1	4
horsetail	F	25	10	10	10	16
marsh cinquefoil	F	50	1	1	1	6
marsh grass-of-parnassus	F	50	2	1	2	9
milk-vetch	F	25	1	1	1	5
northern blackberry	F	50	15	5	25	27
serpent-grass	F	25	1	1	1	4
single delight	F	50	2	1	2	9
tall Jacob`s-ladder	F	75	2	1	4	13
violet	F	50	1	1	1	6
bluejoint reedgrass	G	50	10	5	15	22
polar grass	G	75	1	1	2	9
rough bent	G	25	1	1	1	4
sedge	G	75	3	2	5	16
water sedge	G	25	20	20	20	22
Moss layer	M	100	26	15	35	51
Lichen layer	L	50	10	5	15	22
Bare soil	B	100	1	1	2	11
Litter and mulch	B	100	22	1	70	47
Rock fragments	B	50	1	1	1	6
Woody litter (>1" dia.)	B	50	7	3	10	18

Salix spp. includes: SALIX SAMO2 SAPL2

Ecological Site:172Xy200AK - Gravelly Flood Plains, Moderately Wet
Cover type: Tall feltleaf willow scrub
Seral status: early
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

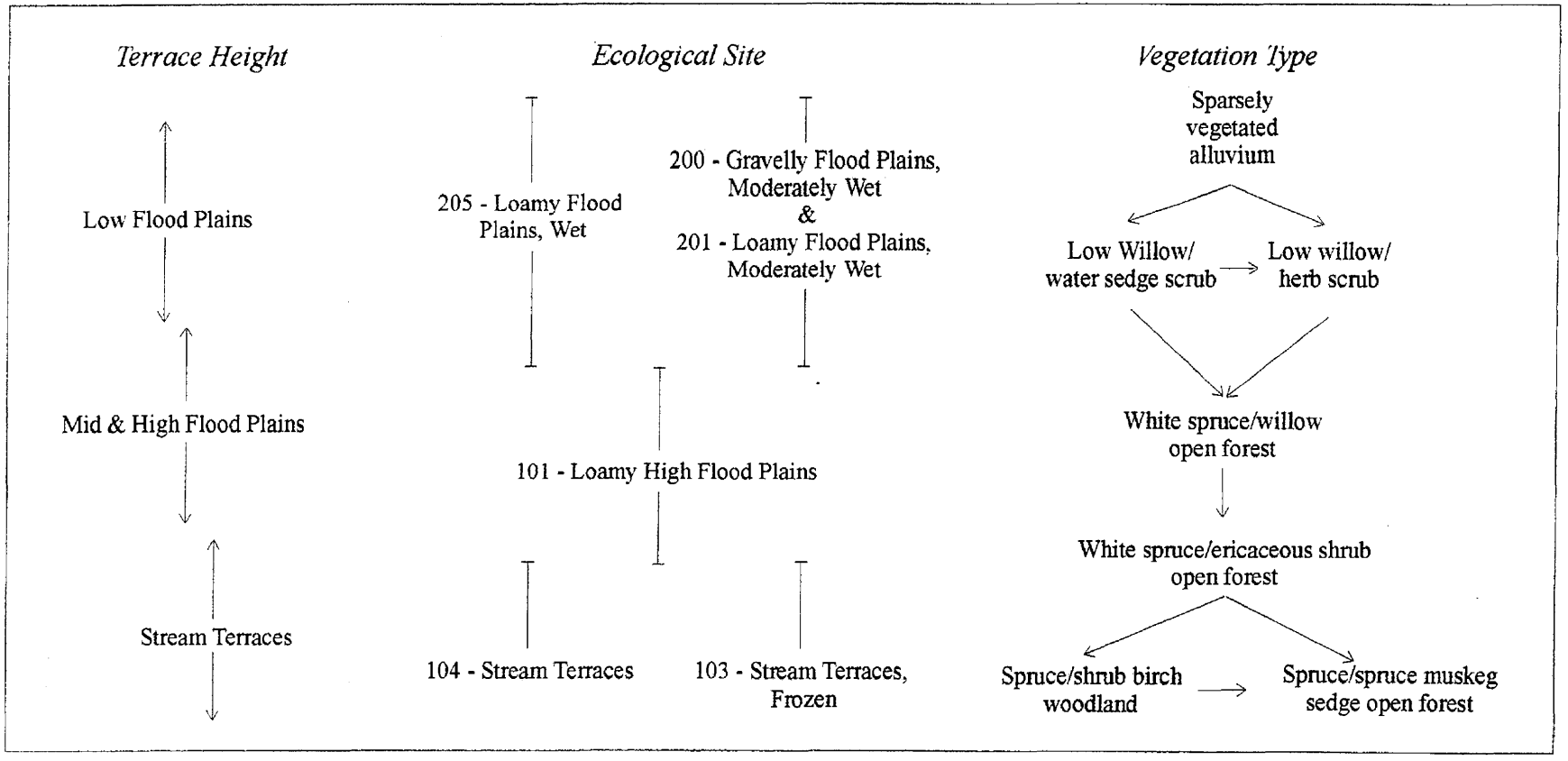
Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T3	100	15	15	15	39
white spruce	T3	100	2	2	2	14
bog blueberry	SS	100	1	1	1	7
feltleaf willow	SS	100	25	25	25	50
russet buffalo-berry	SS	100	3	3	3	17
shrub birch	SS	100	1	1	1	7
willow	SS	100	10	10	10	32
American milk-vetch	F	100	1	1	1	10
Tilesius' wormwood	F	100	1	1	1	7
Unknown forb	F	100	1	1	1	7
alpine sweet-vetch	F	100	1	1	1	10
arctic aster	F	100	1	1	1	10
common fireweed	F	100	1	1	1	10
dwarf fireweed	F	100	5	5	5	22
fleabane	F	100	1	1	1	7
marsh grass-of-parnassus	F	100	1	1	1	7
milk-vetch	F	100	7	7	7	26
northern blackberry	F	100	1	1	1	7
ragwort	F	100	1	1	1	7
rosy pussytoes	F	100	1	1	1	7
single delight	F	100	1	1	1	7
tall scouring-rush	F	100	1	1	1	7
blue grass	G	100	2	2	2	14
fescue	G	100	4	4	4	20
wheatgrass	G	100	1	1	1	7
Moss layer	M	100	10	10	10	32
Lichen layer	L	100	40	40	40	63
Bare soil	B	100	1	1	1	7
Litter and mulch	B	100	15	15	15	39
Rock fragments	B	100	60	60	60	77
Woody litter (>1" dia.)	B	100	1	1	1	7

Salix spp. includes: SABA3

Ecological Site:172Xy200AK - Gravelly Flood Plains, Moderately Wet
Cover type: White spruce/willow open forest
Seral status: post-PNC
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	100	10	10	10	32
white spruce	T2	100	35	35	35	59
white spruce	T3	100	15	15	15	39
Labrador-tea	SS	100	10	10	10	32
black crowberry	SS	100	5	5	5	22
bog blueberry	SS	100	35	35	35	59
feltleaf willow	SS	100	10	10	10	32
lowbush cranberry	SS	100	2	2	2	14
red bearberry	SS	100	2	2	2	14
shrubby cinquefoil	SS	100	15	15	15	39
willow	SS	100	55	55	55	74
common fireweed	F	100	1	1	1	7
dwarf scouring-rush	F	100	1	1	1	7
horsetail	F	100	1	1	1	7
marsh grass-of-parnassus	F	100	1	1	1	7
milk-vetch	F	100	10	10	10	32
northern blackberry	F	100	1	1	1	7
wintergreen	F	100	1	1	1	7
polar grass	G	100	1	1	1	10
water sedge	G	100	1	1	1	7
Moss layer	M	100	30	30	30	55
Lichen layer	L	100	2	2	2	14
Bare soil	B	100	1	1	1	7
Litter and mulch	B	100	60	60	60	77
Woody litter (>1" dia.)	B	100	15	15	15	39

Salix spp. includes: SALIX

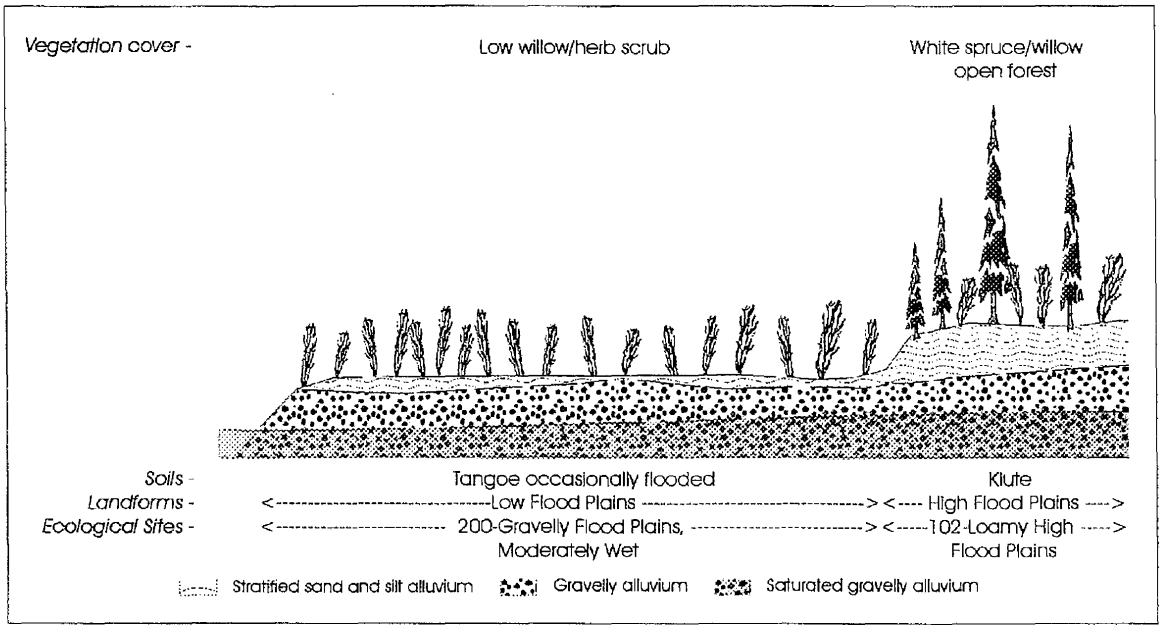


General relationships between terrace height, ecological sites, and vegetation types in the willow zone, Gulkana River Area, Alaska.

Selected physical properties for typical stages of site progression on flood plains and stream terraces in the willow zone, Gulkana River Area, Alaska.

Ecological Site (stage)	Cover Type(s)	Terrace Height avg(rge)	Flooding Frequency	Depth to SSK avg(rge)	Thickness of OM avg(rge)	Depth to Water Table		Depth to Permafrost	
						Pedons w/ <60"	Depth when <60" avg(rge)	Pedons w/ <60"	Depth when <60" avg(rge)
		-- ft --		-- in --	-- in --	-- % --	-- in --	-- % --	-- in --
205 - Loamy Flood Plains, Wet	SALIX/CAAQ	2 (1-5)	freq-occas	17 (0-42)	4 (1-10)	100	13 (0-30)	0	-
200 - Gravelly Flood Plains, Moderately Wet	SALIX/herb	3 (2-4)	occas-freq	28 (3-60)	1 (0-3)	100	28 (12-44)	0	-
201 - Loamy Flood Plains, Moderately Wet	SALIX/herb	3 (1-8)	occas-freq	25 (9-50)	1 (0-6)	79	36 (32-45)	0	-
	SALIX/herb2	7 (4-12)	occas	60 (58-60)	1 (0-1)	12	46 (46-60)	0	
101 - Loamy High Flood Plains (PNC)	PIGL/SALIX	6 (3-15)	occas-rare	27 (3-60)	2 (0-7)	39	40 (31-58)	24	33 (17-49)
101 - Loamy High Flood Plains (post-PNC)	PIGL/erica	9 (4-25)	rare-none	30 (12-60)	4 (0-10)	21	35 (8-50)	54	29 (6-52)
104 - Stream Terraces (mid to late seral)	PICEA/BEGL	11(6-25)	rare-none	30 (18-60)	4 (1-9)	9	31 (16-40)	27	36 (18-55)
103 - Stream Terraces, Frozen (PNC)	PICEA/CALU2	9 (4-20)	rare-none	30 (18-60)	7 (2-12)	100	8 (0-23)	100	15 (0-25)

Notes:
Terrace height - estimated height of flood plain or stream terrace surface above the mid summer channel level.
Depth to SSK - depth to sandy skeletal alluvium below the mineral soil surface in pedons without permafrost or in which the permafrost level was below the SSK contact; measured in the soil pit.
Thickness of OM - thickness of the surface organic mat; measured in the soil pit.
Depth to Water Table and Permafrost - Pedons w/ <60": pedons in which a water table or permafrost was present within 60 inches below the mineral surface. Depth when <60": depth below the mineral surface when present; measured in the soil pit.



Representative cross section in the willow zone along the Main Stem below Paxson Lake.

Loamy Flood Plains, Moderately We
172Xy201AK

Standard Site Description

Site Number: 172Xy201AK
Site Name: Loamy Flood Plains, Moderately Wet
Plant Name: SALIX/herb
Date: 1/28
Initials (Author's/Agency): DRK, MHC/USDA-NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____, _____

(3) Typical Location:

Legal: NE1/4; NW1/4; NE1/4; Sec. 07 T. 12N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: Flood plains
(b) Specific: low & mid, _____
(c) Microrelief: plane, convex
(2) Elevation/Aspect:
Low 2350 / All High 2900 / All
(3) Slope: Low: 0 % High 10 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	___._____	___._____	___._____	___._____	___._____	___._____
2.	_____	___._____	___._____	___._____	___._____	___._____	___._____
3.	_____	___._____	___._____	___._____	___._____	___._____	___._____
4.	_____	___._____	___._____	___._____	___._____	___._____	___._____
5.	_____	___._____	___._____	___._____	___._____	___._____	___._____

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width	
1.	___	___	___	___	___	___	___	A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___	B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___	C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___	D) Not Determined
5.	___	___	___	___	___	___		

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____._ to _____ .-

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI	—	—	—	—	—	—	—	—	—	—	—	—	(in.)
MEAN	.9	.6	.8	.5	.7	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW	—	—	—	—	—	—	—	—	—	—	—	—	
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson Alaska
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Aquic Cryofluvents	Coarse loamy over sandy or sandy skeletal, mixed, non acid
(2)		
(3)	Typic Cryaquents Typic Cryofluvents	Coarse loamy over sandy or sandy skeletal, mixed, non acid sandy, mixed, nonacid

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: Alluvium, _____

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum Ø (inches) Maximum 1 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Ochric Epipedon
(2) Thickness: Minimum 3 (inches) Maximum 10 (inches)

e. Surface Texture: FSL, SL, _____, _____

f. Soil Depth; (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 4 (inches) Maximum 35 (inches)

h. AWC for Effective Plant Root Zone: Low .10 High .30 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 10 (inches) Maximum 37 (inches)
(2) Average Thickness: 750 (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 10 (inches) Maximum 37 (inches)
(2) Average Thickness >50 (inches)

l. Reaction:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (Ph) Low	Amount (Ph) High
Surface Layers:	0	43	6.1	7.8
Layers:	43	60	6.1	8.4
All Other Layers:				

m. Salinity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (mmhos/cm) Low	Amount (mmhos/cm) High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (SAR) Low	Amount (SAR) High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	W	M	M	M	M	M	F	F	F
4-10"	↓	↓	↓	F	W	↓	↓	↓	↓	M	↓	↓
10-20"	↓	↓	↓	↓	↓	W	W	W	↓	↓	↓	↓
20-40"	↓	↓	↓	↓	↓	↓	↓	↓	W	W	W	W
40-60"	W	W	W	W	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 1 (Ft) Maximum 4 (Ft)
(2) Kind: Apparent
(3) Month(s): May to Sep

q. Flooding:
(1) Frequency: Occasional
(2) Duration: brief
(3) Months: Apr to Sep

r. Ponding
(1) Depth: Minimum ___ Maximum ___(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	0 - 10	2 - 25
Shrubs	30 - 95	3 - 8
Grasses, Grass Like, & Forbs	50 - 90	2 - 3.5
Cryptogams	0 - 40	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	10 - 85	_____ - _____
P	0 - 2	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL	white spruce	__-__	____-____	0-10	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees. if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIGL	white spruce	_____	0-3	__-__	__-__	_____
*SALIX	willow	_____	10-95	__-__	__-__	_____
SAAL	feltleaf willow	_____	0-60	__-__	__-__	_____
POFR4	shrubby cinquefoil	_____	0-7	__-__	__-__	_____
VAUL	bog blueberry	_____	0-10	__-__	__-__	_____

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

* includes SARL2, SABA3, SAMO2, SANO2

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
AGROPR	wheatgrass		0-20	___-___	___-___	
ARLAZ	polar grass		0-10	___-___	___-___	
AGSCS	rough bent		0-4	___-___	___-___	
CACAA	bluejoint reedgrass		10-60	___-___	___-___	
CAREX	sedge		1-3	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
EPAN2	common fireweed		0-15	___-___	___-___	
MEPA	tall bluebells		0-40	___-___	___-___	
EQUI5	horsetail		0-20	___-___	___-___	
RUAR	northern blackberry		0-7	___-___	___-___	
POAC	tall Jacobs-ladder		0-7	___-___	___-___	

Other ..... ___-___NTE___ea

ASSI	arctic aster	0-7
ARTI	Tilesius' wormwood	0-5

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	0 - 10	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
Other			___-___	NTE___ea
___	___			
___	___			
___	___			
___	___			

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total moss	0 - 40	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
Other			___-___	NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		13
Late (Good)		
Mid (Fair)		
Early (Poor)		4
Higher/older microsites		2

e. Vegetation Narrative:

5. Wildlife

a. Species List:

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	FP2	Dackey cool
	1	Swedna
	FP22	Dackey cool
	FP23	Sankluna
	ST12	Ostna
	ST31	Dackey cool
	ST41	Dackey cool

172Xy201AK - Loamy Flood Plains, Moderately Wet
Low willow/herb scrub

Part A: Description of Site

1.c. Landscape Narrative: This site consists of level to occasionally strongly sloping flood plains formed in stratified silty alluvium over very gravelly and cobbly alluvium along clear water rivers and streams. The site is found on point bars and outer margins of meanders. Terrace height above mean summer channel level is typically from 2 to 8 feet (0.6 to 2.4 m) and the site is frequently to occasionally flooded. Elevation is generally from 2350 to 2900 feet (716 to 884 m).

In the Gulkana River area, this site occurs along the Middle Fork, the upper North and South Branches, and the Main Stem from the confluence of the Middle Fork to canyon rapids. It also occurs in small, scattered locations along the other reaches of the Gulkana. This site undoubtedly occurs along low to moderate gradient reaches of other non-glacial streams and rivers elsewhere in the Gulkana River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is 1 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 18 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The weakly developed soils on this site typically have a mantle of stratified sandy and silty alluvium 10 to 37 inches (25 to 94 cm) thick over very gravelly and cobbly alluvium. Depth to seasonal high water table ranges from 14 to 48 inches (36 to 122 cm) and the soils are poorly to moderately well drained. During most years, the water table is at or near the surface during periods of snowmelt and peak runoff. Aquic conditions including redox depletions and/or a reduced matrix are present within 20 inches (51 cm) of the soil surface.

4.e. Vegetation Narrative: The correlated Potential Natural Plant Community on the site is Low willow scrub. Within the Gulkana River Area, two vegetation type are included in the PNC — Low willow/herb scrub and Low willow/herb2 scrub (on Sankluna soils). These vegetation types are best characterized as riparian associations, which persist under a regime of intermittent fluvial disturbance. The upper elevational limit of this site in the Gulkana River Area may be above tree line. In this situation, Low willow/herb scrub probably represents the long term vegetative potential.

5.b. Wildlife Narrative: This site provides excellent winter habitat for moose. Willow browse is moderately dense to dense and most stands exhibit moderate to severe hedging. Beaver use of the willow is evident in many stands also. Uses include forage and dam building materials.

6. Community Dynamics (Fire, etc.): Tall feltleaf willow scrub is an early and apparently short lived seral stage on this site. Most stands of this type are of small extent and generally restricted to bars within and along the margins of the channel. On higher terrace positions, *Picea glauca* seedlings and small saplings are common within

the willow scrub along the edges with adjacent forest vegetation. In a few places, small stands of White spruce/willow open forest occur also.

This site is susceptible to wild fire, however, fire impacts are likely not severe or long lived. *Salix* spp. and many herbs will sprout following burning, allowing the vegetation to recover to a pre-burn conditions within a relatively short number of years.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy101AK - Loamy Stream Terraces, Frozen

b. Riparian or Wetland:

172Xy101AK - Loamy High Flood Plains

172Xy500AK - Loamy Riverbanks

8. List of Competing Sites (number and names):

172Xy200AK - Gravelly Flood Plains, Moderately Wet: similar to slightly lower flood plain position; moderate to steep gradient channel; soils very gravelly and cobbly to the surface or occasionally with thin surface layer of stratified sandy and silty alluvium; similar vegetative potential.

172Za205AK - Loamy Flood Plains, Wet: similar to slightly lower floor plain positions; similar channel gradients; soils with about 8 to 37 inches (20 to 94 cm) or more stratified fine textured alluvium over sandy and gravelly alluvium; water table at 0 to 18 inches (0 to 46 cm) and poorly to very poorly drained soils; Low willow/water sedge scrub vegetative potential.

172Xy201AK - Loamy Flood Plains, Moderately Wet
Low willow/herb scrub

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progression:

(1) Aggradation: Based on observations and data collected in the Gulkana River area, this site is best described as an early stage of site progression and vegetation succession on flood plains along low to moderate gradient stream channels. Down-cutting by the channel and continued surface deposition of alluvium will over time raise the terrace height, increase the thickness of the fine textured alluvium on the soil surface, and cause other changes in site and soil properties. Site progression appears to lead to 172Xy101AK - Loamy High Flood Plains and White spruce/willow open forest vegetation. Near the upper elevational limit of 172Xy201AK - Loamy Flood Plains, Moderately Wet, the potential for trees is probably limited to occasional scattered trees and clumps of trees on favorable microsites. In these areas, this site is probably relatively stable.

1.e. Insects and Disease Pests and Animal Damage: In many places, insect gall are common on willows. The insect(s) associated with these galls is not known. Most stands experience seasonally heavy browsing by moose and the willow is usually moderately to occasionally severely hedged. Beaver cut willow stems are common throughout many stands.

1.k. Applicable Field Offices: BLM, Glennallen District Office

NOTES:

As currently defined, site 201 is generally below treeline; site progression from low flood plains toward high flood plains is accompanied by vegetation succession toward White spruce/willow woodland. Treeline, however, appears to occur at about 2500 feet elevation, just below the elevation of Dickey Lake on the upper Middle Fork.

During initial field work in the Tangle Lakes portion of the Delta River Area, loamy flood plains with Low willow/herb scrub were found in number of places. These site/stands are probably entirely above the elevation of tree growth and woodland potential. These sites/stands also are similar to ones found immediately below Dickey Lake in the Gulkana River Area.

In conjunction with the Delta River Area project, a new site will have to be defined to include loamy flood plains above treeline. On this new site, Low willow/herb scrub would still be the potential during site progression toward higher flood plains. Dickey Lake area sites/stands currently included in site 201 would be correlated to the new site.

Ecological Site: 172Xy201AK - Loamy Flood Plains, Moderately Wet
Cover type: Low willow/herb scrub
Seral status: PNC
Number of stands: 8
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	38	4	1	10	12
balsam poplar	T3	13	20	20	20	16
white spruce	T3	38	1	1	3	7
bog blueberry	SS	38	4	1	10	12
feltleaf willow	SS	38	17	5	35	25
net vein willow	SS	13	2	2	2	5
prickly rose	SS	13	1	1	1	3
russet buffalo-berry	SS	13	1	1	1	3
shrub birch	SS	13	3	3	3	6
shrubby cinquefoil	SS	75	3	1	7	16
willow	SS	100	77	40	95	88
Canadian bunchberry	F	13	1	1	1	4
Sitka burnet	F	38	1	1	2	6
Tilesius' wormwood	F	38	2	1	5	9
alpine sweet-vetch	F	63	5	1	20	18
anemone	F	13	1	1	1	4
arctic aster	F	25	2	1	3	7
arctic dock	F	13	1	1	1	3
arctic sweet coltsfoot	F	13	1	1	1	3
cloudberry	F	13	5	5	5	8
common fireweed	F	88	10	1	45	30
felwort	F	13	1	1	1	4
horsetail	F	50	4	1	15	14
larkspur-leaf monkshood	F	38	1	1	1	4
marsh cinquefoil	F	13	1	1	1	3
marsh grass-of-parnassus	F	38	1	1	2	6
milk-vetch	F	13	10	10	10	11
northern bedstraw	F	38	2	1	5	9
northern blackberry	F	75	3	1	7	14
prickly rose	F	13	1	1	1	3
ragwort	F	13	1	1	1	3
serpent-grass	F	13	1	1	1	3
single delight	F	13	1	1	1	3
starwort	F	25	1	1	1	4
tall Jacob's-ladder	F	38	2	1	4	9
tall bluebells	F	25	3	3	3	9
valerian	F	25	1	1	2	6
violet	F	38	1	1	2	6
Unknown grass	G	13	1	1	1	3
alpine sweet grass	G	13	1	1	1	3
blue grass	G	25	4	2	5	9
bluejoint reedgrass	G	75	12	4	20	30
polar grass	G	50	4	1	10	13
rough bent	G	25	3	2	3	8
sedge	G	38	1	1	3	7
water sedge	G	13	1	1	1	3
Moss layer	M	100	14	1	45	38
Lichen layer	L	75	2	1	10	13
Bare soil	B	50	18	1	70	30
Litter and mulch	B	100	20	1	70	44
Rock fragments	B	13	1	1	1	3
Woody litter (>1" dia.)	B	13	2	2	2	5

Salix spp. includes: SABA3 SALIX SAMO2 SANO2 SAPL2

Ecological Site: 172Xy201AK - Loamy Flood Plains, Moderately Wet
Cover type: Low willow/herb2 scrub
Seral status: PNC (Sankluna soils)
Number of stands: 5
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T3	80	1	1	1	6
feltleaf willow	SS	100	38	25	60	62
shrubby cinquefoil	SS	20	1	1	1	3
willow	SS	80	6	1	17	23
Sitka burnet	F	20	1	1	1	4
Tilesius' wormwood	F	100	2	1	5	13
alpine sweet-vetch	F	40	2	1	2	8
anemone	F	20	1	1	1	3
arctic aster	F	100	3	1	7	16
arctic dock	F	20	1	1	1	3
bog yellowcress	F	40	1	1	1	4
common fireweed	F	100	5	2	15	23
few-flower meadowrue	F	20	1	1	1	3
horsetail	F	100	12	3	20	34
larkspur-leaf monkshood	F	60	1	1	1	6
marsh grass-of-parnassus	F	60	1	1	1	5
marsh willowherb	F	20	1	1	1	3
northern bedstraw	F	60	1	1	1	7
northern blackberry	F	60	2	1	5	11
speedwell	F	20	1	1	1	3
starwort	F	40	1	1	1	4
tall Jacob`s-ladder	F	60	3	1	7	13
tall bluebells	F	100	16	4	40	40
tall larkspur	F	20	1	1	1	3
water horsetail	F	20	1	1	1	3
blue grass	G	80	15	3	50	34
bluejoint reedgrass	G	80	39	15	60	56
melic grass	G	20	5	5	5	10
narrow false oat	G	40	1	1	1	5
polar grass	G	60	5	1	10	18
rough bent	G	80	2	1	4	11
rush	G	20	1	1	1	3
sedge	G	80	1	1	3	10
short-awn foxtail	G	20	1	1	1	4
slender wheatgrass	G	20	7	7	7	12
vanilla grass	G	80	6	2	10	22
water sedge	G	40	2	1	3	9
wheatgrass	G	80	11	1	20	30
Moss layer	M	60	4	1	5	14
Litter and mulch	B	100	50	5	85	71
Woody litter (>1" dia.)	B	20	2	2	2	6

Salix spp. includes: SABA3 SAMO2 SAPL2

Ecological Site: 172Xy201AK - Loamy Flood Plains, Moderately Wet
Cover type: Tall feltleaf willow scrub
Seral status: early
Number of stands: 4
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

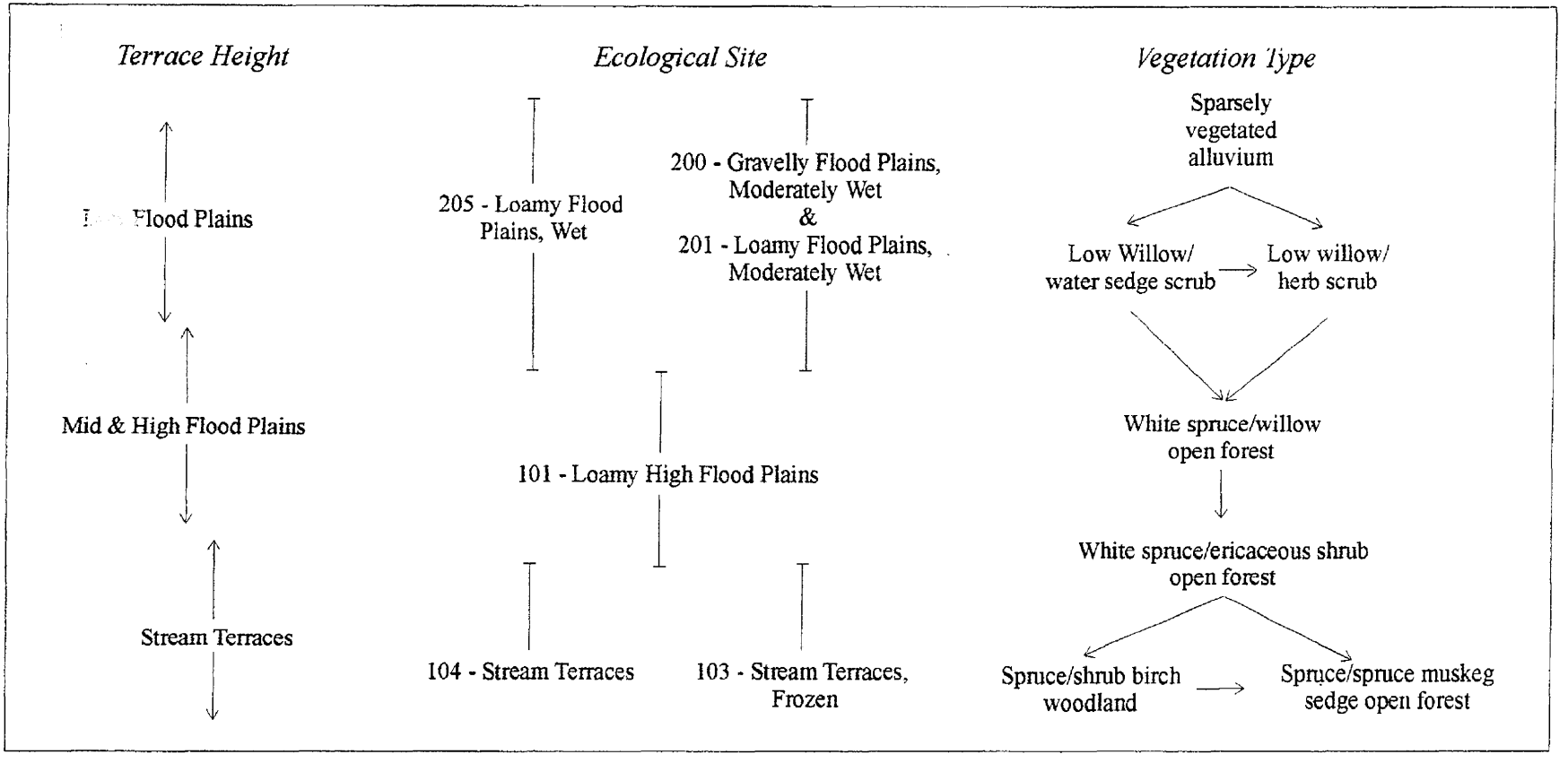
Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T3	50	1	1	2	8
bog blueberry	SS	50	2	2	2	10
feltleaf willow	SS	100	30	20	50	55
shrubby cinquefoil	SS	50	8	1	15	20
willow	SS	100	50	20	70	71
Bodin's milkvetch	F	25	10	10	10	16
Sitka burnet	F	50	5	5	5	16
Tilesius' wormwood	F	50	1	1	1	6
alpine sweet-vetch	F	75	2	1	3	11
arctic aster	F	75	1	1	1	8
cloudberry	F	25	1	1	1	5
common fireweed	F	50	5	1	10	16
felwort	F	50	7	3	10	18
few-flower meadowrue	F	25	1	1	1	4
fleabane	F	25	1	1	1	4
gentian	F	25	1	1	1	4
horsetail	F	100	8	2	20	28
larkspur-leaf monkshood	F	25	2	2	2	7
marsh cinquefoil	F	25	10	10	10	16
marsh grass-of-parnassus	F	50	5	3	7	16
milk-vetch	F	25	2	2	2	7
northern bedstraw	F	25	1	1	1	4
northern blackberry	F	75	7	2	15	22
tall Jacob`s-ladder	F	50	4	3	5	14
tall bluebells	F	25	5	5	5	11
valerian	F	25	1	1	1	5
wintergreen	F	75	1	1	1	6
blue grass	G	25	2	2	2	7
bluejoint reedgrass	G	100	23	10	40	47
polar grass	G	50	5	5	5	16
rough bent	G	25	1	1	1	4
sedge	G	50	3	1	5	12
vanilla grass	G	25	1	1	1	4
water sedge	G	25	3	3	3	9
Moss layer	M	100	18	1	50	42
Lichen layer	L	25	1	1	1	4
Bare soil	B	50	1	1	1	5
Litter and mulch	B	100	49	1	80	70
Rock fragments	B	25	1	1	1	4
Surface water	B	25	1	1	1	4
Woody litter (>1" dia.)	B	75	5	5	5	19

Salix spp. includes: SABA3 SALIX SAPL2

Ecological Site: 172Xy201AK - Loamy Flood Plains, Moderately Wet
Cover type: White spruce/willow open forest
Seral status: post-PNC
Number of stands: 2
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	50	40	40	40	45
white spruce	T2	50	20	20	20	32
bog blueberry	SS	50	1	1	1	7
feltleaf willow	SS	100	15	10	20	39
red bearberry	SS	50	1	1	1	7
russet buffalo-berry	SS	100	4	3	4	19
shrubby cinquefoil	SS	50	5	5	5	16
willow	SS	100	26	6	45	50
Tilesius' wormwood	F	100	1	1	2	11
alpine sweet-vetch	F	100	4	3	4	19
cloudberry	F	50	2	2	2	10
common fireweed	F	50	1	1	1	7
horsetail	F	50	85	85	85	65
marsh grass-of-parnassus	F	50	1	1	1	5
northern bedstraw	F	50	1	1	1	5
single delight	F	50	1	1	1	5
tall bluebells	F	100	2	1	2	12
violet	F	50	1	1	1	5
bluejoint reedgrass	G	50	45	45	45	47
Moss layer	M	100	22	3	40	46
Lichen layer	L	100	3	1	5	17
Bare soil	B	50	1	1	1	5
Litter and mulch	B	100	6	2	10	24

Salix spp. includes: SABA3 SAPL2

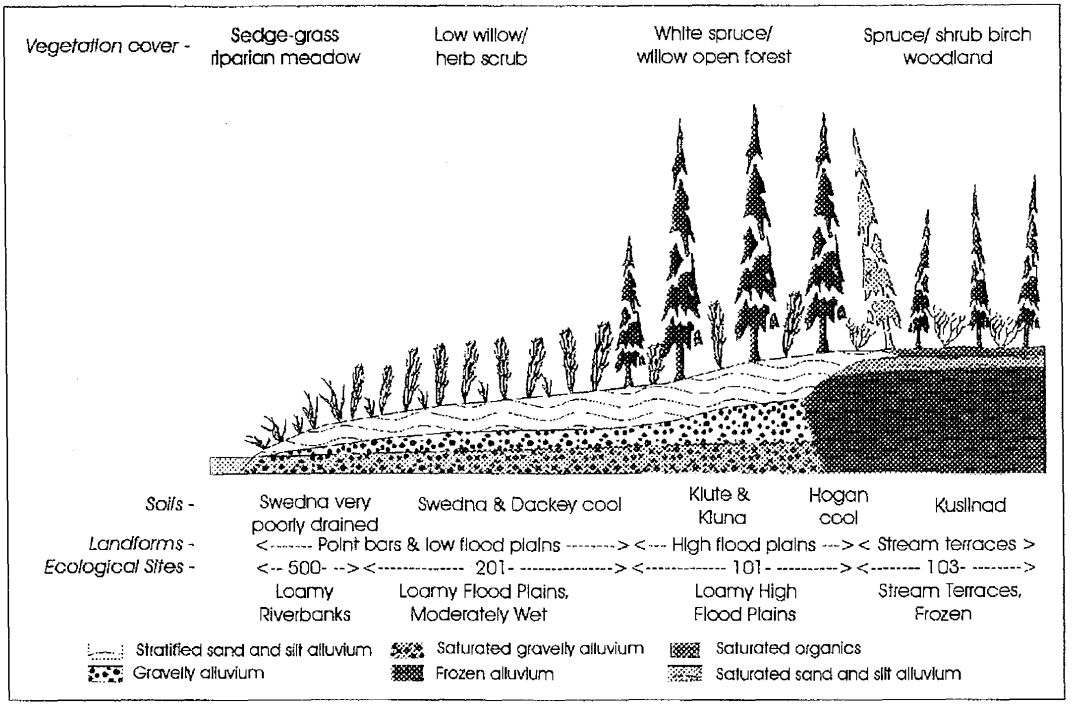


General relationships between terrace height, ecological sites, and vegetation types in the willow zone, Gulkana River Area, Alaska.

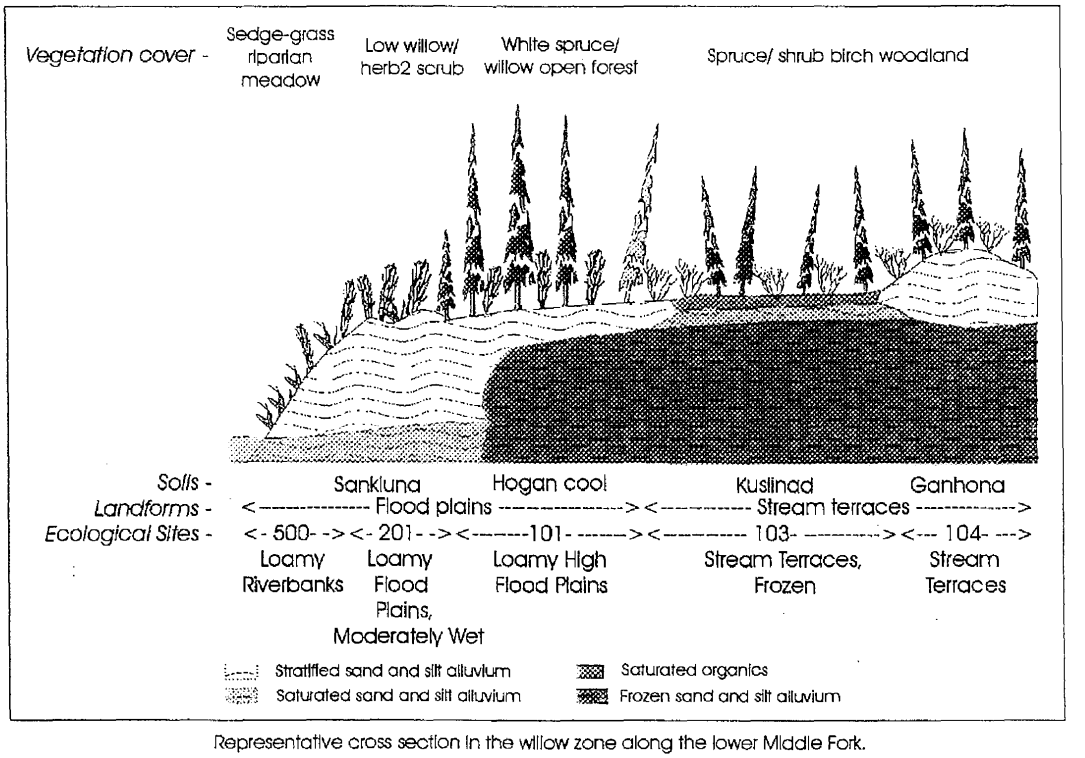
Selected physical properties for typical stages of site progression on flood plains and stream terraces in the willow zone, Gulkana River Area, Alaska.

Ecological Site (stage)	Cover Type(s)	Terrace Height avg(rge)	Flooding Frequency	Depth to SSK avg(rge)	Thickness of OM avg(rge)	Depth to Water Table: Pedons w/ <60"	Depth to Water Table: Depth when <60" avg(rge)	Depth to Permafrost: Pedons w/ <60"	Depth to Permafrost: Depth when <60" avg(rge)
		-- ft --		-- in --	-- in --	-- % --	-- in --	-- % --	-- in --
205 - Loamy Flood Plains, Wet	SALIX/CAAQ	2 (1-5)	freq-occas	17 (0-42)	4 (1-10)	100	13 (0-30)	0	-
200 - Gravelly Flood Plains, Moderately Wet	SALIX/herb	3 (2-4)	occas-freq	28 (3-60)	1 (0-3)	100	28 (12-44)	0	-
201 - Loamy Flood Plains, Moderately Wet	SALIX/herb	3 (1-8)	occas-freq	25 (9-50)	1 (0-6)	79	36 (32-45)	0	-
	SALIX/herb2	7 (4-12)	occas	60 (58-60)	1 (0-1)	12	46 (46-60)	0	
101 - Loamy High Flood Plains (PNC)	PIGL/SALIX	6 (3-15)	occas-rare	27 (3-60)	2 (0-7)	39	40 (31-58)	24	33 (17-49)
101 - Loamy High Flood Plains (post-PNC)	PIGL/erica	9 (4-25)	rare-none	30 (12-60)	4 (0-10)	21	35 (8-50)	54	29 (6-52)
104 - Stream Terraces (mid to late seral)	PICEA/BEGL	11(6-25)	rare-none	30 (18-60)	4 (1-9)	9	31 (16-40)	27	36 (18-55)
103 - Stream Terraces, Frozen (PNC)	PICEA/CALU2	9 (4-20)	rare-none	30 (18-60)	7 (2-12)	100	8 (0-23)	100	15 (0-25)

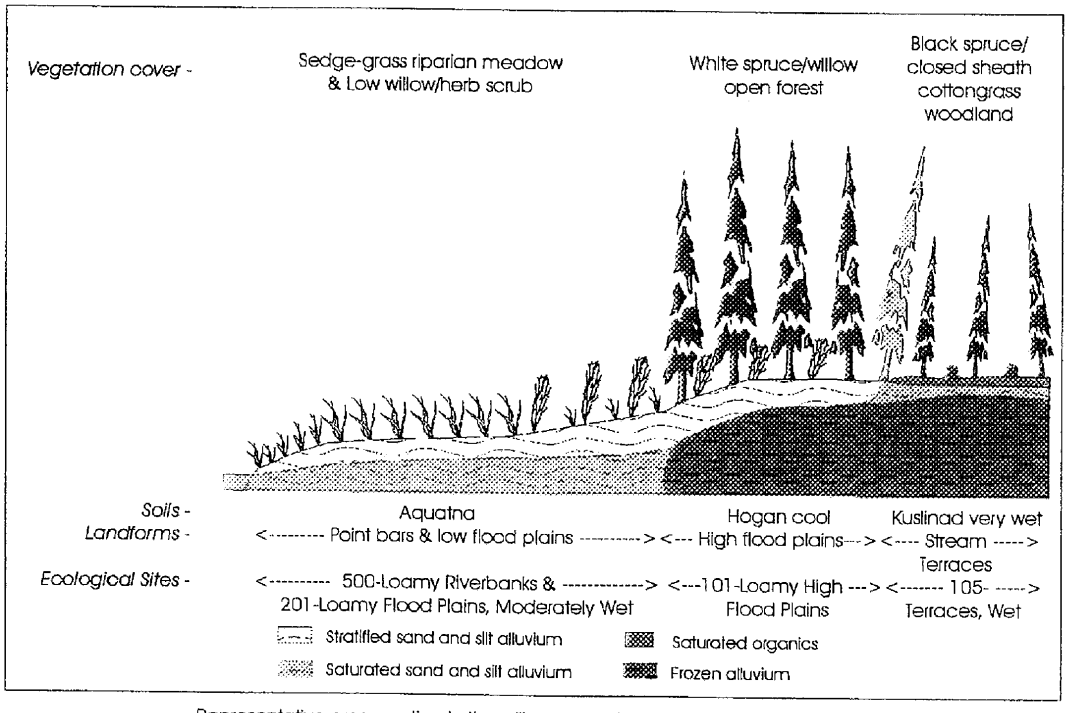
Notes:
Terrace height - estimated height of flood plain or stream terrace surface above the mid summer channel level.
Depth to SSK - depth to sandy skeletal alluvium below the mineral soil surface in pedons without permafrost or in which the permafrost level was below the SSK contact; measured in the soil pit.
Thickness of OM - thickness of the surface organic mat; measured in the soil pit.
Depth to Water Table and Permafrost - Pedons w/ <60": pedons in which a water table or permafrost was present within 60 inches below the mineral surface. Depth when <60": depth below the mineral surface when present; measured in the soil pit.



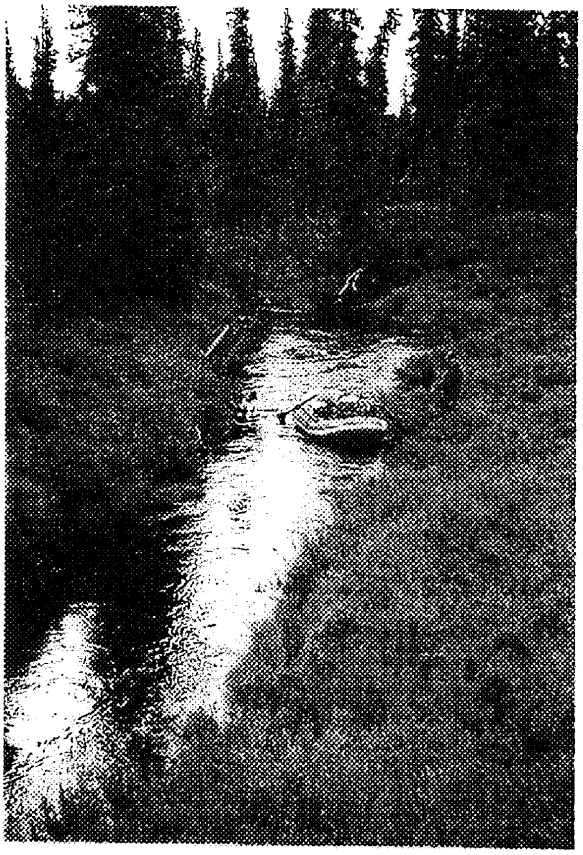
Representative cross section in the willow zone along the upper Main Stem.



Representative cross section in the willow zone along the lower Middle Fork.



Representative cross section in the willow zone along the upper South Branch.



Representative setting of ecological site 172Xy201AK - Loamy Flood Plains, Moderately Wet on low to high flood plains adjacent to the stream channel. The Dackey cool soils on this site support Low willow/herb scrub vegetation. Ecological site 172Xy103AK - Stream Terraces, Frozen occurs on stream terraces back from the channel.

Shallow Drainages
172Xy202AK

Standard Site Description

Site Number: 172Xy202AK
Site Name: Shallow Drainages
Plant Name: BEGL-SAPL2/CAAQ
Date: 4/98
Initials (Author's/Agency): DRK, MHC / USDA NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____

(3) Typical Location:

Legal: SE 1/4; SW 1/4; SW 1/4: Sec. 07 T. 12N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: glaciolacustrine terraces, stream terraces
(b) Specific: drainageways, margins of depressions
(c) Microrelief: concave, _____
(2) Elevation/Aspect:
Low 1950 / All High 2900 / All
(3) Slope: Low: 0 % High 3 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed	Materials: Bank	Entrenchment Ratio of Floodplain width:bankfull width
1.			
2.			
3.			
4.			
5.			

A) Confined (1.0 - 1.5)
B) Moderately Confined (1.5 - 2.5)
C) Unconfined (2.5+)
D) Not Determined

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____
(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 90 (days)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.3	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	48	53	49	40	25	9	1	
LOW	-3	-1	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson, Alaska
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Typic Cryaquepts	fine loamy
(2)		
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: lacustrine, alluvium

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 1 (inches) Maximum 8 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 0	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: ochric Epipedon
(2) Thickness: Minimum 2 (inches) Maximum 8 (inches)

e. Surface Texture: L, SIL, SICL, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 12 (inches) Maximum 29 (inches)

h. AWC for Effective Plant Root Zone: Low .14 High .18 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 60 (inches) Maximum — (inches)
(2) Average Thickness: — (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 60 (inches) Maximum - (inches)
(2) Average Thickness - (inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	4	5.6	7.3
Layers:	4	60	6.1	7.3
All Other Layers:				

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	W	W	W	W	W	W	F	F	F
4-10"				F						W		
10-20"					F						W	
20-40"												
40-60"	W	W	W	W	W							W

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 0 (Ft) Maximum 1 (Ft)
(2) Kind: apparent
(3) Month(s): Apr to Oct

q. Flooding:
(1) Frequency: occasional
(2) Duration: brief
(3) Months: Apr to Oct

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	0 - 15	4 - 30
Shrubs	40 - 90	2 - 5
Grasses, Grass Like, & Forbs	50 - 80	1 - 3
Cryptogams	20 - 65	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	5 - 40	_____ - _____
P	1 - 15	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) 0 - 40 ft²

Symbol	Common Name	Site Index	Ft³/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PICEA	spruce	-	-	0-15	100-100	
		-	-	-	-	
		-	-	-	-	
		-	-	-	-	
		-	-	-	-	

Site Index References:

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - ____ - ____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
* SALIX	willow		20-65	-	-	
BEGL	shrub birch		5-55	-	-	
VAUL	bog blueberry		4-30	-	-	
POFR4	shrubby cinquefoil		0-10	-	-	
LEDUM	Labrador tea		1-5	-	-	

Other ..... - NTE ea

SAREZ	net vein willow	0-15
CHCAZ	leatherleaf	0-5

* includes primarily SAPL2 and often SAMO2

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CAAQ	water sedge		20 - 85	___-___	___-___	
ERIOP	cottongrass		0 - 3	___-___	___-___	
CACA4	bluejoint reedgrass		0 - 5	___-___	___-___	
ARLA2	polargrass		0 - 10	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
POPA14	marsh cinquefoil		0 - 25	___-___	___-___	
* EQUIS	horsetail		0 - 15	___-___	___-___	
			___-___	___-___	___-___	
EPAN2	common fireweed		0 - 2	___-___	___-___	
RUCH	cloudberry		0 - 2	___-___	___-___	

Other ..... ___-___NTE___ea

POAC tall jacobi-ladder 0-1

SWPE felwort 0-1

PEFR4 arctic sweet coltsfoot 0-10

* includes E. fluviatile, E. arvense, E. hymale, and probably others.

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	0 - 1	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total bryophytes	20 - 65	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		9
Late (Good)		
Mid (Fair)		
Early (Poor)		

e. Vegetation Narrative:

5. Wildlife

a. Species List:

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	LLR	Ewan

172Xy202AK - Shallow Drainages

Low shrub birch-willow/water sedge scrub

Part A: Description of Site

1.c. Landscape Narrative: This site consists of shallow, poorly defined drainages and upper margins of topographic depressions on glaciolacustrine uplands and occasionally on stream terraces. Slopes range from 0 to 8 percent. Elevation is generally 1850 to 2900 feet (564 to 884 m). Landscape position and soil hydrology and wetness appear to be the most important landscape features effecting this site.

This site is of minor occurrence throughout the Gulkana River area. It probably can be found on similar landscapes elsewhere in Copper River basin also.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: In most places, the soils on this site are formed in loamy lacustrine deposits and alluvium. Surface organic mat ranges from 1 to 9 inches (2 to 23 cm). Standing and slow flowing water on the surface persists most of the growing season and the soils are poorly to very poorly drained. A reduced matrix and reduction mottles are found throughout the mineral portion of the soil to 60 inches 152 cm) or more.

4.e. Vegetation Narrative: Low shrub birch-willow/water sedge scrub is the correlated PNC on this site.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): The composition of the vegetation on this site varies considerably. All stands are dominated by a low shrub layer, however, shrub composition ranges from nearly pure willow to mixed stands dominated by shrub birch. Stunted trees are common in most stands, occasionally forming a low woodland canopy. Wild fire is not likely to significantly impact this site due to persistently wet soils. Low shrub birch-willow/water sedge scrub would be expected to regenerate directly following a fire.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy107AK - Glaciolacustrine Uplands, Frozen

172Xy106AK - Glaciolacustrine Uplands

b. Riparian or Wetland:

172Xy105AK - Terraces, Wet

172Xy501AK - Wet Depressions

8. List of Competing Sites (number and names):

172Xy501AK - Wet Depressions: lower slope position and concave bottoms of shallow depressions, along the shore of ponds and lakes, and in abandoned stream channels and sloughs; organic soils; Sedge wet meadow vegetative potential.

172Xy205AK - Loamy Flood Plains, Wet: flood plains; soils formed in stratified fine textured alluvium over gravelly and sandy alluvium; Low willow/water scrub vegetative potential.

172Xy202AK - Shallow Drainages
Low shrub birch-willow/water sedge scrub

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables for seral stages.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy202AK - Shallow Drainages
Cover type: Low shrub birch-willow/water sedge scrub
Seral status: PNC
Number of stands: 6
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

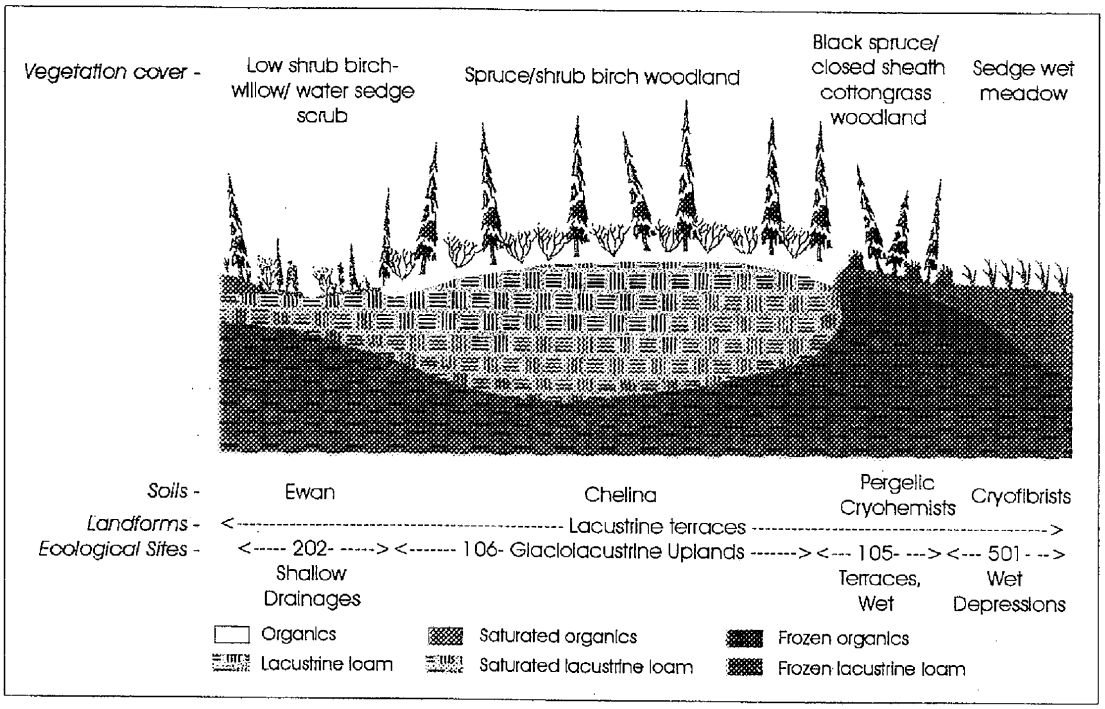
Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	17	3	3	3	7
white spruce	T2	17	1	1	1	3
black spruce	TX	17	2	2	2	6
white spruce	TX	17	3	3	3	7
black spruce	T3	17	5	5	5	9
white spruce	T3	67	1	1	2	9
Labrador-tea	SS	100	3	1	5	16
black crowberry	SS	33	1	1	1	5
bog blueberry	SS	100	11	4	30	33
leatherleaf	SS	17	5	5	5	9
lowbush cranberry	SS	50	1	1	2	8
net vein willow	SS	33	9	3	15	17
red bearberry	SS	17	1	1	1	3
shrub birch	SS	100	28	5	55	52
shrubby cinquefoil	SS	67	4	1	10	17
small cranberry	SS	67	1	1	1	6
willow	SS	100	43	20	65	65
Canadian bunchberry	F	17	1	1	1	4
anemone	F	17	1	1	1	3
arctic dock	F	17	1	1	1	3
arctic sweet coltsfoot	F	50	5	1	10	16
cloudberry	F	17	2	2	2	6
common fireweed	F	17	2	2	2	6
dock	F	17	1	1	1	3
dwarf scouring-rush	F	17	1	1	1	3
felwort	F	17	1	1	1	4
horsetail	F	67	4	1	15	17
larkspur-leaf monkshood	F	17	1	1	1	4
marsh cinquefoil	F	33	14	3	25	22
northern blackberry	F	50	1	1	1	5
serpent-grass	F	17	1	1	1	3
tall Jacob`s-ladder	F	33	1	1	1	4
tall bluebells	F	17	1	1	1	3
violet	F	17	1	1	1	3
water horsetail	F	17	10	10	10	13
bluejoint reedgrass	G	33	4	3	4	11
cottongrass	G	50	1	1	3	8
polar grass	G	33	1	1	1	5
rough fescue	G	17	1	1	1	3
sedge	G	50	33	20	50	41
water sedge	G	50	43	10	85	47
Moss layer	M	100	43	20	65	66
Lichen layer	L	83	1	1	1	6
Bare soil	B	67	1	1	2	8
Litter and mulch	B	100	11	1	40	34
Surface water	B	100	12	1	30	35
Woody litter (>1" dia.)	B	50	7	5	10	19

Salix spp. includes: SAMO2 SAPL2

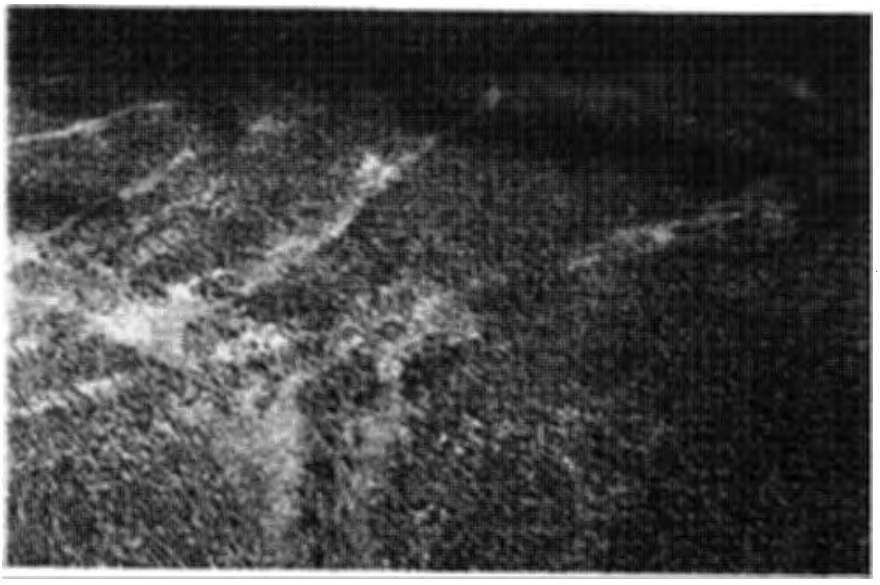
Ecological Site: 172Xy202AK - Shallow Drainages
Cover type: Spruce/water sedge woodland
Seral status: similar_to_PNC
Number of stands: 3
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T1	33	10	10	10	18
spruce	T2	33	30	30	30	32
white spruce	TX	33	10	10	10	18
black spruce	T3	33	5	5	5	13
Labrador-tea	SS	67	3	1	5	14
black crowberry	SS	33	3	3	3	10
bog blueberry	SS	100	4	2	5	19
leatherleaf	SS	67	1	1	1	8
lowbush cranberry	SS	33	3	3	3	10
red bearberry	SS	33	3	3	3	10
shrub birch	SS	100	21	3	35	46
shrubby cinquefoil	SS	33	10	10	10	18
small cranberry	SS	33	1	1	1	4
willow	SS	100	32	25	40	56
Labrador lousewort	F	33	1	1	1	4
anemone	F	33	1	1	1	4
arctic dock	F	33	2	2	2	8
arctic sweet coltsfoot	F	67	3	1	5	14
cloudberry	F	67	2	1	3	11
horsetail	F	100	15	1	41	39
marsh cinquefoil	F	67	6	2	10	20
marsh willowherb	F	33	3	3	3	10
marsh-marigold	F	33	1	1	1	4
northern golden-saxifrage	F	33	1	1	1	4
single delight	F	33	1	1	1	4
starwort	F	33	2	2	2	8
wintergreen	F	33	1	1	1	4
polar grass	G	67	7	4	10	22
russet sedge	G	33	3	3	3	10
sedge	G	33	1	1	1	4
tall cottongrass	G	33	20	20	20	26
water sedge	G	100	50	40	60	71
Moss layer	M	100	33	5	50	58
Lichen layer	L	33	1	1	1	4
Bare soil	B	67	11	1	20	26
Litter and mulch	B	100	10	1	15	32
Surface water	B	100	27	2	50	52
Woody litter (>1" dia.)	B	67	1	1	1	6

Salix spp. includes: SAPL2



Representative cross section in the glaciolacustrine uplands above the Main Stem.



Ecological site 172Xy201AK - Shallow drainages commonly occurs as shallow, weakly developed drainageways throughout glaciolacustrine uplands. Low shrub birch-willow/water sedge scrub on this site contrasts sharply with the surrounding spruce woodlands and open forest.

Upper Mountain Slopes, Shallow
172Xy203AK

Standard Site Description

Site Number: 172XY203AK
Site Name: Upper Mountain Slopes, Shallow
Plant Name: BEGL
Date: 4/98
Initials (Author's/Agency): DRK, MHC / USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

a. **Geographic Location:**

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River

(3) Typical Location:

Legal: SE 1/4; NE 1\4; SW 1\4; Sec. 08 T. 12N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: Mountains
(b) Specific: crests, shoulders
(c) Microreiief: convex, _____
(2) Elevation/Aspect:
Low 2700 / All _____ High 3600 / All _____
(3) Slope: Low: 0 % High 30 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width	
1.								A) Confined (1.0 - 1.5)
2.								B) Moderately Confined (1.5 - 2.5)
3.								C) Unconfined (2.5+)
4.								D) Not Determined
5.								

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
____	____	____	____	____	____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maximum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson AK
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Lithic Cryochrepts	loamy skeletal, mixed
(2)	Lithic Cryumbrepts	loamy mixed
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: glacial till over bedrock

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 1 (inches) Maximum 5 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 10
Cobbles	Low 0	High 10	Channers	Low 0	High 0
Stones	Low 0	High 10	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: ochric Epipedon
(2) Thickness: Minimum 1 (inches) Maximum 4 (inches)

e. Surface Texture: SiL, L, MK-SiL, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 10 (inches) Maximum 20 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 6 (inches) Maximum 10 (inches)

h. AWC for Effective Plant Root Zone: Low .13 High .20 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 1 (inches) Maximum 4 (inches)
(2) Average Thickness: _____(inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 1 (inches) Maximum 4 (inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (Ph) Low	Amount (Ph) High
Surface Layers:	0	2	4.5	7.0
Layers:	2	10	5.1	6.5
All Other Layers:	10	60	–	–

m. Salinity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (mmhos/cm) Low	Amount (mmhos/cm) High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Depth Range (Inches) Maximum	Amount (SAR) Low	Amount (SAR) High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	W	W	M	M	M	F	F	F	F
4-10"	↓	↓	↓	F	F	↓	↓	↓	M	M	↓	↓
10-20"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	M	↓
20-40"	D	D	D	D	D	D	D	D	D	D	D	D
40-60"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 60 (Ft) Maximum 60 (Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: None
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	0 - 10	5 - 15
Shrubs	50 - 85	3 - 5
Grasses, Grass Like, & Forbs	1 - 15	.5 - 2
Cryptogams	30 - 90	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	5 - 60	_____ - _____
P	0 - 5	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL	white spruce	__-__	____-____	5-10	__-__	_____
BEPA	paper birch	__-__	____-____	0-1	__-__	_____
POTR5	quaking aspen	__-__	____-____	0-1	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____
_____	_____	__-__	____-____	__-__	__-__	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIGL	white spruce	_____	0-2	__-__	__-__	_____
BEGL	shrub birch	_____	40-60	__-__	__-__	_____
LEDUM	Labrador tea	_____	10-20	__-__	__-__	_____
SAPL2	diamondleaf willow		0-20	__-__	__-__	_____
VAUL	bog blueberry	_____	5-30	__-__	__-__	_____

Other ..... __-__NTE__ea

VAVI lowbush cranberry 1-10

EMNI black crowberry 0-5

CATE11 arctic mountain-heather 0-5

_____ _____

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CACA4	bluejoint reedgrass		0-5	___-___	___-___	
CAREX	sedge		0-5	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
COCA13	bunchberry dogwood		1-5	___-___	___-___	
LYCOP2	clubmoss		0-10	___-___	___-___	
LIBO3	American twin flower		___-___	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	0 - 15	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total bryophytes	30 - 85	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	1
Late (Good)	_____	_____
Mid (Fair)	_____	_____
Early (Poor)	_____	_____

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
619	AL2	Cobblank cool
"	SA3	Goodview

172Xy203AK - Upper Mountain Slopes, Shallow

Low shrub birch scrub

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on bedrock cored mountain slopes and summits above about 2700 feet (823 m) elevation. Most areas have been smeared with a thin mantle of loamy till and lacustrine deposits. Slopes range from 0 to 30 percent.

In the Gulkana River area, this site is of minor occurrence in a few scattered locations above the Middle Fork and upper Main Stem. It is probably extensive at middle elevations throughout the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 18 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The moderately well developed soils on this site have a mantle of silty eolian material 1 to 4 inches (2 to 10 cm) thick over very gravelly and very cobbly loamy till and loamy lacustrine material. Bedrock is at depths of 10 to 20 inches in most places. The soils are well drained.

4.e. Vegetation Narrative: Low shrub birch scrub is the correlated PNC on this site.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Wildfire, which is common in the boreal forest zone of the Copper River Plateau, periodically impacts this site. The occurrence and abundance of charred snags and woody litter in some sample stands suggests that scattered small trees are probably found throughout the PNC at lower elevations. Following wildfire, the vegetation on this site would be expected to go through a relatively short-lived stage codominated by herbs and shrub sprouts. This stage would lead directly to scrub vegetation similar to the PNC.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy106AK - Glaciolacustrine Uplands

172Xy109AK - Mountain Slopes, Shallow

b. Riparian or Wetland:

8. List of Competing Sites (number and names):

172Xy106AK - Glaciolacustrine Uplands: lacustrine terraces and till plains below 2700 feet (823 m) elevation; deep soils; Spruce/shrub birch woodland vegetative potential, however, in many areas seral Low shrub birch scrub is found.

172Xy109AK - Mountain Slopes, Shallow: lower elevation mountain slopes; similar soils; Spruce/shrub birch woodland vegetative potential, however, in many areas seral Low shrub birch scrub is found.

172Xy203AK - Upper Mountain Slopes, Shallow
Low shrub birch scrub

Part B. Interpretations for Use and Management of the Site

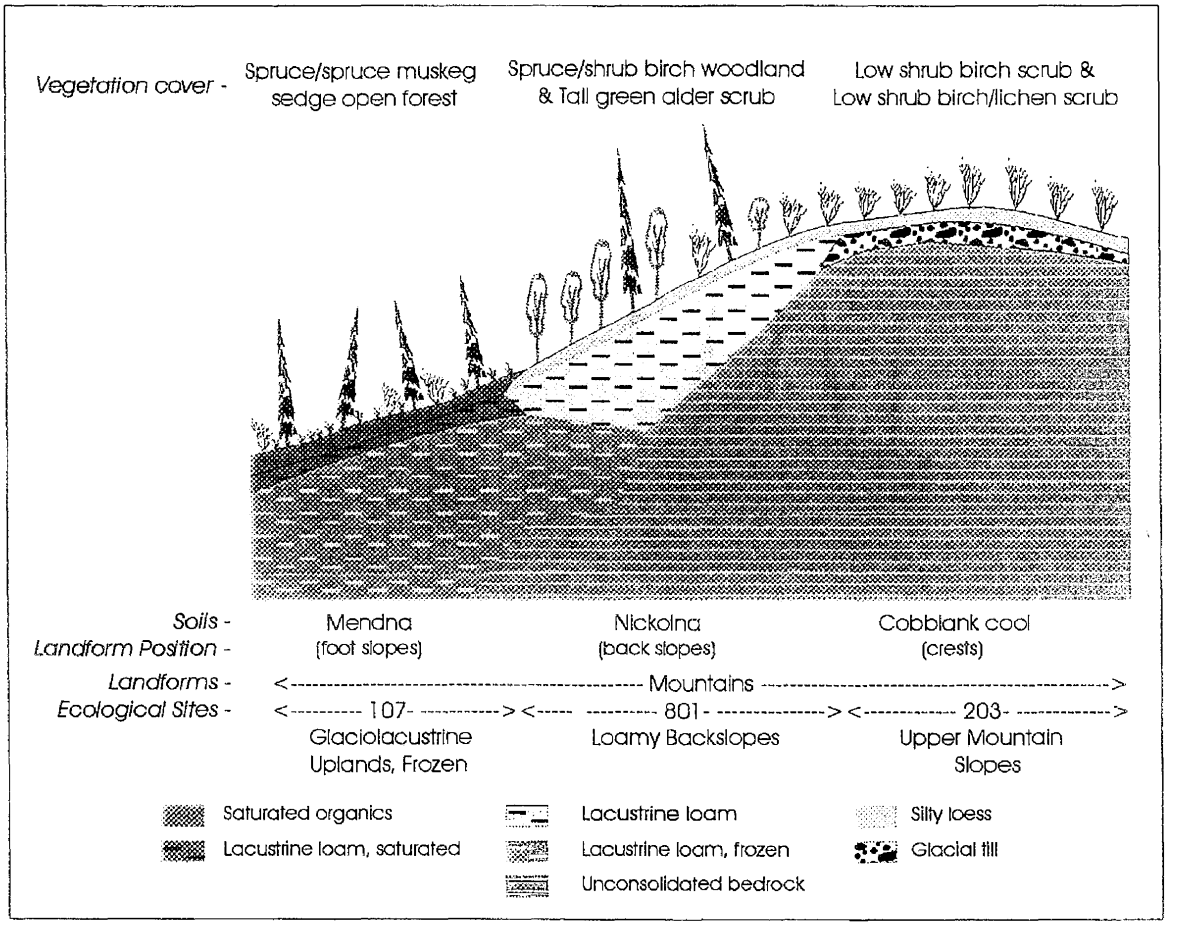
1.a. Plant Community Characteristics: see the attached summary table and diagrams for general characteristics of the PNC and site and relationships to adjoining sites.

1.k. Applicable Field Offices: BLM, Glennallen District Office

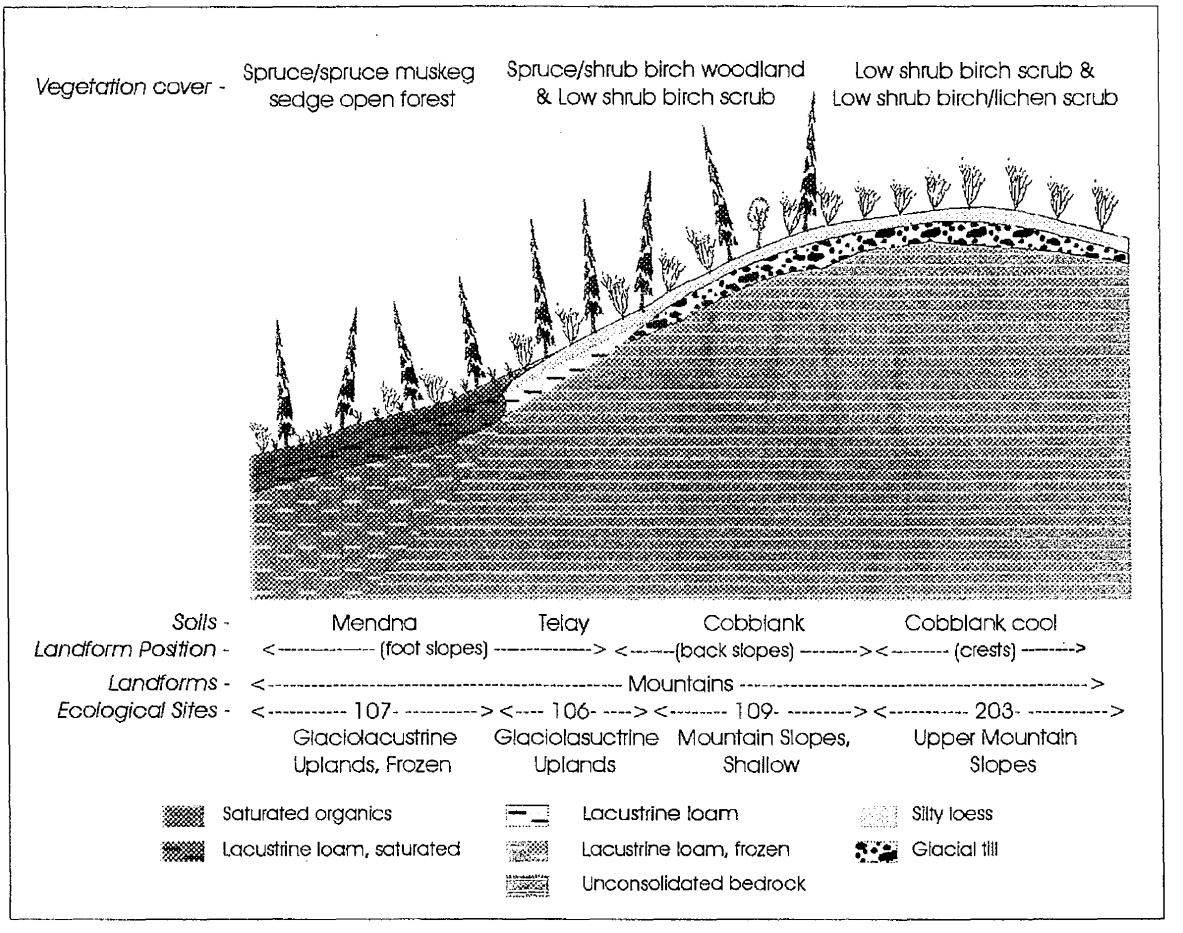
Ecological Site: 172Xy203AK - Upper Mountain Slopes, Shallow
Cover type: Low shrub birch scrub
Seral status: PNC
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T3	100	2	2	2	14
Labrador-tea	SS	100	20	20	20	45
black crowberry	SS	100	15	15	15	39
blueberry willow	SS	100	3	3	3	17
bog blueberry	SS	100	10	10	10	32
common juniper	SS	100	1	1	1	10
grayleaf willow	SS	100	4	4	4	20
leatherleaf	SS	100	2	2	2	14
lowbush cranberry	SS	100	5	5	5	22
net vein willow	SS	100	7	7	7	26
shrub birch	SS	100	35	35	35	59
willow	SS	100	3	3	3	17
Labrador lousewort	F	100	1	1	1	7
blue grass	G	100	1	1	1	7
cottongrass	G	100	1	1	1	7
sedge	G	100	1	1	1	10
Moss layer	M	100	20	20	20	45
Lichen layer	L	100	50	50	50	71
Bare soil	B	100	7	7	7	26
Litter and mulch	B	100	10	10	10	32
Rock fragments	B	100	10	10	10	32

Salix spp. includes: SAPL2



Representative cross section of mountains slopes above the upper Main Stem.



Representative cross section of mountains slopes above the upper Main Stem.

Gravelly and Sandy Hills
172Xy204AK

Standard Site Description

Site Number: 172Xy204AK
Site Name: Gravelly and Sandy Hills
Plant Name: BEGL/Lichen
Date: 4/98
Initials (Author's/Agency): DRK, MHC/USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

      (1) MLRA Name: Copper River Plateau
      (2) Local Area: Gulkana River, _____, _____

      (3) Typical Location:

      Legal: ____ 1/4; NW 1\4; SW 1\4: Sec. 12 T. 13N R. 05W Meridian Copper River
      Latitude: Deg. ____ Min. ____ Sec. ____
      Longitude: Deg. ____ Min. ____ Sec. ____
      UTM Coordinate: _____

   b. Physiography:

      (1) Landform:
         (a) Broad: glaciofluvial Uplands
         (b) Specific: pitted outwash plains and hills
         (c) Microreiief: rolling, _____
      (2) Elevation/Aspect:
         Low 2700 / All _____ High 3000 / All _____
      (3) Slope: Low: 0 % High 30 %

   c. Landscape Narrative:

   d. Associated Water Features:

      (1) Non-stream Characteristics:

         (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

         _____ _____ _____
         _____ _____ _____

         Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

         (b) Drawdown Characteristics (reserved)
         (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	____	____	____	____	____	____
2.	_____	____	____	____	____	____	____
3.	_____	____	____	____	____	____	____
4.	_____	____	____	____	____	____	____
5.	_____	____	____	____	____	____	____

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of floodplain width/bankfull width	
1.	___	___	___	___	___	___	___	A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___	B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___	C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___	D) Not Determined
5.	___	___	___	___	___	___		

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maximum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic, _____
b. Soil Temperature Regime: Cryic, _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28 °F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.2	.2	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson AK
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Typic Haplocryolls	sandy skeletal, mixed
(2)	Typic Cryochrepts	sandy, mixed
(3)		

b. Geologic Formation:
(1) Formation(s): _____
(2) Parent material: loess over glacial outwash.

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 0 (inches) Maximum 3 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 6	Boulders	Low 0	High 0
Cobbles	Low 0	High 5	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: _____ Epipedon
(2) Thickness: Minimum _____(inches) Maximum _____(inches)

e. Surface Texture: SiL _____, _____, _____, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 3 (inches) Maximum 16 (inches)

h. AWC for Effective Plant Root Zone: Low .02 High .23 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 2 (inches) Maximum 60 (inches)
(2) Average Thickness: _____(inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 8 (inches) Maximum 60 (inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches) Minimum	Maximum	Amount (Ph) Low	High
Surface Layers:	0	2	4.5	6.0
Layers:	2	8	5.1	6.0
All Other Layers:	8	60	5.6	6.5

m. Salinity:

	Depth Range (Inches) Minimum	Maximum	Amount (mmhos/cm) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Maximum	Amount (SAR) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	W	M	D	D	M	M	F	F	F
4-10"	↓	↓	↓	F	↓	M	D	↓	↓	D	↓	↓
10-20"	↓	↓	↓	↓	F	↓	M	↓	↓	M	D	↓
20-40"	↓	↓	↓	↓	M	↓	↓	↓	↓	↓	M	↓
40-60"	D	D	D	M	↓	↓	↓	↓	↓	↓	↓	D

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 6 (Ft) Maximum 6 (Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: None
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	0 - 2	7 - 15
Shrubs	40 - 75	.5 - 3.5
Grasses, Grass Like, & Forbs	2 - 15	.5 - 1.5
Cryptogams	50 - 75	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	1 - 20	_____ - _____
P	0 - 1	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL	white spruce	__-__	___-___	0-2	100-100	_____
____	_____	__-__	___-___	__-__	__-__	_____
____	_____	__-__	___-___	__-__	__-__	_____
____	_____	__-__	___-___	__-__	__-__	_____
____	_____	__-__	___-___	__-__	__-__	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
PIGL	white spruce	____	0-1	___-___	___-___	_____
BEGL	shrub birch	____	20-75	___-___	___-___	_____
LEDUM	Labrador tea	____	10-55	___-___	___-___	_____
VAUL	bog blueberry	____	5-25	___-___	___-___	_____
* SALIX	willow	____	0-10	___-___	___-___	_____

Other ..... ___-___NTE___ea

VAVI lowbush cranberry 2-15

EMNI black crowberry 0-15

ARRU red bearberry 0-7

_____ _____

* includes SAGL and SAPL2

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
FEAL	rough fescue		0-15	___-___	___-___	
CACA4	bluejoint reedgrass		0-3	___-___	___-___	
HIAL3	vanilla grass		0-1	___-___	___-___	
ARLA2	polar grass		0-1	___-___	___-___	
AGSC5	rough bent		0-1	___-___	___-___	

Other ..... ___-___NTE___ea

CAREX	sedge	0-5

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
LUAR2	arctic lupine		0-5	___-___	___-___	
PELA	Labrador lousewort		0-1	___-___	___-___	
ARAR9	boreal sagebrush		0-5	___-___	___-___	
EPILO	fireweed		0-1	___-___	___-___	
CALA7	Alaska bellflower		0-1	___-___	___-___	

Other ..... ___-___NTE___ea

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	20 - 70	____-____	____-____
_____	_____	_____-_____	____-____	____-____
_____	_____	_____-_____	____-____	____-____
_____	_____	_____-_____	____-____	____-____
_____	_____	_____-_____	____-____	____-____

Other..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total moss	5 - 30	____-____	____-____
_____	_____	_____-_____	____-____	____-____
_____	_____	_____-_____	____-____	____-____
_____	_____	_____-_____	____-____	____-____
_____	_____	_____-_____	____-____	____-____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	7
Late (Good)	_____	_____
Mid (Fair)	_____	_____
Early (Poor)	_____	_____

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	G01	Pippel High Elevation
"	"	Chistna High Elevation

172Xy204AK - Gravelly and Sandy Hills
Low shrub birch/lichen scrub

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on pitted outwash plains and hills formed in deep, sandy and gravelly glacial outwash. Sandy blowouts are common in some areas. Slopes range from 0 to about 30 percent. Elevation is 2750 to 3000 feet (838 to 914 m).

In the Gulkana River area, this site is of minor occurrence in the uplands around Dickey Lake. It continues for a number of miles to the west beyond the survey area and probably occurs elsewhere in the Copper River basin also.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The weakly to moderately well developed soils on this site have a mantle of silty eolian material 1 to 8 inches (2 to 20 cm) thick over very gravelly or sandy glaciofluvial material. The soils have low moisture holding capacity and are somewhat excessively drained.

4.e. Vegetation Narrative: Low shrub birch/lichen scrub is the correlated PNC on this site. On convex shoulders and summits of hills, Sparsely vegetated outwash appears to be potential.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): The soils and vegetation on this site are generally relatively dry, however, shrub cover is open to sparse with little cover of herbaceous vegetation in the understory. Susceptibility to fire is probably low. If burned, seral lichens and scattered herbs would be expected to dominate the post-fire vegetation.

7. List of Commonly Associated Sites (number and names):

a. Upland:

b. Riparian or Wetland:

8. List of Competing Sites (number and names):

172Xy108AK - Gravelly and Sandy Terraces: isolated strandline and outwash deposits on lacustrine terraces and high stream terraces; Spruce/lichen woodland vegetative potential.

172Xy204AK - Gravelly and Sandy Hills
Low shrub birch/lichen scrub

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see the attached summary tables and diagrams for seral stages and stand characteristics.

1.k. Applicable Field Offices: BLM, Glennallen District Office.

Ecological Site: 172Xy204AK - Gravelly and Sandy Hills
Cover type: Low shrub birch/lichen scrub
Seral status: PNC
Number of stands: 7
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	14	2	2	2	5
balsam poplar	T3	14	1	1	1	3
white spruce	T3	43	1	1	1	5
Labrador-tea	SS	100	29	10	55	54
alpine bearberry	SS	14	2	2	2	5
black crowberry	SS	86	5	1	15	20
bog blueberry	SS	100	15	5	25	39
grayleaf willow	SS	86	5	2	10	21
lowbush cranberry	SS	100	7	2	15	27
red bearberry	SS	57	3	1	7	14
shrub birch	SS	100	54	20	75	73
willow	SS	71	2	1	5	13
Alaska bellflower	F	29	1	1	1	4
Labrador lousewort	F	43	1	1	1	6
arctic lupine	F	57	2	1	5	11
boreal sagebrush	F	14	5	5	5	8
clubmoss	F	14	1	1	1	3
common fireweed	F	14	1	1	1	3
dwarf fireweed	F	14	1	1	1	4
gentian	F	14	1	1	1	3
ragwort	F	14	1	1	1	3
alpine sweet grass	G	29	1	1	1	5
bluejoint reedgrass	G	14	3	3	3	7
fescue	G	14	1	1	1	3
polar grass	G	14	1	1	1	3
rough bent	G	14	1	1	1	3
rough fescue	G	14	15	15	15	15
sedge	G	71	2	1	5	11
Moss layer	M	100	14	5	30	38
Lichen layer	L	100	42	20	70	65
Bare soil	B	43	5	2	10	14
Litter and mulch	B	100	7	1	20	27
Rock fragments	B	29	3	1	6	10

Salix spp. includes: SALIX SAPL2

Ecological Site: 172Xy204AK - Gravelly and Sandy Hills
Cover type: Low shrub birch scrub
Seral status: similar_to_PNC
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

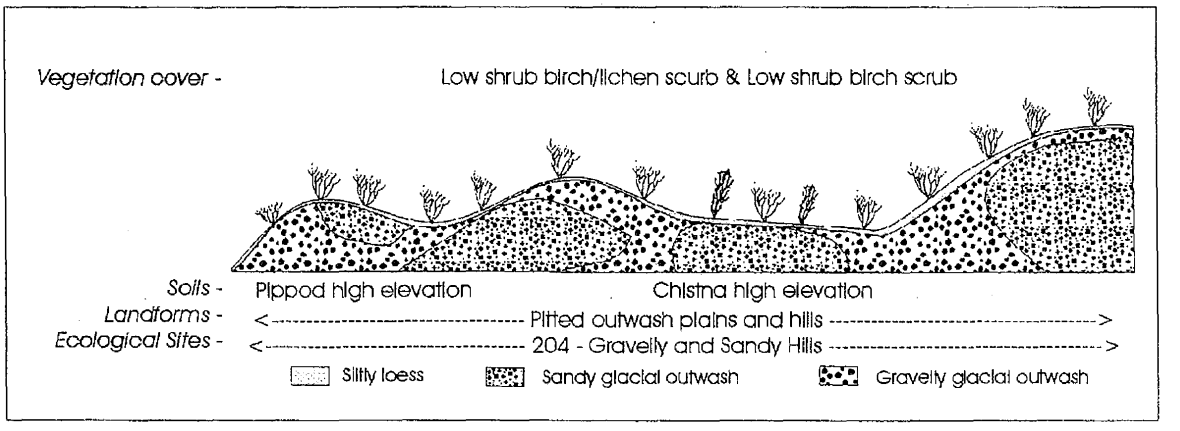
Common_name	Stratum	Con	Avg	Min	Max	Imp
Labrador-tea	SS	100	25	25	25	50
black crowberry	SS	100	1	1	1	7
bog blueberry	SS	100	5	5	5	22
grayleaf willow	SS	100	5	5	5	22
lowbush cranberry	SS	100	5	5	5	22
shrub birch	SS	100	85	85	85	92
willow	SS	100	1	1	1	7
Alaska bellflower	F	100	1	1	1	7
Labrador lousewort	F	100	1	1	1	7
clubmoss	F	100	1	1	1	7
Unknown grass	G	100	1	1	1	7
alpine sweet grass	G	100	3	3	3	17
spruce-muskeg sedge	G	100	1	1	1	7
Moss layer	M	100	50	50	50	71
Lichen layer	L	100	25	25	25	50
Litter and mulch	B	100	25	25	25	50

Salix spp. includes: SAPL2

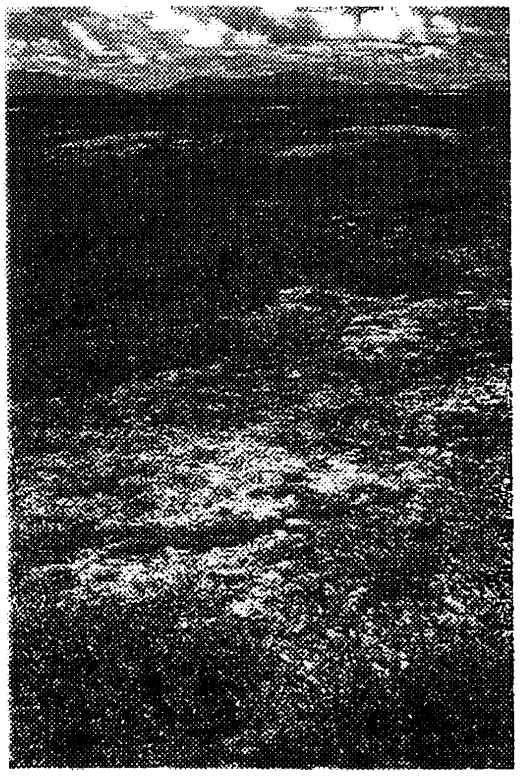
Ecological Site: 172Xy204AK - Gravelly and Sandy Hills
Cover type: Sparsely vegetated outwash
Seral status: PNC on convex shoulders and summits of hills
Source of data: Gulkana River Area

Description:

Sparsely vegetated outwash consists of patches of mosses and lichen and scattered dwarf shrub and herbs on gravelly and cobbly outwash deposits. Moss and lichen cover is generally less than 50 percent and vascular plant cover is less than 20 percent. Frequently occurring species identified on areas of Sparsely vegetated outwash include *Arctostaphylos alpina, Artemisa arctica, Betula glandulosa, Empetrum nigrum, Festuca altaica, Hierochloe alpina, Ledum decumbens, Pedicularis labradorica,* and *Vaccinium vitis-idaea.*



Representative cross section of pitted outwash plains and hills around Dickey Lake.



Typical setting of ecological site 172Xy204AK - Gravelly and Sandy Hills. Sparsely vegetated outwash dominated by patches of lichens and moss is common on hill summits and other convex microsites.

Loamy Flood Plains, Wet
172Xy205AK

Standard Site Description

Site Number: 172XY205AK
Site Name: Loamy Flood Plains, Wet
Plant Name: SALIX/CAAQ
Date: 1/98
Initials (Author's/Agency): DRK, MHC/USDA-NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River _____, _____,
_____

(3) Typical Location:

Legal: ____ 1/4; NW 1\4; SW 1\4; Sec. 05 T. 13N R. 04W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: flood plains
(b) Specific: low & mid _____, _____,
(c) Microrelief: plane _____, _____,
(2) Elevation/Aspect:
Low 2400 / All _____ High 2900 / All _____
(3) Slope: Low: 0 % High 5 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	____._____	____._____	____._____	____._____	____._____	____._____
2.	_____	____._____	____._____	____._____	____._____	____._____	____._____
3.	_____	____._____	____._____	____._____	____._____	____._____	____._____
4.	_____	____._____	____._____	____._____	____._____	____._____	____._____
5.	_____	____._____	____._____	____._____	____._____	____._____	____._____

	Materials Channel Bed			Materials Bank			Confinement Ratio of Floodplain width/bankfull width
1.	____	____	____	____	____	____	____ A) Confined (1.0 - 1.5)
2.	____	____	____	____	____	____	____ B) Moderately Confined (1.5 - 2.5)
3.	____	____	____	____	____	____	____ C) Unconfined (2.5+)
4.	____	____	____	____	____	____	____ D) Not Determined
5.	____	____	____	____	____	____	

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____._ to _____._

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-1	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson Alaska
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Typic Cryaquents	coarse loamy over sandy or sandy skeletal,
(2)		mixed, nonacid
(3)	Oxyaquic cryorthents	sandy skeletal, mixed, nonacid

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: Alluvium, _____

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 0 (inches) Maximum 10 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 1	Boulders	Low 0	High 0
Cobbles	Low 0	High 1	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Ochric Epipedon
(2) Thickness: Minimum 2 (inches) Maximum 10 (inches)

e. Surface Texture: FSL, SL, _____, _____

f. Soil Depth; (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 8 (inches) Maximum 22 (inches)

h. AWC for Effective Plant Root Zone: Low .02 High .18 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 11 (inches) Maximum 37 (inches)
(2) Average Thickness: >50 (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 11 (inches) Maximum 37 (inches)
(2) Average Thickness >50 (inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	31	6.1	7.8
Layers:	31	60	6.1	8.4
All Other Layers:				

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	W	W	W	M	M	W	F	F	F
4-10"	↓	↓	↓	F	↓	↓	W	W	↓	W	↓	↓
10-20"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓
20-40"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	W	W
40-60"	W	W	W	W	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 0 (Ft) Maximum 2 (Ft)
(2) Kind: apparent
(3) Month(s): May to Sep

q. Flooding:
(1) Frequency: Occasional
(2) Duration: long
(3) Months: Apr to Oct

r. Ponding
(1) Depth: Minimum ___ Maximum ___(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	0 - 1	6 - 20
Shrubs	25 - 75	2.5 - 6
Grasses, Grass Like, & Forbs	15 - 80	1.5 - 2.5
Cryptogams	10 - 90	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	5 - 70	_____ - _____
P	0 - 1	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIGL	white spruce	___-___	____-____	0-7	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
* SALIX	willow	_____	25-85	___-___	___-___	_____
POFR4	shrubby cinquefoil		0-15	___-___	___-___	_____
VAUL	bog blueberry	_____	0-20	___-___	___-___	_____
SARE2	net vein willow	_____	0-50	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

* includes SABA3, SAPL2, and occasionally SAMO2

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CAAQ	Water sedge		10-80	___-___	___-___	
CAREX	sedge		0-20	___-___	___-___	
CACA4	bluejoint reedgrass		0-15	___-___	___-___	
ARLA2	polargrass		0-2	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
RUAR	northern blackberry		0-15	___-___	___-___	
SWPE	fe/wort		0-7	___-___	___-___	
POPA4	marsh cinquefoil		0-25	___-___	___-___	
PAPAB	Marsh grass-of-parnassus		0-1	___-___	___-___	
RUAR6	arctic dock		0-8	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	0 - 10	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
Other			____-____	NTE____ea
_____	_____			
_____	_____			
_____	_____			
_____	_____			

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
Moss	total moss	10 - 90	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
Other			____-____	NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)		11
Late (Good)		
Mid (Fair)		
Early (Poor)		
drier microsites		6

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____ _____ _____ _____ _____
_____ _____ _____ _____ _____
_____ _____ _____ _____ _____
_____ _____ _____ _____ _____
_____ _____ _____ _____ _____
_____ _____ _____ _____ _____
_____ _____ _____ _____ _____
_____ _____ _____ _____ _____
_____ _____ _____ _____ _____
_____ _____ _____ _____ _____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	FP12	Tahoe Wet Frequently Flooded
	FP13	Sweedna high elevation
	FP21	
	FP22	
	FP13	Hisna

172Xy205AK - Loamy Flood Plains, Wet
Low willow/water sedge scrub

Part A: Description of Site

1.c. Landscape Narrative: This site consists of level to, on rare occasions, strongly sloping flood plains formed in stratified sandy and silty alluvium over very gravelly and cobbly alluvium along clear water rivers and streams. Terrace height above mean summer channel level is typically 3 feet (0.9 m) or less and the site is frequently to occasionally flooded. Throughout most of the growing season, the water table remains at or near the surface; ponded areas are common. Elevation is generally from 2400 to 2900 feet (732 to 884 m).

In the Gulkana River area, this site occurs primarily along the upper Middle Fork and in scattered locations along the Main Stem between Paxson Lake and the Middle Fork confluence and along the upper North Branch. This site likely occurs along low to moderate gradient reaches of other non-glacial streams and rivers elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is 1 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 18 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The weakly developed soils on this site have a mantle of stratified sandy and silty alluvium less than 10 to as much as 37 inches (25 to 94 cm) thick over very gravelly and cobbly alluvium. The surface organic mat ranges from 0 to occasionally as much as 13 inches (0 to 33 cm). Depth to seasonal high water table ranges from 0 to 18 inches (0 to 46 cm) and the soils are poorly to very poorly drained. During most years, the water table is at or near the surface during much of the growing season and ponded areas are common. Aquic conditions including redox depletions and/or a reduced matrix are present within 10 inches (25 cm) of the mineral surface.

4.e. Vegetation Narrative: Low willow/water sedge scrub is the correlated Potential Natural Plant Community on this site. This PNC is best characterized as a riparian association that develops and persists under a regime of nearly continuous fluvial disturbance. Microsites on slightly higher terrace positions and/or with better soil drainage support Low willow/herb scrub.

5.b. Wildlife Narrative: (BLM)

Beaver activity is extensive on this site. In many places, the shallow water table and ponded conditions appear to be partly if not entirely attributed to dam building. Often, the beaver dams themselves form the escarpment breaks between different terrace levels. Channels between ponds appear to maintained and possibly created by beavers.

At certain times of the year, this site undoubtedly provides excellent feeding habitat for moose. Willow in most stands is moderately hedged, primarily from winter browsing.

Sedges and other herbaceous vegetation are likely used to some extent in spring and early summer. Ducks, swans, and a variety of other birds use this site for feeding, nesting, hunting, and other activities.

6. Community Dynamics (Fire, etc.): This site occurs in areas on the flood plains that are consistently wet because of flooding, infiltration of ground water, shallow water table, and ponding associated with dam building by beavers. Soils include both those that are very shallow to gravel and cobble (Tangoe soils) as well as those with a moderately thick to thick surface layer of stratified sandy and silty alluvium (Swedna soils). The key factor appears to be the nearly continuous occurrence of the shallow water table. On slightly elevated or otherwise better drained microsites, *Carex aquatilis* decreases in abundance and is replaced by *Calamagrostis canadensis*, *Arctagrostis latifolia*, and other herbs common to the flood plains. Immediately adjacent to the river channel, beaver ponds, and other areas of ponded water, the willow shrub layer becomes more open and patchy and the vegetation is totally dominated by *Carex aquatilis* and other tall, bright green sedges.

This site probably is rarely burned by wild fire because of wet conditions. Even during the dry summer of 1994, a shallow water table and ponded conditions were found throughout this site. If the vegetation were burned, the willow and herbaceous cover would be expected to rapidly regeneration from sprouting by root crowns and other underground plant parts.

7. List of Commonly Associated Sites (number and names):

a. Upland:

b. Riparian or Wetland:

172Xy200AK - Gravelly Flood Plains, Moderately Wet

172Xy201AK - Loamy Flood Plains, Moderately Wet

172Xy500AK - Loamy Riverbanks

8. List of Competing Sites (number and names):

172Xy200AK - Gravelly Flood Plains, Moderately Wet: similar flood plain position but usually along moderate to steep gradient reaches of the stream; soils somewhat poorly drained and with a water table at 20 to 36 inches (51 91 cm); Low willow/herb scrub vegetative potential.

172Xy201AK - Loamy Flood Plains, Moderately Wet: similar flood plain position; soils poorly to moderately well drained and with a water table at 14 to 24 inches (36 to 61 cm); Low willow/herb scrub vegetative potential.

172Xy500AK - Loamy Riverbanks: similar flood plain position but typically immediately adjacent to the stream channel or shoreline of beaver ponds; soils frequently flooded, very poorly drained; and with a water table at less than 12 inches (30 cm); Sedge-grass riparian meadow vegetative potential.

172Xy205AK - Loamy Flood Plains, Wet
Low willow/water sedge scrub

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progressions:

(1) Aggradation: Based on observations and data collected in the Gulkana River area, this site is an early stage of site progression and vegetation succession on flood plains along low to moderate gradient stream channels. Channel migration and down-cutting, continued deposition of alluvium, or changes in subsurface drainage regimes will raise the effective height of the flood plain and reduce site wetness. Site progression would be expected to lead to 172Xy200AK - Gravelly Flood Plains, Moderately Wet or 172Xy201AK - Loamy Flood Plains, Moderately Wet and Low willow/herb scrub vegetation. Continued elevation of the terrace surface, reduced flooding, lowering of the water table, site stability, and vegetation succession would eventually lead to White spruce/willow open forest vegetation characteristic of ecological site 172Xy101AK - Loamy High Flood Plains and White spruce/willow open forest vegetation.

172Xy205AK - Loamy Flood Plains, Wet is closely related both geographically and ecologically with 172Xy500 - Loamy Riverbanks. As was described in *Part A.6 Community Dynamics*, these two sites usually occur adjacent to one another on the landscape. Site and vegetative characteristics between the two are gradational and to a degree somewhat arbitrary.

1.e. Insects and Disease Pests and Animal Damage: As described in *Part A.5.b Wildlife Narrative*, this site appears in places to develop or at least be maintained as a result of beaver activity and associated impacts on ponding and soil moisture. Reduced beaver activity to the extent that dams and water levels could not be maintained could lead to progression of this toward 172Xy200AK - Gravelly Flood Plains, Moderately Wet or 172Xy201AK - Loamy Flood Plains, Moderately Wet. Conversely, increased beaver activity that increases the degree or extent of ponding and soil moisture, could lead to additional areas of 172Xy500AK - Loamy Riverbanks.

1.g. Recreation and Natural Beauty: This site provides excellent opportunities for viewing wildlife during almost any season. In addition, the bright green vegetation in complex with the clear, blue water in beaver ponds and the river channel, provide outstanding scenic beauty during the summer. The scenic beauty would be equally appealing in fall when the willow and sedges have turned yellow and golden brown. Wetness during these seasons would restrict general access to areas of this site.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy205AK - Loamy Flood Plains, Wet
Cover type: Low willow/water sedge scrub
Seral status: PNC
Number of stands: 11
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

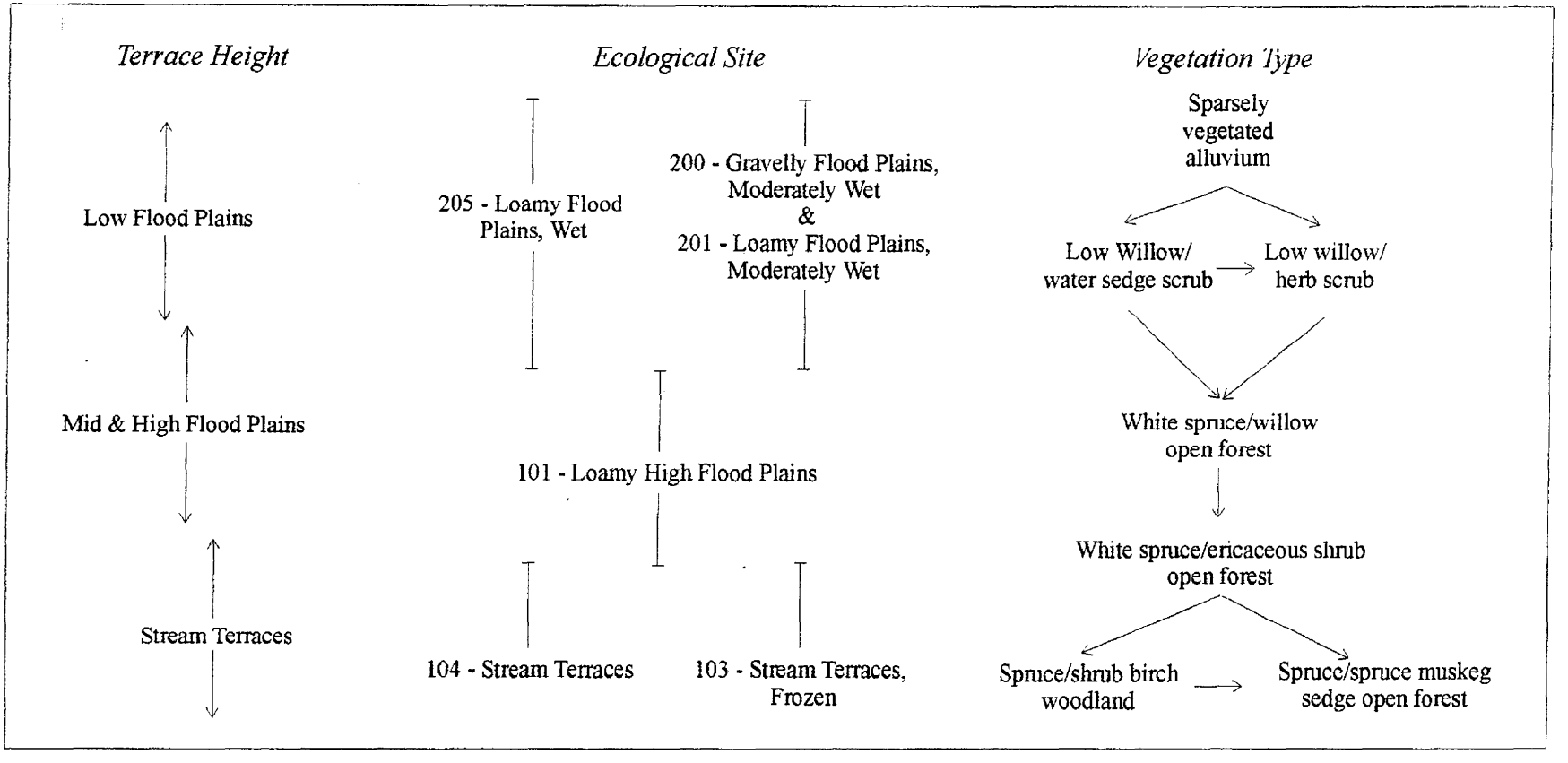
Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	27	3	1	7	9
white spruce	T3	27	6	1	15	12
blueberry willow	SS	18	1	1	1	4
bog blueberry	SS	64	8	1	20	23
net vein willow	SS	82	20	3	60	40
shrub birch	SS	18	4	1	7	8
shrubby cinquefoil	SS	91	7	1	15	25
willow	SS	100	69	25	85	83
anemone	F	27	1	1	1	4
arctic dock	F	45	4	1	8	14
arctic sweet coltsfoot	F	18	2	1	3	6
common fireweed	F	18	2	1	2	5
felwort	F	73	2	1	7	11
marsh cinquefoil	F	36	11	5	25	20
marsh grass-of-parnassus	F	64	1	1	1	6
northern blackberry	F	82	3	1	15	15
stonecrop	F	18	1	1	1	4
tall Jacob`s-ladder	F	73	1	1	2	8
valerian	F	27	1	1	2	5
blue grass	G	45	1	1	2	6
bluejoint reedgrass	G	64	5	1	15	19
polar grass	G	36	1	1	2	7
rush	G	18	1	1	1	3
sedge	G	36	19	1	60	26
water sedge	G	82	37	7	80	55
Moss layer	M	100	48	10	90	69
Lichen layer	L	91	4	1	10	18
Bare soil	B	36	2	1	5	9
Litter and mulch	B	100	29	1	70	54
Rock fragments	B	18	1	1	1	3
Surface water	B	82	9	1	35	27
Woody litter (>1" dia.)	B	36	3	1	7	10

Salix spp. includes: SABA3 SALIX SAPL2

Ecological Site: 172Xy205AK - Loamy Flood Plains, Wet
Cover type: Low willow/herb scrub
Seral status: PNC on drier microsites
Number of stands: 6
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	83	3	1	10	15
white spruce	T3	17	1	1	1	3
black crowberry	SS	33	1	1	1	5
blueberry willow	SS	17	2	2	2	6
bog blueberry	SS	83	8	1	15	26
feltleaf willow	SS	17	5	5	5	9
net vein willow	SS	83	8	2	15	25
red bearberry	SS	17	5	5	5	9
shrub birch	SS	50	2	1	3	9
shrubby cinquefoil	SS	100	10	7	15	32
willow	SS	100	82	75	91	91
Bodin's milkvetch	F	17	1	1	1	3
Canadian bunchberry	F	33	4	2	5	11
Sitka burnet	F	17	1	1	1	3
alpine sweet-vetch	F	33	5	2	7	12
anemone	F	50	3	1	7	12
common fireweed	F	33	1	1	1	5
cuckoo flower	F	17	1	1	1	3
felwort	F	83	3	1	5	14
horsetail	F	50	1	1	1	6
larkspur-leaf monkshood	F	33	1	1	1	4
marsh cinquefoil	F	17	2	2	2	6
marsh grass-of-parnassus	F	83	1	1	1	6
milk-vetch	F	33	3	2	4	10
northern bedstraw	F	17	2	2	2	6
northern blackberry	F	100	2	1	5	14
ragwort	F	17	1	1	1	4
serpent-grass	F	17	1	1	1	3
tall Jacob`s-ladder	F	100	1	1	1	8
tall bluebells	F	17	2	2	2	6
tall scouring-rush	F	17	1	1	1	3
valerian	F	17	3	3	3	7
violet	F	33	1	1	1	4
blue grass	G	17	1	1	1	3
bluejoint reedgrass	G	67	5	1	10	18
polar grass	G	17	10	10	10	13
sedge	G	50	2	2	2	10
water sedge	G	67	6	1	10	21
Moss layer	M	100	36	15	75	60
Lichen layer	L	83	7	1	15	24
Bare soil	B	33	1	1	1	4
Litter and mulch	B	100	28	5	50	52
Surface water	B	17	1	1	1	3
Woody litter (>1" dia.)	B	83	2	1	5	14

Salix spp. includes: SABA3 SALIX SANO2 SAPL2

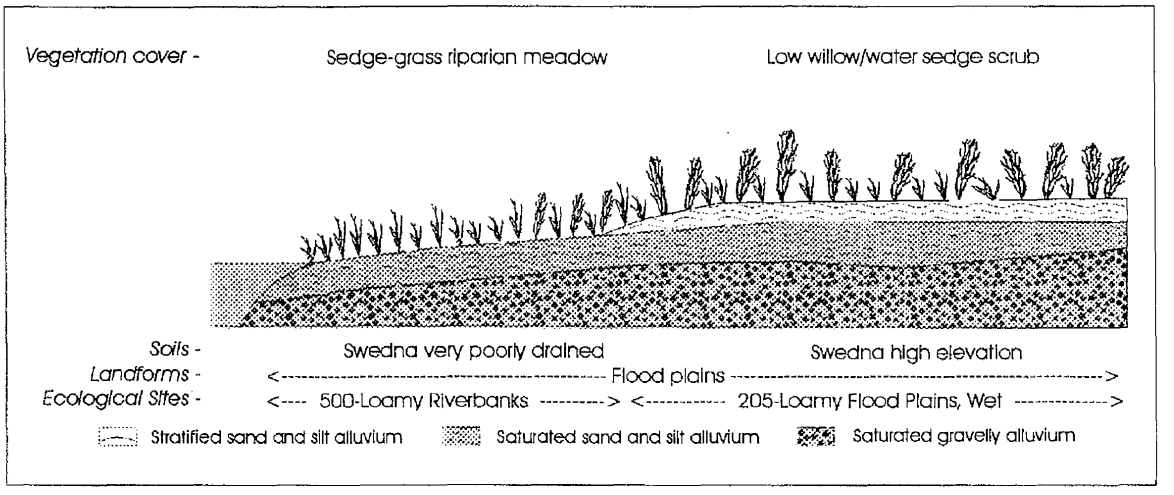


General relationships between terrace height, ecological sites, and vegetation types in the willow zone, Gulkana River Area, Alaska.

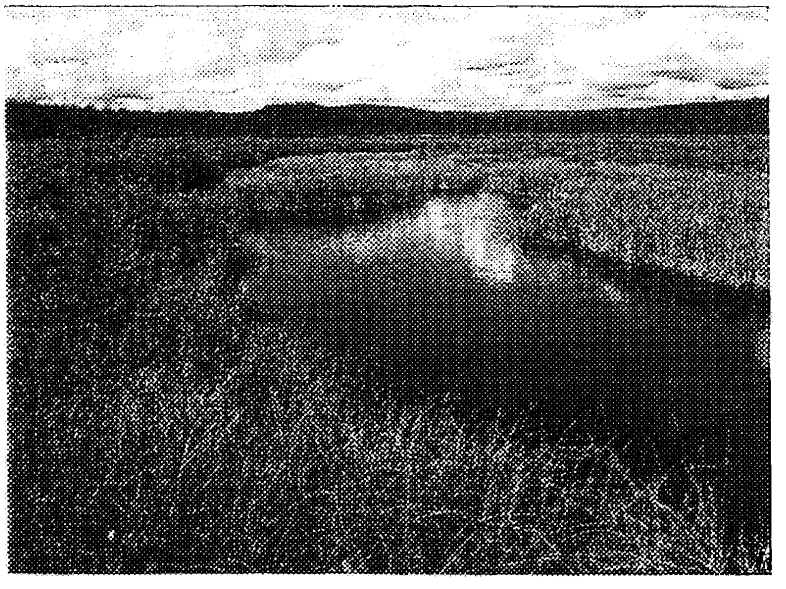
Selected physical properties for typical stages of site progression on flood plains and stream terraces in the willow zone, Gulkana River Area, Alaska.

Ecological Site (stage)	Cover Type(s)	Terrace Height avg(rge)	Flooding Frequency	Depth to SSK avg(rge)	Thickness of OM avg(rge)	Depth to Water Table		Depth to Permafrost	
						Pedons w/ <60"	Depth when <60" avg(rge)	Pedons w/ <60"	Depth when <60" avg(rge)
		-- ft --		-- in --	-- in --	-- % --	-- in --	-- % --	-- in --
205 - Loamy Flood Plains, Wet	SALIX/CAAQ	2 (1-5)	freq-occas	17 (0-42)	4 (1-10)	100	13 (0-30)	0	-
200 - Gravelly Flood Plains, Moderately Wet	SALIX/herb	3 (2-4)	occas-freq	28 (3-60)	1 (0-3)	100	28 (12-44)	0	-
201 - Loamy Flood Plains, Moderately Wet	SALIX/herb	3 (1-8)	occas-freq	25 (9-50)	1 (0-6)	79	36 (32-45)	0	-
	SALIX/herb2	7 (4-12)	occas	60 (58-60)	1 (0-1)	12	46 (46-60)	0	
101 - Loamy High Flood Plains (PNC)	PIGL/SALIX	6 (3-15)	occas-rare	27 (3-60)	2 (0-7)	39	40 (31-58)	24	33 (17-49)
101 - Loamy High Flood Plains (post-PNC)	PIGL/erica	9 (4-25)	rare-none	30 (12-60)	4 (0-10)	21	35 (8-50)	54	29 (6-52)
104 - Stream Terraces (mid to late seral)	PICEA/BEGL	11(6-25)	rare-none	30 (18-60)	4 (1-9)	9	31 (16-40)	27	36 (18-55)
103 - Stream Terraces, Frozen (PNC)	PICEA/CALU2	9 (4-20)	rare-none	30 (18-60)	7 (2-12)	100	8 (0-23)	100	15 (0-25)

Notes:
Terrace height - estimated height of flood plain or stream terrace surface above the mid summer channel level.
Depth to SSK - depth to sandy skeletal alluvium below the mineral soil surface in pedons without permafrost or in which the permafrost level was below the SSK contact; measured in the soil pit.
Thickness of OM - thickness of the surface organic mat; measured in the soil pit.
Depth to Water Table and Permafrost - Pedons w/ <60": pedons in which a water table or permafrost was present within 60 inches below the mineral surface. Depth when <60": depth below the mineral surface when present; measured in the soil pit.



Representative cross section in the willow zone along the upper Middle Fork.



Representative setting of ecological site 172Xy205AK - Loamy Flood Plains, Wet on low flood plains. The Swedna High Elevation soils on this site support Low willow/water sedge scrub vegetation. Immediately adjacent to the slough in the foreground is ecological site 172Xy500 - Loamy Riverbanks and Sedge-grass riparian meadow vegetation.

Loamy Riverbanks
172Xy500AK

Standard Site Description

Site Number: 172Xy500AK
Site Name: Loamy Riverbanks
Plant Name: riparian
Date: 1/98
Initials (Author's/Agency): DRK, MHC/USDA NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____, _____

(3) Typical Location:

Legal: ____ 1/4; NE 1\4; SW 1\4; Sec. 11 T. 11N R. 09W Meridian Copper River
Latitude: Deg. ____ Min. ____ Sec. ____
Longitude: Deg. ____ Min. ____ Sec. ____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: floodplains
(b) Specific: low, adjacent to channel
(c) Microrelief: plane, convex,
(2) Elevation/Aspect:
Low 1950 / All High 2900 / All
(3) Slope: Low: 0 % High 3 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.	_____	___._____	___._____	___._____	___._____	___._____	___._____
2.	_____	___._____	___._____	___._____	___._____	___._____	___._____
3.	_____	___._____	___._____	___._____	___._____	___._____	___._____
4.	_____	___._____	___._____	___._____	___._____	___._____	___._____
5.	_____	___._____	___._____	___._____	___._____	___._____	___._____

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width
1.	___	___	___	___	___	___	___ A) Confined (1.0 - 1.5)
2.	___	___	___	___	___	___	___ B) Moderately Confined (1.5 - 2.5)
3.	___	___	___	___	___	___	___ C) Unconfined (2.5+)
4.	___	___	___	___	___	___	___ D) Not Determined
5.	___	___	___	___	___	___	

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low	_____	_____	_____	_____
High	_____	_____	_____	_____

[b] Average Annual Discharge: _____._ to _____._

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____,
_____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic _____, _____
b. Soil Temperature Regime: Cryic _____, _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 90 (days) (28 °F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.3	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxton
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Typic Cryaquents	Coarse loamy over sandy or sandy skeletal, mixed, nonacid
(2)		
(3)	Typic Cryaquents	Coarse loamy, mixed, nonacid

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: Alluvium, _____

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum Ø (inches) Maximum 2 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low Ø	High 2	Boulders	Low Ø	High Ø
Cobbles	Low Ø	High 1	Channers	Low Ø	High Ø
Stones	Low Ø	High Ø	Flagstone	Low Ø	High Ø

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Ochric Epipedon
(2) Thickness: Minimum Ø (inches) Maximum 4 (inches)

e. Surface Texture: FSL, SL, FS, _____

f. Soil Depth; (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 13 (inches) Maximum 27 (inches)

h. AWC for Effective Plant Root Zone: Low .10 High .15 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____
_____ to	_____	_____	____ to	____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 3 (inches) Maximum 27 (inches)
(2) Average Thickness: 36 (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 8 (inches) Maximum 27 (inches)
(2) Average Thickness 36 (inches)

l. Reaction:

	Depth Range (Inches) Minimum	Maximum	Amount (Ph) Low	High
Surface Layers:	0	60	6.1	7.8
Layers:				
All Other Layers:				

m. Salinity:

	Depth Range (Inches) Minimum	Maximum	Amount (mmhos/cm) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Maximum	Amount (SAR) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	F	W	W	M	M	M	F	F	F
4-10"	↓	↓	↓	↓	↓	↓	W	↓	↓	↓	↓	↓
10-20"	↓	↓	↓	↓	↓	↓	↓	W	W	W	↓	↓
20-40"	W	↓	↓	↓	↓	↓	↓	↓	↓	↓	W	W
40-60"	↓	W	W	W	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum .2 (Ft) Maximum 1.0 (Ft)
(2) Kind: apparent
(3) Month(s): May to Sep

q. Flooding:
(1) Frequency: frequent
(2) Duration: brief long
(3) Months: May to Sep

r. Ponding
(1) Depth: Minimum ___ Maximum ___(ft)
(2) Duration: _ _____
(3) Month(s): _ to

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	0 - ____	___ - ___
Shrubs	0 - 15	1 - 3.5
Grasses, Grass Like, & Forbs	25 - 90	1 - 2.5
Cryptogams	1 - 25	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	5 - 50	_____ - _____
P	0 - 1	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
_____	_____	___-___	_____-_____	___-___	___-___	_____
_____	_____	___-___	_____-_____	___-___	___-___	_____
_____	_____	___-___	_____-_____	___-___	___-___	_____
_____	_____	___-___	_____-_____	___-___	___-___	_____
_____	_____	___-___	_____-_____	___-___	___-___	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
SALIX	Willow	_____	0 - 15	___-___	___-___	_____
POFR4	shrubby cinquefoil	_____	0 - 3	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CAAQ	water sedge		25-90	___-___	___-___	
CAREX	sedge		0-10	___-___	___-___	
CACA4	bluejoint reedgrass		0-70	___-___	___-___	
ERIOP	cottongrass		0-1	___-___	___-___	
POA	bluegrass		0-10	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
POPA4	marsh cinquefoil		0-5	___-___	___-___	
GATR2	threepetal bedstraw		0-1	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	0 - 2	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total moss	1 - 35	____-____	____-____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:
Range: Low _____ High _____ lbs/acres
Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	4
Late (Good)	_____	_____
Mid (Fair)	_____	_____
Early (Poor)	_____	_____
drier microsites		5

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	FP2	Swedna Very poorly drained
	FP21	"
	FP4	"
	FP6	Aquatna

172Xy500AK - Loamy Riverbanks

Sedge-grass riparian meadow

Part A: Description of Site

1.c. Landscape Narrative: This site occurs along the continuously wetted banks of low to moderate gradient, clear water rivers and streams. Areas occupied by this site are typically 2 to 40 feet (0.6 to 12 m) wide along the edges of the channel and sloughs. Terrace height above the mean summer channel level is typically less than 2 feet (0.6 m). During periods of peak runoff, most or all of this site is under water. As the water level drops during the course of the summer, the site becomes progressively more exposed. The water table, however, remains at or near the surface throughout the growing season. Soil slope ranges from nearly level on top of the flood plain or terrace to moderately steep at the edge of the channel. Elevation is 1850 to 2900 feet (564 to 884 m).

This site is found throughout the Gulkana River area but is most prevalent along the Middle Fork, the Main Stem north of canyon rapids, the upper reaches of the North and South Branches, and the lower reaches of the West Fork. This site undoubtedly occurs along other low to moderate gradient streams and rivers elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is 1 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 18 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The weakly developed soils on this site typically are formed in stratified sandy and silty alluvium over very gravelly and cobbly alluvium. Depth to gravel and cobble ranges from occasionally less than 10 inches (25 cm) to 60 inches (152 cm) or more. Depth to seasonal high water table ranges from 4 inches (10 cm) above the surface during peak runoff to an average of about 12 inches (30 cm) below the surface during most of the remainder of the growing season and the soils are very poorly drained. Aquic conditions including redox depletions and/or a reduced matrix are present within 10 inches (25 cm) of the soil surface.

4.e. Vegetation Narrative: Sedge-grass riparian meadow is the correlated PNC on this site. Scattered willows are present in many stands. This vegetation is best described as a riparian association, which develops and persists under a regime of annual flooding and continuous wetness. Microsites on slightly higher terrace positions and/or with better soil drainage support Low willow scrub.

5.b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.): Vegetation on this site is probably stable under existing site conditions. Channel migration and down-cutting, which reduces flooding duration or lowers the water table would allow various *Salix* and, in the alder zone, *Alnus tenuifolia* to become established and *Calamagrostis canadensis*, *Arctagrostis latifolia*, and other herbs to increase in abundance.

Because of the continuously wet conditions, this site is not likely to burn or be impacted by wild fires.

7. List of commonly Associated Sites (number and names):

a. Upland:

b. Riparian or Wetland:

172Xy100AK - Loamy Flood Plains

172Xy101AK - Loamy High Flood Plains

172Xy200AK - Gravelly Flood Plains

172Xy201AK - Loamy Flood Plains, Moderately Wet

172Xy205AK - Loamy Flood Plains, Wet

8. List of Competing Sites (number and names):

172Xy205AK - Loamy Flood Plains, Wet: similar to slightly higher flood plain positions but generally not restricted to the shorelines of channels and sloughs; similar soils with water table at 0 to 18 inches (0 to 46 cm); Low willow/water sedge scrub vegetative potential.

172Xy501AK - Wet Depressions: shallow depressions and shores of ponds and lakes on lacustrine terraces and abandoned channels and sloughs on stream terraces; organic soils; Sedge wet meadow vegetative potential.

172Xy500AK - Loamy Riverbanks

Sedge-grass riparian meadow

Part B: Interpretations for Use and Management of the site

1.a. Plant Community Characteristics: see attached summary tables and diagrams for seral stages and stand characteristics.

1.b. Riparian or Wetland Site Progressions:

(1) Aggradation: This site typically is restricted to the immediate margin of channels and sloughs and is subject to nearly continuous flooding by flowing water during the growing season. Channel migration or down cutting that leads to reduced duration of flooding, lowering of the water table, or an increase in terrace height could result in a progression of the site over time toward 172Xy205AK - Loamy Flood Plains, Wet; 172Xy201AK - Loamy Flood Plains, Moderately Wet; or 172Xy200AK - Gravelly Flood Plains and various types of Low willow scrub vegetation. Changes that lead to periodic flooding and subsequent ponding by non-flowing water could result in site progression toward 172Xy501AK - Wet Depressions and Sedge wet meadow vegetation.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy205AK - Loamy Flood Plains, Wet
Cover type: Low willow/water sedge scrub
Seral status: PNC
Number of stands: 11
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

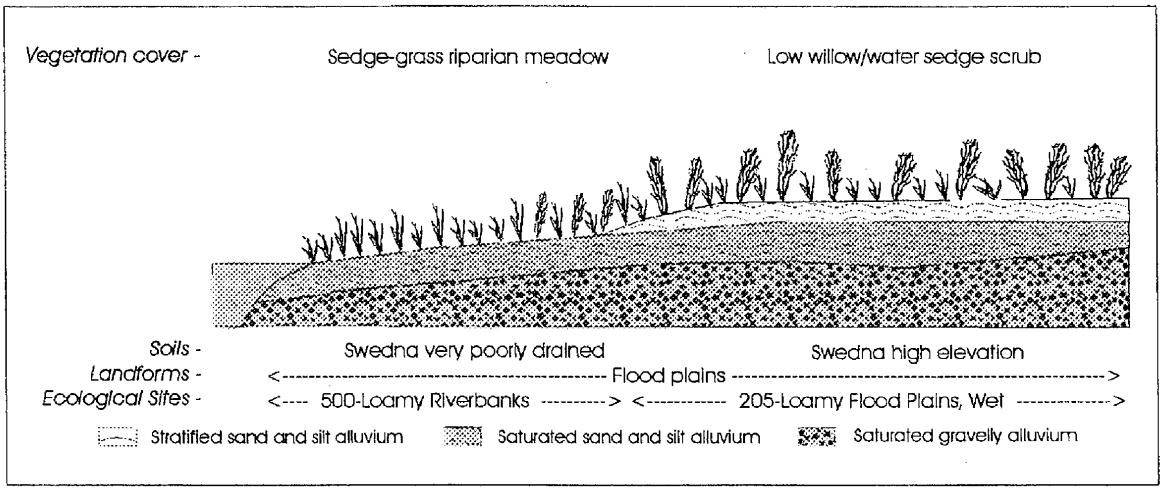
Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	27	3	1	7	9
white spruce	T3	27	6	1	15	12
blueberry willow	SS	18	1	1	1	4
bog blueberry	SS	64	8	1	20	23
net vein willow	SS	82	20	3	60	40
shrub birch	SS	18	4	1	7	8
shrubby cinquefoil	SS	91	7	1	15	25
willow	SS	100	69	25	85	83
anemone	F	27	1	1	1	4
arctic dock	F	45	4	1	8	14
arctic sweet coltsfoot	F	18	2	1	3	6
common fireweed	F	18	2	1	2	5
felwort	F	73	2	1	7	11
marsh cinquefoil	F	36	11	5	25	20
marsh grass-of-parnassus	F	64	1	1	1	6
northern blackberry	F	82	3	1	15	15
stonecrop	F	18	1	1	1	4
tall Jacob`s-ladder	F	73	1	1	2	8
valerian	F	27	1	1	2	5
blue grass	G	45	1	1	2	6
bluejoint reedgrass	G	64	5	1	15	19
polar grass	G	36	1	1	2	7
rush	G	18	1	1	1	3
sedge	G	36	19	1	60	26
water sedge	G	82	37	7	80	55
Moss layer	M	100	48	10	90	69
Lichen layer	L	91	4	1	10	18
Bare soil	B	36	2	1	5	9
Litter and mulch	B	100	29	1	70	54
Rock fragments	B	18	1	1	1	3
Surface water	B	82	9	1	35	27
Woody litter (>1" dia.)	B	36	3	1	7	10

Salix spp. includes: SABA3 SALIX SAPL2

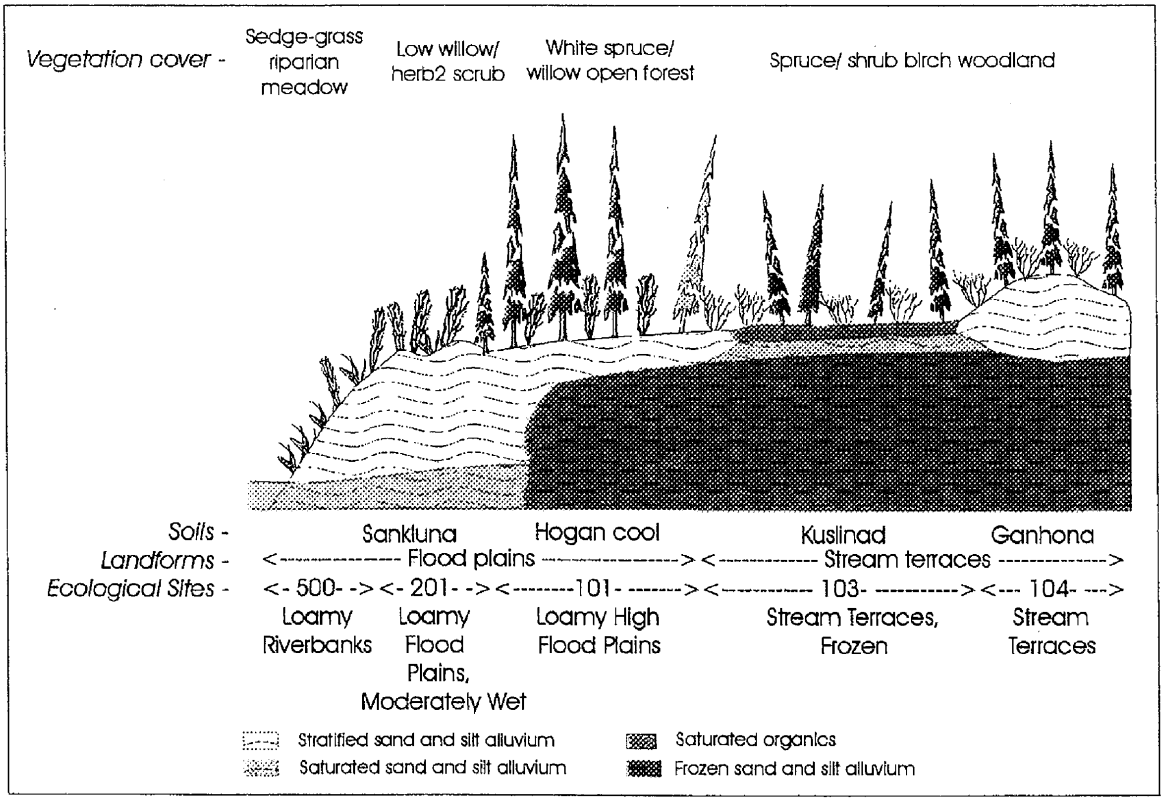
Ecological Site: 172Xy205AK - Loamy Flood Plains, Wet
Cover type: Low willow/herb scrub
Seral status: PNC on drier microsites
Number of stands: 6
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	83	3	1	10	15
white spruce	T3	17	1	1	1	3
black crowberry	SS	33	1	1	1	5
blueberry willow	SS	17	2	2	2	6
bog blueberry	SS	83	8	1	15	26
feltleaf willow	SS	17	5	5	5	9
net vein willow	SS	83	8	2	15	25
red bearberry	SS	17	5	5	5	9
shrub birch	SS	50	2	1	3	9
shrubby cinquefoil	SS	100	10	7	15	32
willow	SS	100	82	75	91	91
Bodin's milkvetch	F	17	1	1	1	3
Canadian bunchberry	F	33	4	2	5	11
Sitka burnet	F	17	1	1	1	3
alpine sweet-vetch	F	33	5	2	7	12
anemone	F	50	3	1	7	12
common fireweed	F	33	1	1	1	5
cuckoo flower	F	17	1	1	1	3
felwort	F	83	3	1	5	14
horsetail	F	50	1	1	1	6
larkspur-leaf monkshood	F	33	1	1	1	4
marsh cinquefoil	F	17	2	2	2	6
marsh grass-of-parnassus	F	83	1	1	1	6
milk-vetch	F	33	3	2	4	10
northern bedstraw	F	17	2	2	2	6
northern blackberry	F	100	2	1	5	14
ragwort	F	17	1	1	1	4
serpent-grass	F	17	1	1	1	3
tall Jacob`s-ladder	F	100	1	1	1	8
tall bluebells	F	17	2	2	2	6
tall scouring-rush	F	17	1	1	1	3
valerian	F	17	3	3	3	7
violet	F	33	1	1	1	4
blue grass	G	17	1	1	1	3
bluejoint reedgrass	G	67	5	1	10	18
polar grass	G	17	10	10	10	13
sedge	G	50	2	2	2	10
water sedge	G	67	6	1	10	21
Moss layer	M	100	36	15	75	60
Lichen layer	L	83	7	1	15	24
Bare soil	B	33	1	1	1	4
Litter and mulch	B	100	28	5	50	52
Surface water	B	17	1	1	1	3
Woody litter (>1" dia.)	B	83	2	1	5	14

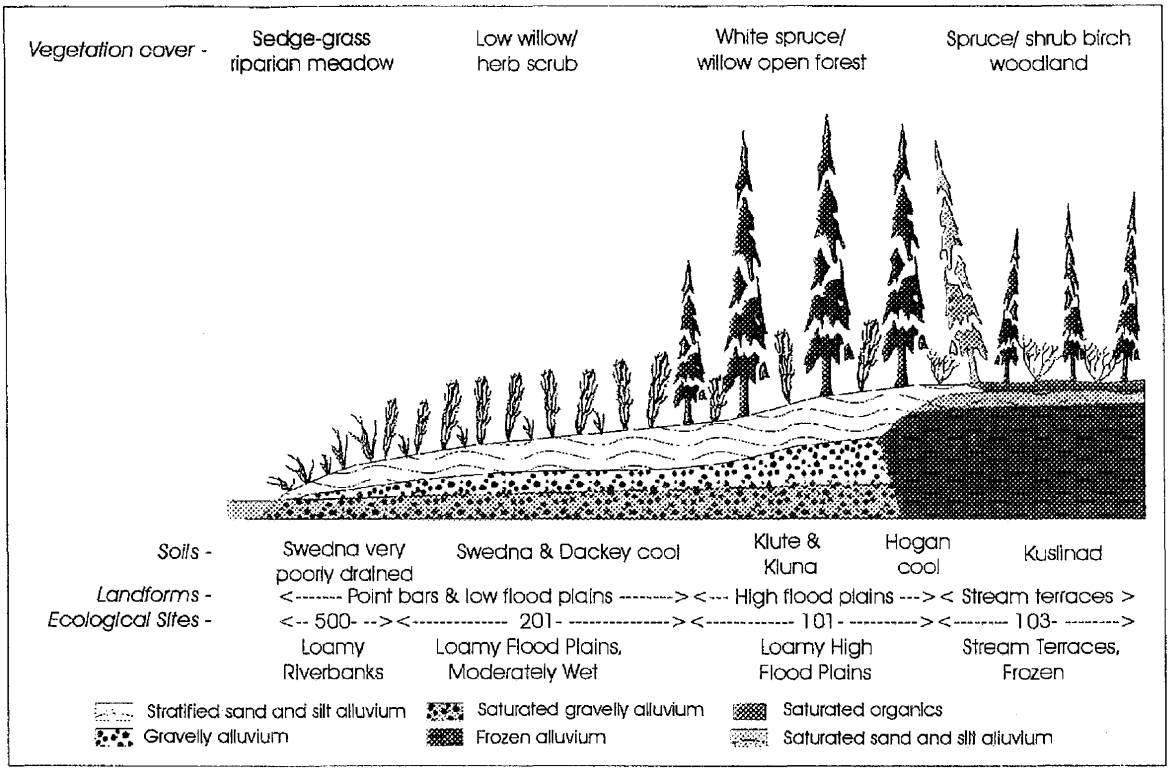
Salix spp. includes: SABA3 SALIX SANO2 SAPL2



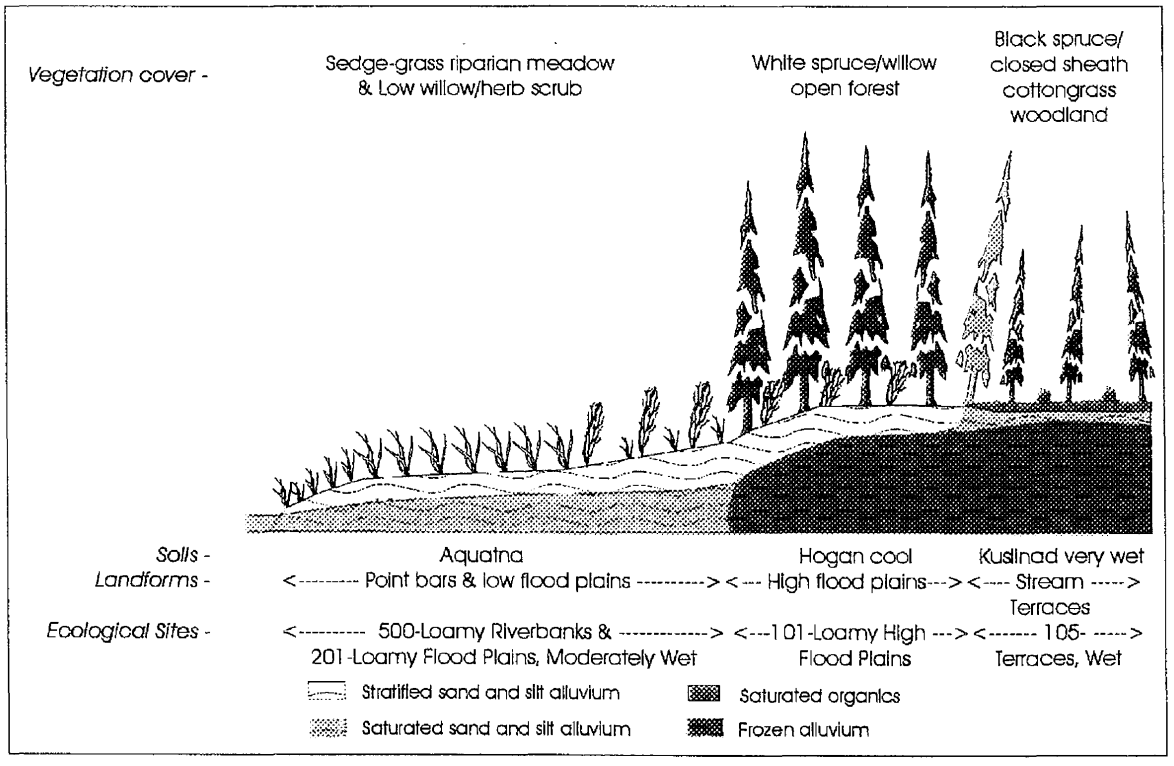
Representative cross section in the willow zone along the upper Middle Fork.



Representative cross section in the willow zone along the lower Middle Fork.



Representative cross section in the willow zone along the upper Main Stem.



Representative cross section in the willow zone along the upper South Branch.



Representative setting of ecological site 172Xy500AK - Loamy Riverbanks on a low flood plain adjacent to the river channel. The Swedna very poorly drained soils on this site support Sedge-grass riparian meadow.

Wet Depressions
172Xy501AK

Standard Site Description

Site Number: 172Xy501AK
Site Name: Wet Depressions
Plant Name: CAREX
Date: March 1998
Initials (Author's/Agency): DRK, MHC/USDA NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____, _____

(3) Typical Location:

Legal: ___ 1/4; SW 1\4; NE 1\4; Sec. 28 T. 13N R. 03W Meridian Copper River
Latitude: Deg. ___ Min. ___ Sec. ___
Longitude: Deg. ___ Min. ___ Sec. ___
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: Lacustrine Terraces, Stream Terraces
(b) Specific: depressions, abandoned channels, _____
(c) Microrelief: Concave, _____, _____
(2) Elevation/Aspect:
Low 1900 / ALL _____ High 2600 / ALL _____
(3) Slope: Low: 0 % High 2 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width	
1.								A) Confined (1.0 - 1.5)
2.								B) Moderately Confined (1.5 - 2.5)
3.								C) Unconfined (2.5+)
4.								D) Not Determined
5.								

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___.___	___.___	___.___	___.___	_____	_____

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maximum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Aquic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 28 (°F)
f. Mean Annual Precipitation: 15 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.2	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson, Alaska
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Cryofibrists	
(2)	Terric Cryofibrists	loamy, mixed, euic
(3)		

b. Geologic Formation:
(1) Formation(s): _____, _____
(2) Parent material: organics over lacustrine and over alluvium

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 9 (inches) Maximum 60 (inches)
(b) Type I, E

(2) Rock Fragments (% cover):

Pebbles	Low ∅	High ∅	Boulders	Low ∅	High ∅
Cobbles	Low ∅	High ∅	Channers	Low ∅	High ∅
Stones	Low ∅	High ∅	Flagstone	Low ∅	High ∅

d. Surface Horizon:
(1) Diagnostic Surface Horizon: Histic Epipedon
(2) Thickness: Minimum 9 (inches) Maximum 60 (inches)

e. Surface Texture: PT, _____, _____, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 13 (inches) Maximum 26 (inches)

h. AWC for Effective Plant Root Zone: Low .30 High .35 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____
_____ to	_____	_____	___ to	___	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 60 (inches) Maximum 60 (inches)
(2) Average Thickness: ∅ (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 60 (inches) Maximum 60 (inches)
(2) Average Thickness Ø (inches)

l. Reaction:

	Depth Range (Inches) Minimum	Maximum	Amount (Ph) Low	High
Surface Layers:	0	26	4.5	7.3
Layers:	26	60	6.1	7.8
All Other Layers:				

m. Salinity:

	Depth Range (Inches) Minimum	Maximum	Amount (mmhos/cm) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches) Minimum	Maximum	Amount (SAR) Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	F	W	W	W	W	W	F	F	F
4-10"	↓	↓	↓	↓	F	↓	↓	↓	↓	W	↓	↓
10-20"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	W	↓
20-40"	W	W	W	W	W	↓	↓	↓	↓	↓	↓	W
40-60"	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum Ø (Ft) Maximum 1 (Ft)
(2) Kind: apparent
(3) Month(s): May to Oct

q. Flooding:
(1) Frequency: none (rare on stream terraces)
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum 0.5 Maximum 0 (ft)
(2) Duration: Long
(3) Month(s): May to Sep

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	0 - 3	4 - 12
Shrubs	0 - 10	1 - 3
Grasses, Grass Like, & Forbs	30 - 100	1 - 4
Cryptogams	2 - 70	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
N+R	15 - 30	_____ - _____
P	0 - 15	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
PIMA	black spruce	__-__	___-___	0-3	__-__	_____
_____	_____	__-__	___-___	__-__	__-__	_____
_____	_____	__-__	___-___	__-__	__-__	_____
_____	_____	__-__	___-___	__-__	__-__	_____
_____	_____	__-__	___-___	__-__	__-__	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees. if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
BEGL	shrub birch	_____	0-10	__-__	__-__	_____
SAPLZ	diamondleaf willow		0-1	__-__	__-__	_____
LEDUM	Labrador tea	_____	0-3	__-__	__-__	_____
SAFU	Alaska bog willow		0-1	__-__	__-__	_____
OXMI3	small cranberry	_____	0-2	__-__	__-__	_____

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(b) Grasses and Grass Like ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
CAREX	sedge		15 - 95	___-___	___-___	
ERIOP	cottongrass		0 - 80	___-___	___-___	
ARLA2	polar grass		0 - 10	___-___	___-___	
CACA4	bluejoint reedgrass		0 - 30	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(c) Forbs ..... ___-___ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
POPA14			0 - 40	___-___	___-___	
METR3			0 - 10	___-___	___-___	
POAC			0 - 5	___-___	___-___	
			___-___	___-___	___-___	
			___-___	___-___	___-___	

Other ..... ___-___NTE___ea

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
LICHEN	total lichen	0 - 1	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
MOSS	total moss	0 - 70	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___
___	___	___-___	___-___	___-___

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	//
Late (Good)	_____	_____
Mid (Fair)	_____	_____
Early (Poor)	_____	_____
drier microsites		/

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	LL41	Cryofibrists
	LL141	"
	MK1	Hufman
	MK2	Cryofibrists
	ST2	Hufman

172Xy501AK - Wet Depressions

Sedge wet meadow

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on moderately thick to very thick accumulations of peat in shallow depressions, along the shore of ponds and lakes, and in abandoned channels and sloughs on lacustrine terraces, till plains, and stream terraces. Most areas of this site are ponded throughout the growing season. Source of water is surface and subsurface drainage from surrounding uplands and flooding on low stream terraces. The depth and duration of ponding increases toward the central, lower positions of the depressions and sloughs, as does the thickness of the organic materials. Slopes range from 0 to 3 percent. Elevation is generally 1900 to 3000 feet (579 to 914 m).

This site is found throughout the Gulkana River area and undoubtedly occurs elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F.; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F. base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The organic soils on this site consist of fibrous or partially decomposed organic matter 16 to more than 60 inches (41 to more than 162 cm) thick over stratified sandy and silty alluvium and loamy and clayey lacustrine deposits. Depth to seasonal high water table ranges from 4 inches (10 cm) or more above to 12 inches (30 cm) below the soil surface and the soils are typically very poorly drained. Aquic conditions include a histic epipedon, saturated conditions to the surface and a reduced matrix where mineral layers are present.

4.e. Vegetation Narrative: Sedge wet meadow is the correlated PNC on this site. Low willows and shrub birch are common to well-represented along the margins of depressions where the site is transitional to adjacent scrub and forest communities.

5.b. Wildlife Narrative: This site provides excellent habitat for a variety of wildlife. Sedge wet meadows with interspersed lakes and ponds are used by a variety of ducks and Tundra Swans for staging areas during spring and fall migrations and for nesting. This site also provides herbaceous forage for moose during spring and summer.

6. Community Dynamics (Fire, etc.): Except during extreme dry years, the vegetation on this site is only slightly susceptible to wild fire. Ponding probably limits wild fire to the margins of the meadows and also protects the root system and ground level buds. If burned, this site would be expected to quickly re-vegetate to Sedge wet meadow vegetation similar to the pre-burn stand.

In many places, the vegetation on this site exhibits zonal patterns with sedge-moss bog meadow occupying the wetter, central portions, sedge wet meadow occurring on

somewhat higher positions, and mixed sedge-grass and grass meadows, often with scattered willows and shrub birch, along the upper margins and higher microsites.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy102AK - Loamy High Flood Plains, Frozen

172Xy103AK - Stream Terraces, Frozen

172Xy104AK - Stream Terraces

172Xy106AK - Glaciolacustrine Uplands

172Xy107AK - Glaciolacustrine Uplands, Frozen

172Xy110AK - Glaciolacustrine Uplands, Ruptic

172Xy111AK - Peat Mounds

b. Riparian or Wetland:

172Xy105AK - Terraces, Wet

172Xy202AK - Shallow Drainages

8. List of Competing Sites (number and names):

172Xy202AK - Shallow Drainages: primarily on the outer margins of depressions and in shallow, poorly defined drainages on lacustrine terraces; generally less than 16 inches (41 cm) of organic material over mineral soils; Low shrub birch-willow/water sedge vegetative potential.

172Xy500AK - Loamy Riverbanks: along the edges of flood plains immediately adjacent to the channel; mineral soils usually with less than 1 inches (2 cm) of organic material; mineral accretions to soils from flood waters; Sedge-grass riparian meadow vegetative potential.

172Xy501AK - Wet Depressions
Sedge wet meadow

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see attached summary tables for seral stages.

1.b. Riparian or Wetland Site Progression:

(1) Aggradation: In many upland areas this site occurs in complex with ecological site 172Xy111AK - Peat Mounds, with the ice-cored peat mounds and ridges protruding from about 2 to 30 (0.6 to 9.1 m) above the surrounding saturated, permafrost-free sedge wet meadows. In many situations, the peat mounds are believed to have developed from the wet meadows. Initial stages of peat mound development is probably due to an unusually thin cover of snow (Williams and Smith 1989), which allows deep frost penetration and frost heaving in winter. Heaving ground often forms discrete, irregularly spaced bumps several inches in height. The drier peat near the surface of these slightly elevated areas increases the overall insulating qualities of the overlying organic material, maintaining frozen soil conditions throughout the summer months and promoting the formation of ice crystals and masses. The developing ice core of the mound is fed by abundant water from the adjoining wet meadows and ponds.

As the surface is gradually elevated changes in the plant community also occur on the peat mounds. Williams and Smith (1989) noted that *Carex* sp. and *Eriophorum sp.* died and Sphagnum moss began to do so during the first season. These were eventually replaced by shrubs, primarily *Betula glandulosa*, and lichens. Peat mounds in the Gulkana River Area support Low shrub birch scrub and Spruce/shrub birch woodland.

1.g. Recreation and Natural Beauty: This site, particularly when occurring in complex with ecological site 172Xy111AK - Peat Mounds, provides striking contrast and landscape diversity in extensive areas of otherwise monotonous spruce woodlands characteristic of lacustrine terraces. This site also provides excellent opportunities for viewing wildlife and hunting.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy501AK - Wet Depressions
Cover type: Sedge wet meadow
Seral status: PNC
Number of stands: 11
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

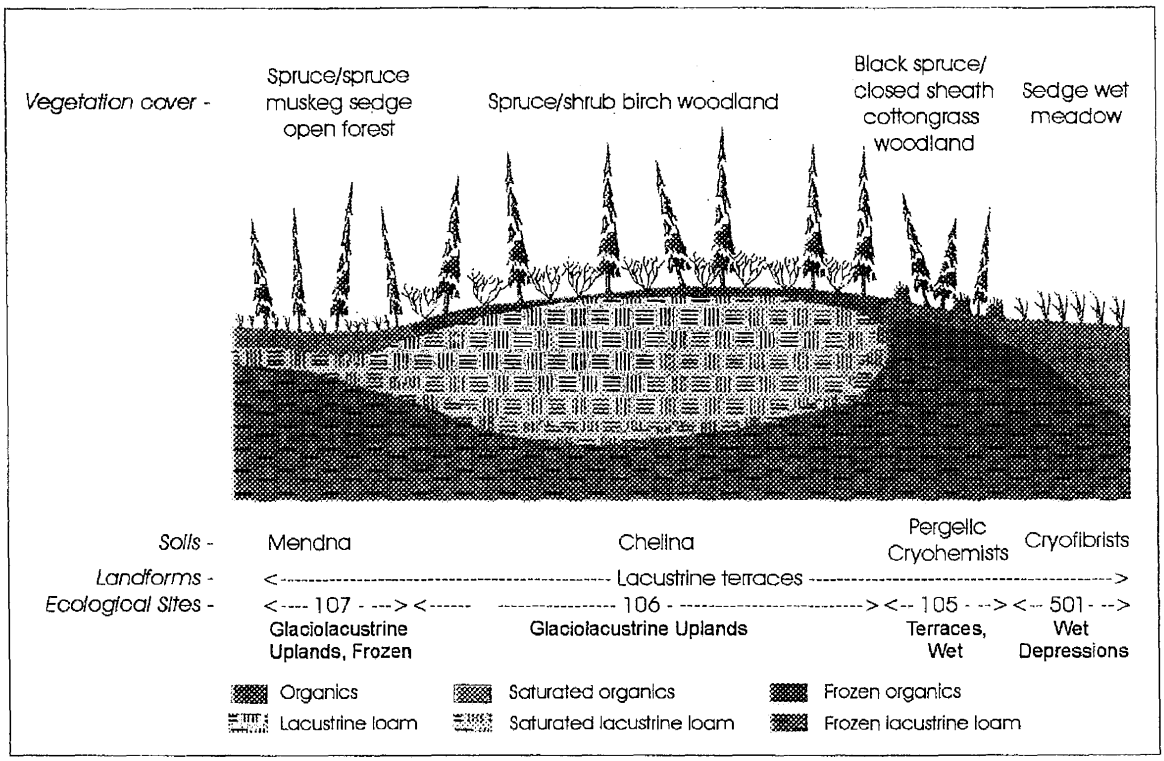
Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T3	18	2	1	3	6
Alaska bog willow	SS	18	1	1	1	3
Labrador-tea	SS	18	2	1	3	6
bog blueberry	SS	18	1	1	1	3
bog rosemary	SS	18	1	1	1	3
shrub birch	SS	36	4	1	10	12
small cranberry	SS	27	1	1	2	5
willow	SS	27	1	1	1	4
Labrador lousewort	F	18	1	1	1	3
arctic sweet coltsfoot	F	18	1	1	1	4
buckbean	F	45	4	1	10	14
marsh cinquefoil	F	82	6	1	40	23
tall Jacob`s-ladder	F	27	3	1	5	9
bluejoint reedgrass	G	27	17	1	30	21
cottongrass	G	18	50	20	80	30
polar grass	G	18	5	1	10	10
sedge	G	55	20	1	95	33
water sedge	G	64	56	15	95	60
Moss layer	M	91	36	1	70	57
Lichen layer	L	18	1	1	1	3
Bare soil	B	18	2	1	2	5
Litter and mulch	B	100	14	1	30	37
Surface water	B	91	33	1	90	55
Woody litter (>1" dia.)	B	18	25	1	50	21

Salix spp. includes: SAPL2

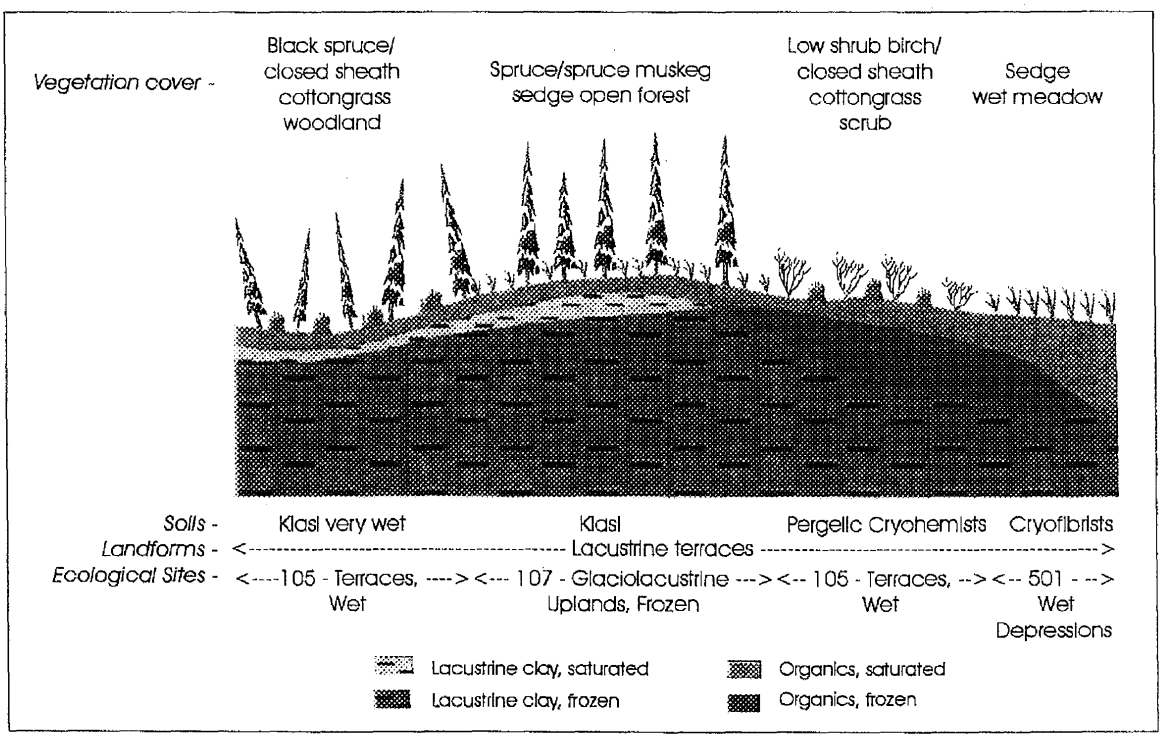
Ecological Site: 172Xy501AK - Wet Depressions
Cover type: Low shrub birch-willow/water sedge scrub
Seral status: similar to PNC (on margins of depressions)
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	TX	100	4	4	4	20
Alaska bog willow	SS	100	2	2	2	14
bog rosemary	SS	100	1	1	1	10
shrub birch	SS	100	1	1	1	10
shrubby cinquefoil	SS	100	2	2	2	14
small cranberry	SS	100	1	1	1	7
thinleaf alder	SS	100	1	1	1	7
willow	SS	100	15	15	15	39
Unknown forb	F	100	1	1	1	7
buttercup	F	100	1	1	1	7
marsh cinquefoil	F	100	15	15	15	39
marsh grass-of-parnassus	F	100	2	2	2	14
marsh willowherb	F	100	1	1	1	7
three-petal bedstraw	F	100	1	1	1	7
violet	F	100	1	1	1	7
bluejoint reedgrass	G	100	1	1	1	7
water sedge	G	100	70	70	70	84
Moss layer	M	100	75	75	75	87
Litter and mulch	B	100	20	20	20	45
Surface water	B	100	15	15	15	39
Woody litter (>1" dia.)	B	100	1	1	1	7

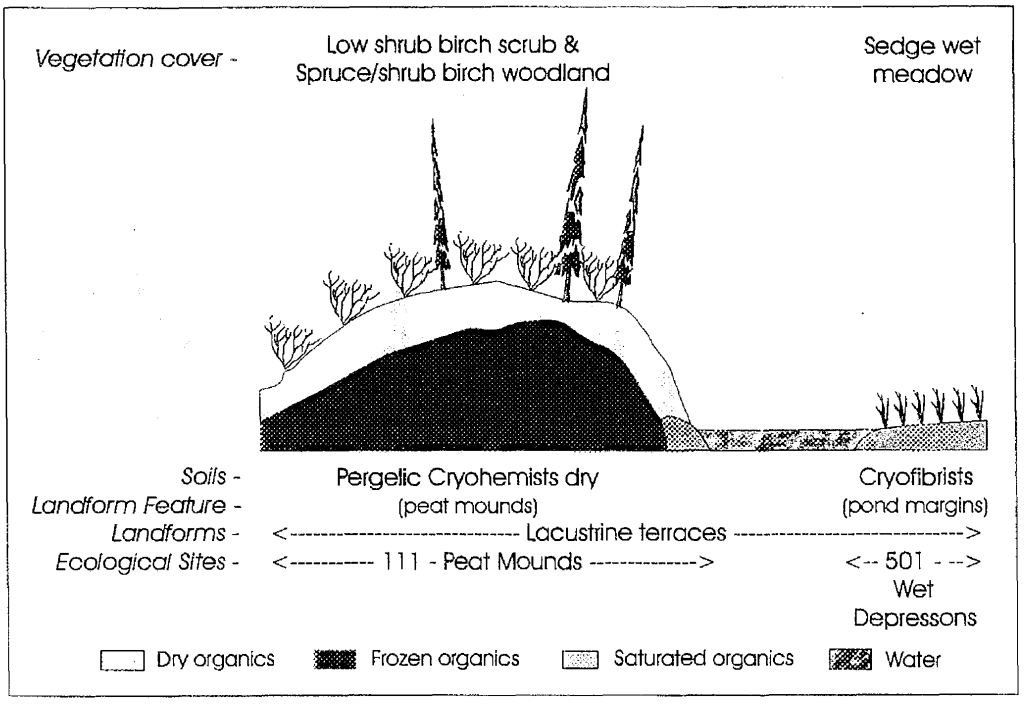
Salix spp. includes: SALIX



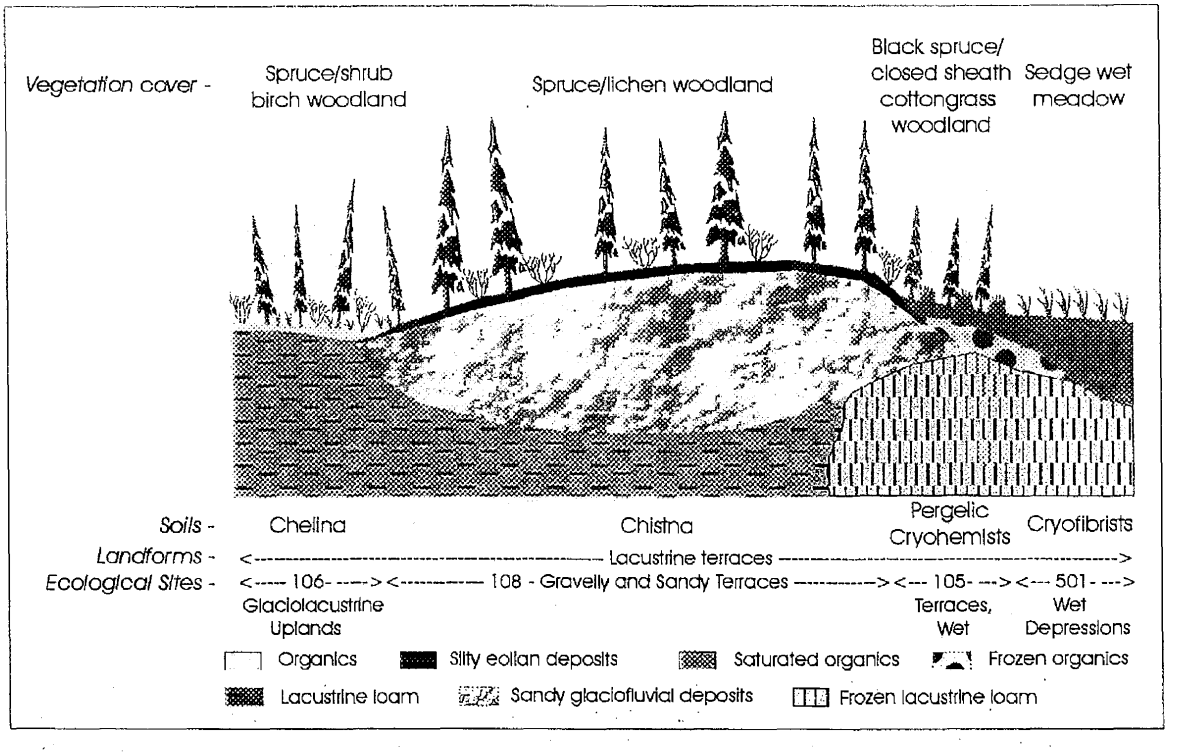
Representative cross section in the glaciolacustrine uplands above the Main Stem.



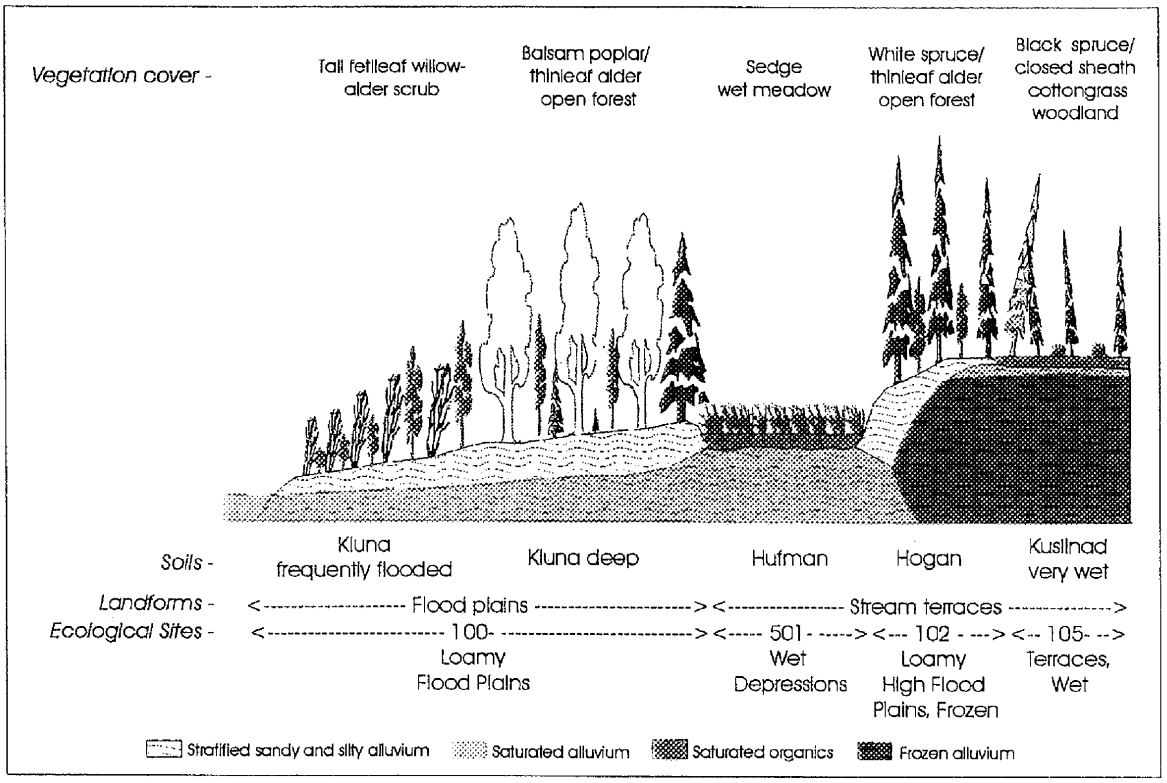
Representative cross section in the glaciolacustrine uplands above the lower Main Stem.



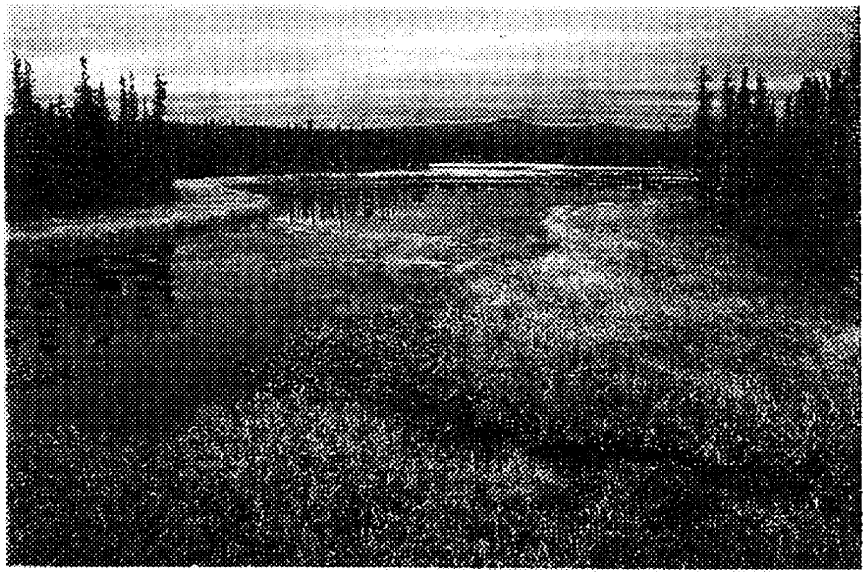
Representative cross section in the glaciolacustrine uplands above the upper North Branch.



Representative cross section in the glaciolacustrine uplands above the West Fork.



Representative cross section in the alder zone along the middle West Fork.



Representative setting of ecological site 172Xy501AK - Wet Depressions in a broadly concave topographic depression on a glaciolacustrine terrace. Small lakes and ponds are common in the central and lowest portion of the depressions. Sedge wet meadow vegetation characteristic of Wet Depressions gives way to emergent and aquatic vegetation in shallow water and near shore areas of the lake.

Escarpments
172Xv800AK

Standard Site Description

Site Number: 172Xy800AK
Site Name: Escarpments
Plant Name: (variable)
Date: 4/98
Initials (Author's/Agency): DRK MHC/USDA NRCS

Part A: Description of Site

1. **Landscape Factors**

   a. **Geographic Location:**

   (1) MLRA Name: Copper River Plateau
   (2) Local Area: Gulkana River, _____
   _____

   (3) Typical Location:

   Legal: SE 1/4; NE 1/4; NW 1/4: Sec. 01 T. 16N R. 03W Meridian Copper River
   Latitude: Deg.____ Min.____ Sec.____
   Longitude: Deg.____ Min.____ Sec.____
   UTM Coordinate: _____

   b. Physiography:

   (1) Landform:
   (a) Broad: River Valleys
   (b) Specific: escarpments, _____
   (c) Microrelief: variable, _____
   (2) Elevation/Aspect:
   Low 1900 / All _____ High 2900 / All _____
   (3) Slope: Low: 20 % High 80 %

   c. Landscape Narrative:

   d. Associated Water Features:

   (1) Non-stream Characteristics:

   (a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

   _____ _____ _____
   _____ _____ _____

   Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

   (b) Drawdown Characteristics (reserved)
   (c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of Floodplain width/bankfull width	
1.								A) Confined (1.0 - 1.5)
2.								B) Moderately Confined (1.5 - 2.5)
3.								C) Unconfined (2.5+)
4.								D) Not Determined
5.								

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: epnemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___	___	___	___	___	___

(d) Special Modifiers

[1] Organic Debris. Channel Blockages. Controls (3 Entries Maximum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic
b. Soil Temperature Regime: Cryic Pergelic
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 15 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.7	.7	.6	.5	.7	2.1	3.1	2.1	1.6	1.5	.7	1.0	
LOW													
TEMP HI	7	11	28	40	53	62	66	63	52	35	15	4	(°F)
MEAN	-2	4	13	27	41	49	54	50	40	25	5	-4	
LOW	-12	-10	-2	14	28	37	42	37	28	15	-5	-13	

i. Climatic Weather Station:

(1) Location: Sourdough AK
(2) Station Number: 508625

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Cryochrepts	
(2)	Cryorthents	
(3)		

b. Geologic Formation:
(1) Formation(s): _____
(2) Parent material: glaciolacustrine, glacial outwash, glacial till

c. Features of Soil Surface:
(1) "O" Horizon:
(a) Thickness Minimum 0 (inches) Maximum 6 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 20	Boulders	Low 0	High 0
Cobbles	Low 0	High 20	Channers	Low 0	High 0
Stones	Low 0	High 0	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: ochric Epipedon
(2) Thickness: Minimum 0 (inches) Maximum 3 (inches)

e. Surface Texture: SiL, SL, CL, SiCL

f. Soil Depth: (not to exceed 2 classes)
Minimum 10 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 3 (inches) Maximum 20 (inches)

h. AWC for Effective Plant Root Zone: Low .14 High .20 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 0 (inches) Maximum 42 (inches)
(2) Average Thickness: _____ (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum 0 (inches) Maximum 42 (inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	1	5.6	6.5
Layers:	1	60	6.1	8.4
All Other Layers:				

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	F-M	M	M	M	M	M	F	F	F
4-10"	↓	↓	↓	F	F-M	M	↓	↓	↓	M	↓	↓
10-20"	↓	↓	↓	↓	F	↓	↓	↓	↓	↓	M	↓
20-40"	↓	↓	↓	↓	↓	F-M	F-M	F-M	F-M	F-M	F-M	↓
40-60"	F-M	F-M	F-M	F-M	F-M	↓	↓	↓	↓	↓	↓	F-M

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 5 (Ft) Maximum 5 (Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: none
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ___ Maximum ___(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	___ - ___	___ - ___
Shrubs	___ - ___	___ - ___
Grasses, Grass Like, & Forbs	___ - ___	___ - ___
Cryptogams	___ - ___	___ - ___

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs/Acre (ADW)
_____	___ - ___	_____ - _____
_____	___ - ___	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____

Other ..... ___-___NTE___ea

_____ _____

_____ _____

_____ _____

_____ _____

(b) Grasses and Grass Like ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
_____	_____	_____	____-____	____-____	____-____	_____
_____	_____	_____	____-____	____-____	____-____	_____
_____	_____	_____	____-____	____-____	____-____	_____
_____	_____	_____	____-____	____-____	____-____	_____
_____	_____	_____	____-____	____-____	____-____	_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
_____	_____	_____	____-____	____-____	____-____	_____
_____	_____	_____	____-____	____-____	____-____	_____
_____	_____	_____	____-____	____-____	____-____	_____
_____	_____	_____	____-____	____-____	____-____	_____
_____	_____	_____	____-____	____-____	____-____	_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
Other.....			_____-_____NTE____ea	

_____ _____

_____ _____

_____ _____

_____ _____

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
Other			_____-_____NTE____ea	

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	_____
Late (Good)	_____	_____
Mid (Fair)	_____	_____
Early (Poor)	_____	_____

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

_____ _____ _____ _____ _____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	ESC1	Cryorthents
"	"	Cryochrepts

172Xy800AK - Escarpments
(variable)

Part A: Description of Site

1.c. Landscape Narrative: This site consists of moderately steep to very steep escarpments and bluffs formed by mass wasting and accelerated erosion during downcutting by rivers through thick glacial and glaciolacustrine deposits. Thermokarst features are evident on these sites where the river has undercut slopes and exposed permafrost. Slopes range from 20 to 80 percent. Slope aspect and gradient are the most influential characteristics on soils formation and present vegetation. Permafrost is often found within 60 inches of the surface on more northerly exposures and is generally absent on other aspects. Areas of mass wasting and accelerated erosion are extensive on the steepest slopes. Elevation is from 1850 to 2900 feet (564 to 884 m).

In the Gulkana River area, this site is found along all reaches of the River. The best development occurs within the Canyon on the Main Stem, along the mid portions of the West Fork, and near the West Fork-Main Stem confluence. This site is common along other major rivers and streams elsewhere in the Copper River basin.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The soils on this site are formed in coarse grained alluvium, gravelly glacial till, and fine-grained glaciolacustrine deposits. Some soils have a mantle of silty eolian material up to 2 inches (5 cm) thick. Other characteristics range from poorly to moderately well developed, shallow to very deep over permafrost, and well to somewhat excessively drained.

4.e. Vegetation Narrative: Vegetation on escarpments varies widely. Very steep, unstable slopes subject to on-going mass wasting and accelerated soil erosion are barren to occasionally sparsely vegetated with scattered shrubs and herbs (Cover type - Sparsely vegetated escarpments). In a few locations along the West Fork, dense herbaceous vegetation has developed and apparently stabilized the slope. On more stable slopes, escarpments support open to closed forest and scrub. Depending on such factors as aspect, slope, soil materials, and fire history, vegetation cover includes Quaking aspen forest, Quaking aspen-white spruce forest, White spruce forest, Spruce/alder woodland, Spruce/shrub birch woodland, and Low shrub birch scrub.

Moderately closed White spruce forest apparently is the most successionally advanced and stable vegetation type found on warm aspects and moderately steep and steep slopes. Spruce/shrub birch woodland is the latest successional stage on cooler, northerly aspects.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Given the wide variation in site characteristics and vegetation found on escarpments, wild fire impacts are likely to equally variable and difficult to predict. Any disturbance factors that damages or destroys the protective vegetative cover could lead to mass wasting and accelerated soil erosion.

7. List of Commonly Associated Sites (number and names):

a. Upland:

b. Riparian or Wetland:

8. List of Competing Sites (number and names):

172Xy800AK - Escarpments
(variable)

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see the attached summary tables for stand characteristics for the common vegetation cover types found on this site.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy800AK - Escarpments
Cover type: White spruce forest
Seral status: late (warm aspects; moderately steep and steep slopes)
Number of stands: 4
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	75	2	1	3	12
paper birch	T1	25	1	1	1	4
white spruce	T1	100	40	15	65	63
white spruce	T2	25	15	15	15	19
balsam poplar	T3	25	4	4	4	10
black spruce	T3	25	5	5	5	11
white spruce	T3	50	5	1	10	16
Labrador-tea	SS	50	9	3	15	21
black crowberry	SS	100	10	2	25	31
blueberry willow	SS	75	4	2	5	17
bog blueberry	SS	100	8	2	15	28
currant	SS	25	1	1	1	4
grayleaf willow	SS	25	5	5	5	11
green alder	SS	25	4	4	4	10
little tree willow	SS	25	1	1	1	4
lowbush cranberry	SS	100	9	2	20	30
prickly rose	SS	100	1	1	1	9
red bearberry	SS	50	3	3	3	12
russet buffalo-berry	SS	100	7	2	15	25
shrubby cinquefoil	SS	25	5	5	5	11
swamp red currant	SS	25	1	1	1	4
willow	SS	75	8	4	10	24
American twinflower	F	50	4	2	5	13
Bodin's milkvetch	F	25	1	1	1	5
Canadian bunchberry	F	25	1	1	1	5
alpine sweet-vetch	F	50	3	1	6	13
arctic aster	F	25	1	1	1	4
arctic lupine	F	25	3	3	3	9
common fireweed	F	75	1	1	1	7
coral root	F	25	1	1	1	4
dwarf scouring-rush	F	25	4	4	4	10
horsetail	F	50	2	1	3	9
marsh grass-of-parnassus	F	25	1	1	1	4
northern commandra	F	75	5	1	15	20
northern groundcone	F	25	1	1	1	4
ragwort	F	75	1	1	2	8
single delight	F	25	1	1	1	4
tall Jacob's-ladder	F	25	1	1	1	4
tall bluebells	F	50	1	1	1	6
wintergreen	F	50	1	1	1	5
bluejoint reedgrass	G	50	1	1	1	6
polar grass	G	25	4	4	4	10
Moss layer	M	100	76	55	90	87
Lichen layer	L	100	7	1	15	27
Bare soil	B	50	2	1	3	9
Litter and mulch	B	100	7	3	10	25
Rock fragments	B	25	1	1	1	4
Woody litter (>1" dia.)	B	50	7	7	7	19

Salix spp. includes: SABA3 SAPL2

Ecological Site: 172Xy800AK - Escarpments
Cover type: Spruce/alder woodland
Seral status: late (warm aspects; moderately steep and steep slopes)
Number of stands: 3
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	33	3	3	3	10
black spruce	T1	33	2	2	2	8
spruce	T1	33	20	20	20	26
white spruce	T1	67	18	5	30	34
white spruce	T2	33	5	5	5	13
balsam poplar	T3	33	2	2	2	8
black spruce	T3	33	1	1	1	6
paper birch	T3	33	1	1	1	4
Labrador-tea	SS	100	22	15	30	47
black crowberry	SS	67	11	2	20	27
bog blueberry	SS	100	13	8	15	36
grayleaf willow	SS	67	15	15	15	32
green alder	SS	67	35	20	50	48
lowbush cranberry	SS	100	8	4	15	28
prickly rose	SS	100	2	1	3	14
red bearberry	SS	100	2	1	3	13
russet buffalo-berry	SS	33	1	1	1	6
shrub birch	SS	67	5	5	5	18
thinleaf alder	SS	33	25	25	25	29
willow	SS	33	4	4	4	12
Labrador lousewort	F	33	1	1	1	4
arctic sweet coltsfoot	F	67	2	1	2	10
cloudberry	F	33	1	1	1	6
common fireweed	F	33	1	1	1	4
dwarf scouring-rush	F	33	1	1	1	4
gentian	F	33	1	1	1	4
horsetail	F	67	4	1	7	16
northern commandra	F	67	1	1	1	7
northern false asphodel	F	33	1	1	1	4
ragwort	F	33	1	1	1	6
wintergreen	F	33	1	1	1	4
polar grass	G	67	2	1	2	10
purple reedgrass	G	33	5	5	5	13
sedge	G	33	1	1	1	4
spruce-muskeg sedge	G	33	4	4	4	12
Moss layer	M	100	53	40	60	73
Lichen layer	L	100	15	10	20	39
Bare soil	B	67	1	1	1	6
Litter and mulch	B	100	22	1	50	47
Rock fragments	B	33	1	1	1	4
Woody litter (>1" dia.)	B	67	1	1	1	7

Salix spp. includes: SAPL2

Ecological Site: 172Xy800AK - Escarpments
Cover type: Quaking aspen-white spruce forest
Seral status: mid-late (warm aspects; moderately steep and steep, convex upper slopes)
Number of stands: 5
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
quaking aspen	T1	100	38	15	70	62
white spruce	T1	100	22	1	35	47
white spruce	T2	60	9	1	15	23
quaking aspen	T3	60	6	2	10	18
white spruce	T3	60	3	1	5	12
Labrador-tea	SS	60	2	1	5	11
black crowberry	SS	60	3	2	5	14
blueberry willow	SS	20	1	1	1	3
bog blueberry	SS	20	10	10	10	14
gray willow	SS	20	1	1	1	4
grayleaf willow	SS	20	1	1	1	4
highbush cranberry	SS	40	5	2	7	13
kinnikinnick	SS	60	17	15	20	32
lowbush cranberry	SS	80	18	15	20	37
prickly rose	SS	100	4	1	5	19
red bearberry	SS	20	1	1	1	4
russet buffalo-berry	SS	100	19	1	60	44
swamp red currant	SS	20	25	25	25	22
American twinflower	F	80	3	1	5	16
Canadian bunchberry	F	20	10	10	10	14
Unknown forb	F	20	1	1	1	3
alpine sweet-vetch	F	20	1	1	1	4
arctic aster	F	40	4	3	4	12
arctic lupine	F	40	2	1	3	8
common fireweed	F	100	1	1	2	11
gentian	F	40	1	1	1	4
horsetail	F	20	2	2	2	6
larkspur-leaf monkshood	F	20	1	1	1	3
northern commandra	F	100	6	3	10	24
ragwort	F	20	1	1	1	4
tall bluebells	F	20	2	2	2	6
wintergreen	F	40	1	1	1	5
blue grass	G	20	1	1	1	3
bluejoint reedgrass	G	20	1	1	1	3
polar grass	G	20	1	1	1	3
rough fescue	G	40	5	1	10	14
Moss layer	M	100	13	1	30	36
Lichen layer	L	100	8	1	15	28
Bare soil	B	100	4	1	10	19
Litter and mulch	B	100	61	35	80	78
Rock fragments	B	60	1	1	2	8
Woody litter (>1" dia.)	B	100	14	4	20	37

Salix spp. includes:

Ecological Site: 172Xy800AK - Escarpments
Cover type: Quaking apsen forest
Seral status: mid-late (warm aspects; moderately steep and steep, convex upper slopes)
Number of stands: 2
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
black spruce	T1	50	10	10	10	22
quaking aspen	T1	100	55	45	65	74
white spruce	T1	50	5	5	5	16
quaking aspen	T3	100	2	1	3	13
Labrador-tea	SS	50	2	2	2	10
black crowberry	SS	50	1	1	1	5
bog blueberry	SS	50	4	4	4	14
grayleaf willow	SS	50	3	3	3	12
kinnikinnick	SS	50	1	1	1	7
lowbush cranberry	SS	50	2	2	2	10
prickly rose	SS	100	8	1	15	28
russet buffalo-berry	SS	50	5	5	5	16
willow	SS	50	3	3	3	12
American twinflower	F	50	1	1	1	7
Canadian bunchberry	F	50	7	7	7	19
Labrador lousewort	F	50	1	1	1	5
arctic lupine	F	50	1	1	1	5
clubmoss	F	50	1	1	1	5
common fireweed	F	100	3	1	5	17
gentian	F	50	1	1	1	5
horsetail	F	50	4	4	4	14
northern commandra	F	50	7	7	7	19
tall bluebells	F	50	1	1	1	5
blue grass	G	50	1	1	1	5
rough fescue	G	50	1	1	1	7
sedge	G	50	1	1	1	7
wild rye	G	50	5	5	5	16
Moss layer	M	100	1	1	2	11
Lichen layer	L	100	1	1	2	11
Bare soil	B	50	10	10	10	22
Litter and mulch	B	100	33	5	60	57
Woody litter (>1" dia.)	B	50	5	5	5	16

Salix spp. includes: SAPL2

Ecological Site: 172Xy800AK - Escarpments
Cover type: Spruce/shrub birch woodland
Seral status: late (cooler, northerly exposures)
Number of stands: 13
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
balsam poplar	T1	15	3	1	5	7
quaking aspen	T1	46	4	1	5	13
white spruce	T1	38	24	5	45	30
spruce	T2	31	33	30	35	32
white spruce	T2	38	25	10	45	31
white spruce	T3	23	7	5	10	12
Labrador-tea	SS	92	27	5	40	50
black crowberry	SS	77	5	2	10	19
blueberry willow	SS	46	5	1	15	15
bog blueberry	SS	92	20	5	40	43
gray willow	SS	15	13	5	20	14
grayleaf willow	SS	77	12	2	25	30
lowbush cranberry	SS	100	8	1	20	28
prickly rose	SS	85	2	1	4	14
red bearberry	SS	62	6	1	25	19
russet buffalo-berry	SS	46	5	1	10	15
shrub birch	SS	85	16	3	40	37
shrubby cinquefoil	SS	46	4	1	12	14
willow	SS	46	4	2	7	13
American twinflower	F	15	2	1	3	5
Canadian bunchberry	F	31	3	1	8	9
Labrador lousewort	F	15	1	1	1	3
arctic aster	F	15	2	1	4	6
arctic lupine	F	23	4	1	8	9
arctic sweet coltsfoot	F	38	2	1	5	8
common fireweed	F	77	1	1	7	10
horsetail	F	54	8	1	25	20
northern commandra	F	38	3	1	6	10
ragwort	F	23	1	1	1	4
tall bluebells	F	31	1	1	1	4
polar grass	G	54	2	1	3	9
sedge	G	23	1	1	2	5
spruce-muskeg sedge	G	31	1	1	1	6
Moss layer	M	100	53	25	80	73
Lichen layer	L	100	14	1	30	38
Bare soil	B	38	5	1	15	14
Litter and mulch	B	100	21	5	40	46
Rock fragments	B	31	3	1	9	9
Woody litter (>1" dia.)	B	77	4	1	5	17

Salix spp. includes: SABA3 SAPL2

Ecological Site: 172Xy800AK - Escarpments
Cover type: Low shrub birch scrub
Seral status: early-mid (cooler, northerly exposures)
Number of stands: 2
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	50	5	5	5	16
white spruce	T3	100	5	5	5	22
Labrador-tea	SS	100	33	20	45	57
black crowberry	SS	50	6	6	6	17
bog blueberry	SS	100	23	20	25	47
currant	SS	50	2	2	2	10
grayleaf willow	SS	100	23	20	25	47
green alder	SS	50	15	15	15	27
lowbush cranberry	SS	100	6	4	8	24
red bearberry	SS	100	2	1	4	15
russet buffalo-berry	SS	50	2	2	2	10
shrub birch	SS	50	15	15	15	27
arctic lupine	F	50	3	3	3	12
arctic sweet coltsfoot	F	50	5	5	5	16
clubmoss	F	50	7	7	7	19
horsetail	F	50	1	1	1	5
wintergreen	F	50	1	1	1	5
bluejoint reedgrass	G	50	2	2	2	10
polar grass	G	50	2	2	2	10
sedge	G	50	1	1	1	5
spruce-muskeg sedge	G	50	6	6	6	17
Moss layer	M	100	55	55	55	74
Lichen layer	L	100	20	15	25	45
Litter and mulch	B	100	13	5	20	35
Woody litter (>1" dia.)	B	50	1	1	1	5

Salix spp. includes:

Ecological Site: 172Xy800AK - Escarpments
Cover type: Sparsely vegetated escarpments
Seral status: early (very steep, unstable slopes)
Source of data: Gulkana River Area

Description:

Sparsely vegetated escarpments consists of sparse, discontinuous stands of small trees and tree regeneration, shrubs, and herbs on steep and very steep escarpments. Mass wasting and accerlerated erosion is evident in most stands. The vegetation cover includes recently established plants as well as clumps of vegetation on soil materials that have broken off and moved down from higher up on the slope. In places where the slope has stabilized, fairly dense vegetation cover often develops.

Frequently occurring woody species include *Populus balsamifera* and *P. tremuloides*, *Shepherdia canadensis*, *Alnus crispa*, *Betula glandulosa*, *Ledum* spp., and various *Salix* spp. Frequent herbs include *Achillea millifolium*, *Agropyron trachycaulum*, *Agrostis scabra*, *Aster sibericus*, *Calamagrostis canadensis*, *Epilobium angustifolium* and *E. latifolium*, *Equisetum* spp., *Hedysarum alpinum*, and other pioneering species found on flood plains and uplands.

Loamy Backslopes
172Xy801AK

Standard Site Description

Site Number: 17RXy801AK
Site Name: Loamy Backslopes
Plant Name: (variable)
Date: 4/98
Initials (Author's/Agency): DRK, MHC / USDA NRCS

Part A: Description of Site

1. Landscape Factors

a. Geographic Location:

(1) MLRA Name: Copper River Plateau
(2) Local Area: Gulkana River, _____
_____

(3) Typical Location:

Legal: SE 1/4; SW 1\4; SW 1\4: Sec. 08 T. 12N R. 02W Meridian Copper River
Latitude: Deg.____ Min.____ Sec.____
Longitude: Deg.____ Min.____ Sec.____
UTM Coordinate: _____

b. Physiography:

(1) Landform:
(a) Broad: Mountain Slopes
(b) Specific: backslopes, _____
(c) Microreliief: _____, _____
(2) Elevation/Aspect:
Low 2600 / All _____ High 2900 / All _____
(3) Slope: Low: 4 % High 50 %

c. Landscape Narrative:

d. Associated Water Features:

(1) Non-stream Characteristics:

(a) Non-stream Type(s): (Indicate the appropriate designation(s). If associated with a stream, go to "stream".)

_____ _____ _____
_____ _____ _____

Enter: Lake, Reservoir, Pool, Pond, Spring, Seep, Marsh, Bog, Potholes, Irrigation Conveyance or Other (Specify).

(b) Drawdown Characteristics (reserved)
(c) Turnover (reserved)

(2) Stream Characteristics:

(a) Major Stream Type Characteristics

	Stream Type	Gradient Low	Gradient High	Sinuosity Low	Sinuosity High	W/D Ratio Low	W/D Ratio High
1.							
2.							
3.							
4.							
5.							

	Materials: Channel Bed			Materials: Bank			Confinement Ratio of floodplain width/bankfull width	
1.								A) Confined (1.0 - 1.5)
2.								B) Moderately Confined (1.5 - 2.5)
3.								C) Unconfined (2.5+)
4.								D) Not Determined
5.								

(b) Flow Regime (Discharge and channel capacity)

[1] General

Kind: _____, _____

(Enter: ephemeral, Perennial, Intermittent or Subterranean)

[2] Specific

[a] Position of the Water Column (Channel capacity)

Stage	Season: Winter	Spring	Summer	Fall
Low				
High				

[b] Average Annual Discharge: _____ to _____

[c] Ratio of 7-day duration high and low flows to the average annual discharge

Stage	Recurrence Interval					
	1.25 Year	2 Year	5 Year	10 Year	25 Year	50 Year
Low	0.000	0.000	0.000	0.000	0.000	0.000
High	0.000	0.000	0.000	0.00	0.0	0.0

(c) Drainage Area and Stream Size For Multiple Systems

Extremes of Condition					
Stream Width (Ft)		Stream Depth (Ft)		Watershed Area (Acres)	
Low	High	Low	High	Low	High
___	___	___	___	___	___

(d) Special Modifiers

[1] Organic Debris, Channel Blockages, Controls (3 Entries Maxi mum)

_____, _____, _____

[2] Depositional Features (3 Entries Maximum)

_____, _____, _____

[3] Stream Adjustment Features (3 Entries Maximum)

_____, _____, _____

[4] Other Special Modifiers (3 Entries Maximum)

_____, _____, _____

(e) Ground Water Factors

[1] System Extent: _____

[2] Source Type: _____

[3] Source Dependence: _____ D = Dependent
I = Independent

Note: The following questions can only be answered when source dependence is answered D (Dependent).

Floodplain Recharge: _____ A = Active, I = Inactive
Adjacent Pond Water Recharge: _____ Y = Yes or N = No
Bank Recharge: _____ Y = Yes or N = No
Channel Bed Loss: _____ L = Low, M = Moderate or H = High

(3) Associated Water Features Narrative:

2. Climate Factors

a. Soil Moisture Regime: Udic _____
b. Soil Temperature Regime: Cryic _____
c. Mean Annual Soil Temperature: _____ to _____ (°F)
d. Mean Summer Soil Temperature: _____ to _____ (°F)
e. Mean Annual Air Temperature: 24 to 26 (°F)
f. Mean Annual Precipitation: 18 to 21 (inches)
g. Frost-Free Period: 60 to 80 (days) (28°F base temp)
h Moisture and Temperature Distribution:

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
PPT HI													(in.)
MEAN	.9	.6	.8	.5	.9	2.9	3.8	3.2	2.8	2.5	1.1	1.2	
LOW													
TEMP HI	11	15	28	35	51	62	64	60	50	34	17	10	(°F)
MEAN	1	4	15	24	39	49	53	49	40	25	9	1	
LOW	-8	-7	2	11	28	37	42	38	30	17	-1	-8	

i. Climatic Weather Station:

(1) Location: Paxson AK
(2) Station Number: 507095

j. Climate Narrative:

3. Soil Factors

a. Major Soil Family(s) and Classification Typical for the Site:

	Subgroup	Family Adjectives
(1)	Entic Cryumbrepts	fine loamy, mixed
(2)		
(3)		

b. Geologic Formation:
(1) Formation(s): _____
(2) Parent material: lacustrine loam, colluvium

c. **Features of Soil Surface:**
(1) "O" Horizon:
(a) Thickness Minimum 1 (inches) Maximum 4 (inches)
(b) Type I

(2) Rock Fragments (% cover):

Pebbles	Low 0	High 0	Boulders	Low 0	High 0
Cobbles	Low 0	High 5	Channers	Low 0	High 0
Stones	Low 0	High 5	Flagstone	Low 0	High 0

d. Surface Horizon:
(1) Diagnostic Surface Horizon: umbric Epipedon
(2) Thickness: Minimum 4 (inches) Maximum 8 (inches)

e. Surface Texture: SiL, _____, _____, _____

f. Soil Depth: (not to exceed 2 classes)
Minimum 60 (inches) Maximum 60 (inches)

g. Major Root Zone Thickness: (for common and many roots)
Minimum 4 (inches) Maximum 15 (inches)

h. AWC for Effective Plant Root Zone: Low .17 High .20 (inches/inch)

i. Accumulation (clay $CaCO_3$, etc.):

Depth Minimum (Inches)	Depth Maximum (Inches)	Type	Amount Low	Amount High	Measurement (%, PPM, meq/100gm)
_____	to _____	_____	___	to ___	_____
_____	to _____	_____	___	to ___	_____
_____	to _____	_____	___	to ___	_____
_____	to _____	_____	___	to ___	_____

j. 35% to 50% (vol) Rock Fragments:
(1) Depth: Minimum 11 (inches) Maximum 60 (inches)
(2) Average Thickness: _____ (inches)

k. 50% (vol) Rock Fragments:
(1) Depth: Minimum _____(inches) Maximum _____(inches)
(2) Average Thickness _____(inches)

l. Reaction:

	Depth Range (Inches)		Amount (Ph)	
	Minimum	Maximum	Low	High
Surface Layers:	0	8	5.1	6.0
Layers:	8	60	5.6	7.3
All Other Layers:				

m. Salinity:

	Depth Range (Inches)		Amount (mmhos/cm)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

n. Sodicity:

	Depth Range (Inches)		Amount (SAR)	
	Minimum	Maximum	Low	High
Surface Layers:				
Layers:				
All Other Layers:				

o. Annual Pattern of Soil-Water States:

Depth	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
0-4"	F	F	F	M	M	M	M	M	M	F	F	F
4-10"				F	↓					M	↓	
10-20"					F						M	
20-40"	↓	↓	↓	↓	↓							↓
40-60"	M	M	M	M	M	↓	↓	↓	↓	↓		M

F: Frozen more than half of the month
W: Wet more than half of the month
M: Moist more than half of the month
D: Dry More than half of the month

p. Water Table (During Growing Season):
(1) Depth: Minimum 5 (Ft) Maximum 5 (Ft)
(2) Kind: _____
(3) Month(s): _____ to _____

q. Flooding:
(1) Frequency: None
(2) Duration: _____
(3) Months: _____ to _____

r. Ponding
(1) Depth: Minimum ____ Maximum ____(ft)
(2) Duration: _____
(3) Month(s): ___ to ___

s. Soil Narrative:

4. Vegetation Factors

a. Cover:

(1) Canopy Cover and Structure:

	% Cover (Vertical View)	Height (ft)
Trees	____ - ____	____ - ____
Shrubs	____ - ____	____ - ____
Grasses, Grass Like, & Forbs	____ - ____	____ - ____
Cryptogams	____ - ____	____ - ____

(2) Basal Cover: _____% total

(3) Litter/Residue:

Kind[1]	% Cover	lbs./Acre (ADW)
_____	___ - ___	_____ - _____
_____	___ - ___	_____ - _____
_____	___ - ___	_____ - _____

[1] N = non-persistent
P = persistent
R = residue

b. Vascular Plant Community Composition and Production:

(1) Overstory Trees:

Basal Area (all Trees) _____ - _____ ft^2

Symbol	Common Name	Site Index	Ft^3/Acre/Yr	% Canopy Cover	% Composition Canopy	Av. Density (No./Acre)
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____
_____	_____	___-___	____-____	___-___	___-___	_____

Site Index References: _____

_____

_____

(2) Understory:

(a) Shrubs (and understory trees, if applicable) - - _____ - _____ Total

Symbol	Common Name	Group	% Canopy Cover	% Comosition Air Dry Wt	Group % Allowable	
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(b) Grasses and Grass Like ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(c) Forbs ..... ____-____ Total

Symbol	Common Name	Group	% Canopy Cover	% Composition Air Dry Wt	Group % Allowable	
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____
_____	_____	_____	___-___	___-___	___-___	_____

Other ..... ____-____NTE____ea

_____ _____

_____ _____

_____ _____

_____ _____

(d) Total Annual Production - Vascular Vegetation

Favorable _____lbs/acre Average _____ lbs/acre

Unfavorable _____lbs/acre

c. Cryptogamic Community Production and Composition (for tundra and similar ecosystems):

(1) Lichen Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
Other.....			_____-_____NTE_____ea	
_____	_____			
_____	_____			
_____	_____			
_____	_____			

(2) Moss/Clubmoss Biomass (100%)

Symbol	Common Name	% Canopy Cover	% Composition Air Dry Wt.	Group % Allowable
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
_____	_____	_____-_____	_____-_____	_____-_____
Other			_____-_____NTE_____ea	

_____ _____

_____ _____

_____ _____

_____ _____

(3) Cryptogamic Community Production

(a) Total Lichen Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acres

(b) Total Moss/Clubmoss Biomass:

Range: Low _____ High _____ lbs/acres

Average: _____ lbs/acre

d. Documentation:

Seral Stage (Condition)	# Transects	# Data Sheets
Potential (Climax)	_____	_____
Late (Good)	_____	_____
Mid (Fair)	_____	_____
Early (Poor)	_____	_____

e. Vegetation Narrative:

5. Wildlife

a. Species List:

_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

b. Wildlife Narrative:

6. Community Dynamics (Fire, etc.):

7. List of Commonly Associated Sites (number and names):
   a. Upland:

   b. Riparian or Wetland:

8. List of Competing Sites (number and name):

9. List of Soils Grouped Into the Site By:

Soil Survey Area	Map Unit Symbol	Soil Name and Phase
649	SA1	Nickolna

172Xy801AK - Loamy Backslopes
(variable)

Part A: Description of Site

1.c. Landscape Narrative: This site occurs on lower and mid elevation mountains in what appears to be a transition between lower lacustrine and glacial landscapes and higher elevation bedrock controlled mountains. Seeps and groundwater discharge areas are present in some places. Slopes range from 4 to 50 percent. Elevation is 2600 to 2900 feet (792 to 884 m).

In the Gulkana River area, this site occurs along the lower Middle Fork and Main Stem north of the Canyon. This site was observed to occur on mountain slopes outside the Gulkana area but its total occurrence in the Copper River basin is not known.

MLRA (USDA 1981): 172X - Copper River Plateau

Ecological Unit (Nowacki and Brock 1995): 135A - Copper River Basin Section

1.d.(3). Associated Water Features Narrative: (BLM)

2.j. Climate Narrative: The subarctic continental climate of this site is characterized by long cold winters and short warm summers. Mean January temperature is -2 °F; mean July temperature is 54 °F. Mean annual precipitation ranges from 15 to 21 inches. Annual snowfall ranges from 54 to 102 inches. The frost-free season is about 60 to 80 days (28 °F base temperature). The growing season varies greatly from year to year and frosts can occur during any summer month.

3.s. Soils Narrative: The moderately well developed soils on this site are formed in mixed gravelly glacial till and loamy glaciolacustrine deposits. Most have a thin mantle of silty loess. Cobbles and stones derived from local bedrock are found near and on the surface in some places. Bedrock is present below 6 inches (15 cm) in some soils, primarily at higher elevations. In most places, soils on this site are well drained.

4.e. Vegetation Narrative: The potential vegetation on this site is best described as a complex of Spruce/shrub birch woodland, Spruce/willow birch woodland, Tall green alder scrub, and Low shrub birch scrub. The cover types occur in a patchy mosaic with no obvious site or successional relationships.

5.b. Wildlife Narrative: (BLM)

6. Community Dynamics (Fire, etc.): Wild fire impacts on this site are not known. In most places, evidence of past wild fires were present throughout the vegetation, including snags and common charred downfall. Post-fire succession would probably lead initially to a complex of alder scrub and Low shrub birch scrub. Tree regeneration would be dependent in part on the proximity of suitable seed trees.

7. List of Commonly Associated Sites (number and names):

a. Upland:

172Xy106AK - Glaciolacustrine Uplands

172Xy107AK - Glaciolacustrine Uplands, Frozen

172Xy109AK - Mountain Slopes, Shallow

172Xy203AK - Upper Mountain Slopes, Shallow

b. Riparian or Wetland:

8. List of Competing Sites (number and names):

172Xy801AK - Loamy Backslopes
(variable)

Part B: Interpretations for Use and Management of the Site

1.a. Plant Community Characteristics: see the attached summary tables and diagram for stand characteristics of vegetation cover types found on this site.

1.k. Applicable Field Offices: BLM, Glennallen District Office

Ecological Site: 172Xy801AK - Loamy Backslopes
Cover type: Spruce/shrub birch woodland
Seral status: late
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	100	10	10	10	32
white spruce	T2	100	25	25	25	50
white spruce	T3	100	5	5	5	22
Beauverd spiraea	SS	100	1	1	1	7
Labrador-tea	SS	100	30	30	30	55
black crowberry	SS	100	10	10	10	32
bog blueberry	SS	100	35	35	35	59
lowbush cranberry	SS	100	10	10	10	32
prickly rose	SS	100	3	3	3	17
shrub birch	SS	100	50	50	50	71
willow	SS	100	20	20	20	45
Canadian bunchberry	F	100	1	1	1	7
arctic sweet coltsfoot	F	100	1	1	1	7
cloudberry	F	100	1	1	1	7
horsetail	F	100	6	6	6	24
bluejoint reedgrass	G	100	1	1	1	7
Moss layer	M	100	70	70	70	84
Lichen layer	L	100	6	6	6	24
Litter and mulch	B	100	15	15	15	39
Rock fragments	B	100	5	5	5	22
Woody litter (>1" dia.)	B	100	10	10	10	32

Salix spp. includes: SALIX SAPL2

Ecological Site: 172Xy801AK - Loamy Backslopes
Cover type: Spruce/willow woodland
Seral status: late
Number of stands: 2
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	100	23	20	25	47
white spruce	T3	50	10	10	10	22
Labrador-tea	SS	100	10	10	10	32
black crowberry	SS	50	1	1	1	5
blueberry willow	SS	50	5	5	5	16
bog blueberry	SS	100	18	15	20	42
lowbush cranberry	SS	100	4	3	5	20
prickly rose	SS	50	1	1	1	5
red bearberry	SS	100	1	1	1	9
russet buffalo-berry	SS	50	25	25	25	35
shrub birch	SS	100	10	5	15	32
shrubby cinquefoil	SS	50	3	3	3	12
small cranberry	SS	50	1	1	1	5
willow	SS	100	30	25	35	55
Canadian bunchberry	F	50	2	2	2	10
alpine sweet-vetch	F	50	7	7	7	19
arctic sweet coltsfoot	F	50	1	1	1	5
common fireweed	F	50	1	1	1	5
horsetail	F	100	2	1	4	15
single delight	F	50	1	1	1	7
wintergreen	F	50	1	1	1	5
polar grass	G	100	1	1	2	11
sedge	G	50	3	3	3	12
Moss layer	M	100	25	15	35	50
Lichen layer	L	50	1	1	1	5
Bare soil	B	100	1	1	1	7
Litter and mulch	B	100	3	1	5	17

Salix spp. includes: SAPL2

Ecological Site: 172Xy801AK - Loamy Backslopes
Cover type: Tall green alder scrub
Seral status: late
Number of stands: 4
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

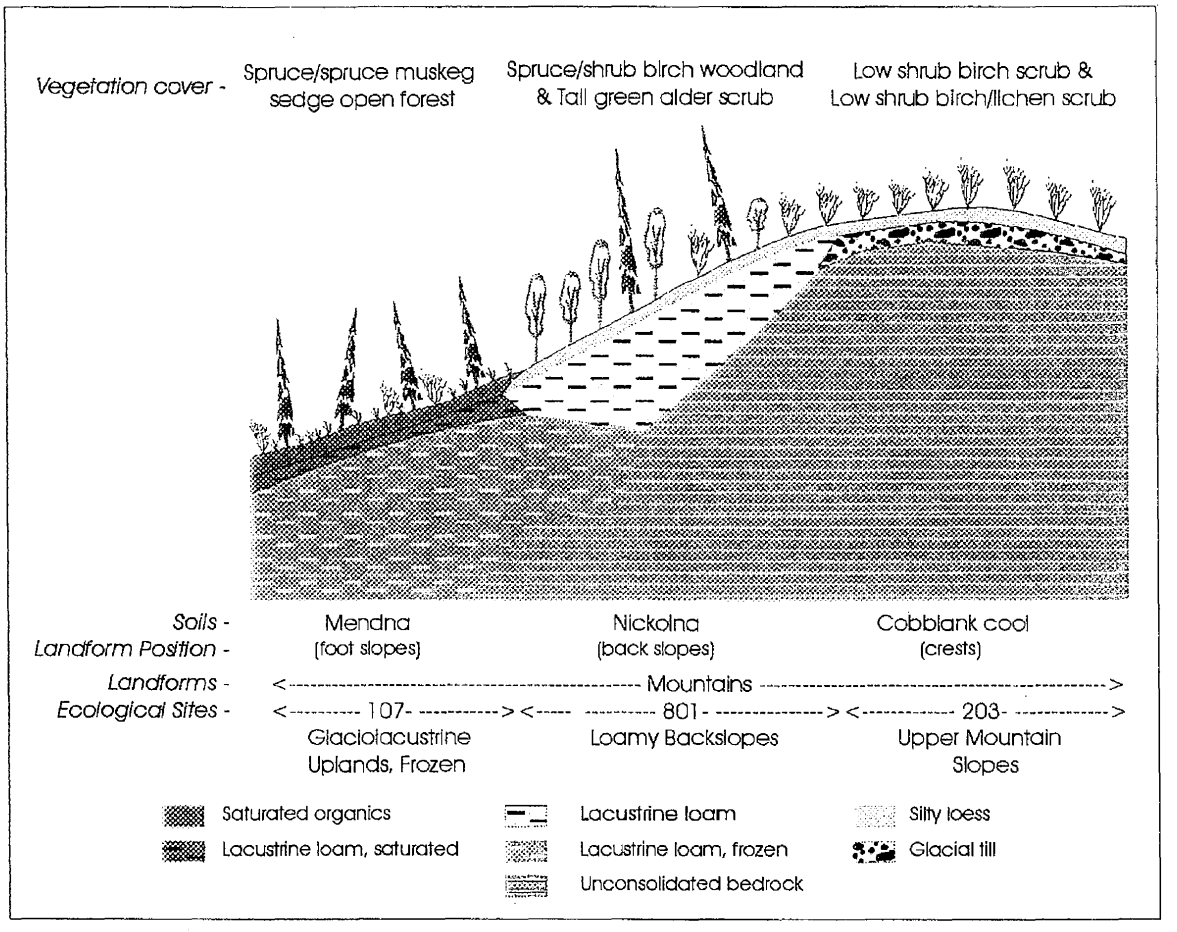
Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T1	25	3	3	3	9
white spruce	T2	100	5	1	10	23
Beauverd spiraea	SS	50	4	1	7	14
Labrador-tea	SS	100	20	10	35	45
arctic mountain-heather	SS	25	4	4	4	10
black crowberry	SS	100	4	1	7	19
bog blueberry	SS	100	20	15	30	45
common juniper	SS	25	1	1	1	5
currant	SS	25	1	1	1	4
grayleaf willow	SS	50	19	7	30	30
green alder	SS	100	33	15	70	57
lowbush cranberry	SS	100	8	5	15	28
prickly rose	SS	25	1	1	1	4
red bearberry	SS	50	1	1	2	8
shrub birch	SS	100	36	5	70	60
willow	SS	100	12	2	20	34
Alaska springbeauty	F	25	1	1	1	4
American twinflower	F	50	1	1	1	7
Canadian bunchberry	F	50	12	3	20	24
anemone	F	25	1	1	1	4
arctic sweet coltsfoot	F	25	1	1	1	4
clubmoss	F	50	3	2	3	11
horsetail	F	50	14	2	25	26
meadow bistort	F	50	2	1	3	10
northern groundcone	F	25	1	1	1	4
starwort	F	25	1	1	1	4
tall bluebells	F	25	1	1	1	4
bluejoint reedgrass	G	25	1	1	1	4
polar grass	G	50	2	1	3	9
rush	G	25	1	1	1	4
sedge	G	50	5	1	10	16
spruce-muskeg sedge	G	25	2	2	2	7
Moss layer	M	100	61	25	90	78
Lichen layer	L	75	9	1	15	25
Bare soil	B	25	4	4	4	10
Litter and mulch	B	100	14	1	45	37
Rock fragments	B	75	3	1	6	14
Surface water	B	25	1	1	1	4
Woody litter (>1" dia.)	B	50	10	5	15	22

Salix spp. includes: SAMO2 SAPL2

Ecological Site: 172Xy801AK - Loamy Backslopes
Cover type: Low shrub birch scrub
Seral status: mid
Number of stands: 1
Source of data: Gulkana River Area
Key: Con = % constancy; Avg = average % canopy cover; Min = minimum % canopy cover; Max = maximum % canopy cover; Imp = importance value
Note: Avg, Min, and Max based only on stands in which a taxon occurred; Imp = sq root of (Con * Avg)
: Only taxa with >10% constancy included.

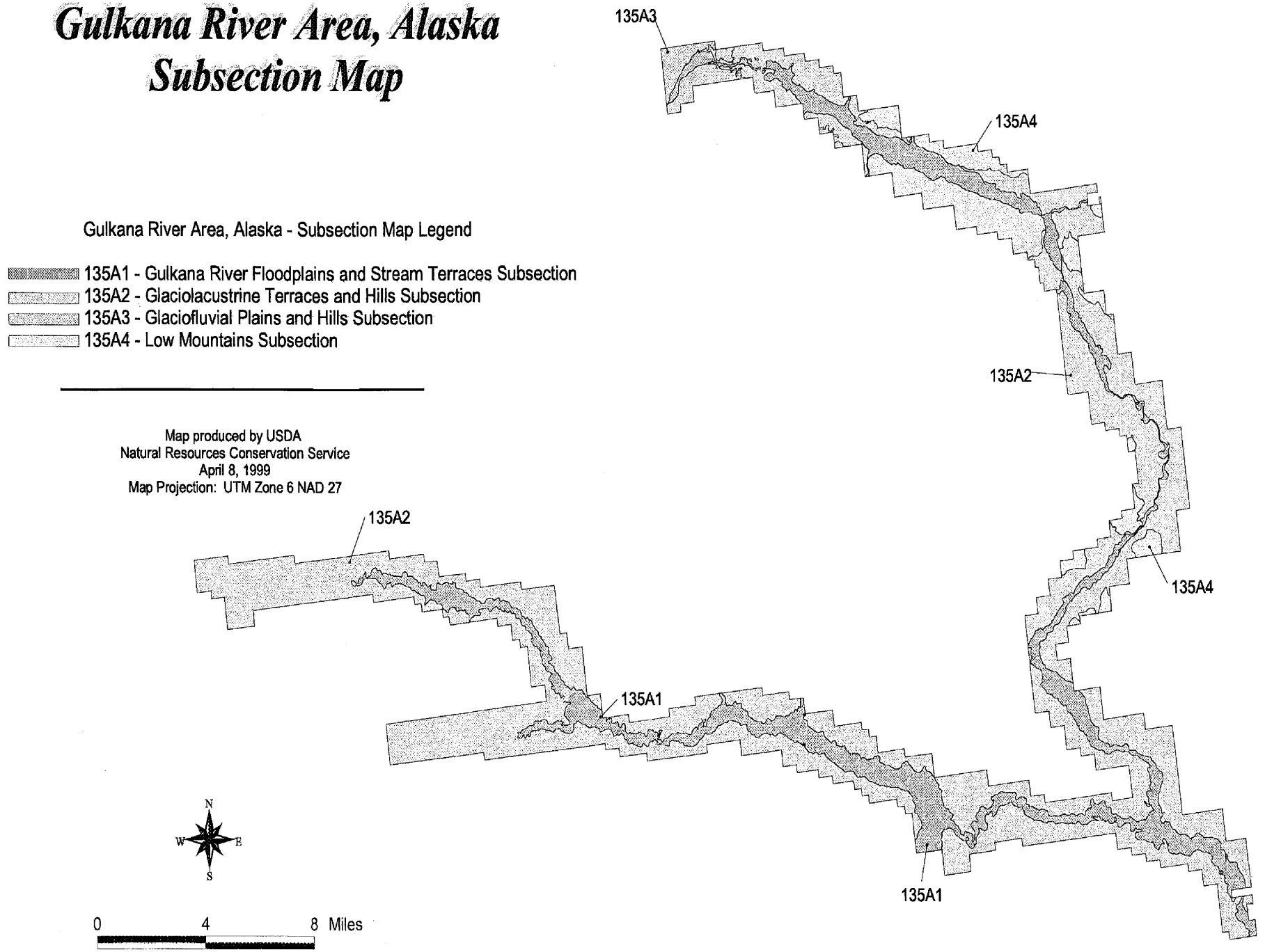
Common_name	Stratum	Con	Avg	Min	Max	Imp
white spruce	T2	100	1	1	1	7
Labrador-tea	SS	100	45	45	45	67
black crowberry	SS	100	10	10	10	32
bog blueberry	SS	100	35	35	35	59
grayleaf willow	SS	100	1	1	1	7
lowbush cranberry	SS	100	30	30	30	55
prickly rose	SS	100	1	1	1	7
shrub birch	SS	100	60	60	60	77
willow	SS	100	1	1	1	7
bluejoint reedgrass	G	100	1	1	1	7
Moss layer	M	100	65	65	65	81
Lichen layer	L	100	15	15	15	39
Bare soil	B	100	1	1	1	7
Litter and mulch	B	100	10	10	10	32
Rock fragments	B	100	1	1	1	7
Woody litter (>1" dia.)	B	100	7	7	7	26

Salix spp. includes: SAPL2



Representative cross section of mountains slopes above the upper Main Stem.

Gulkana River Area, Alaska Subsection Map



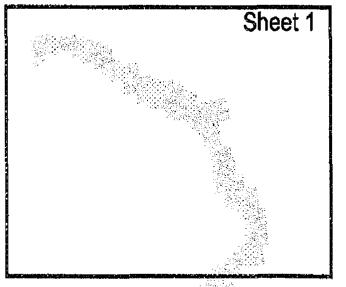
Gulkana River Area, Alaska - Subsection Map Legend

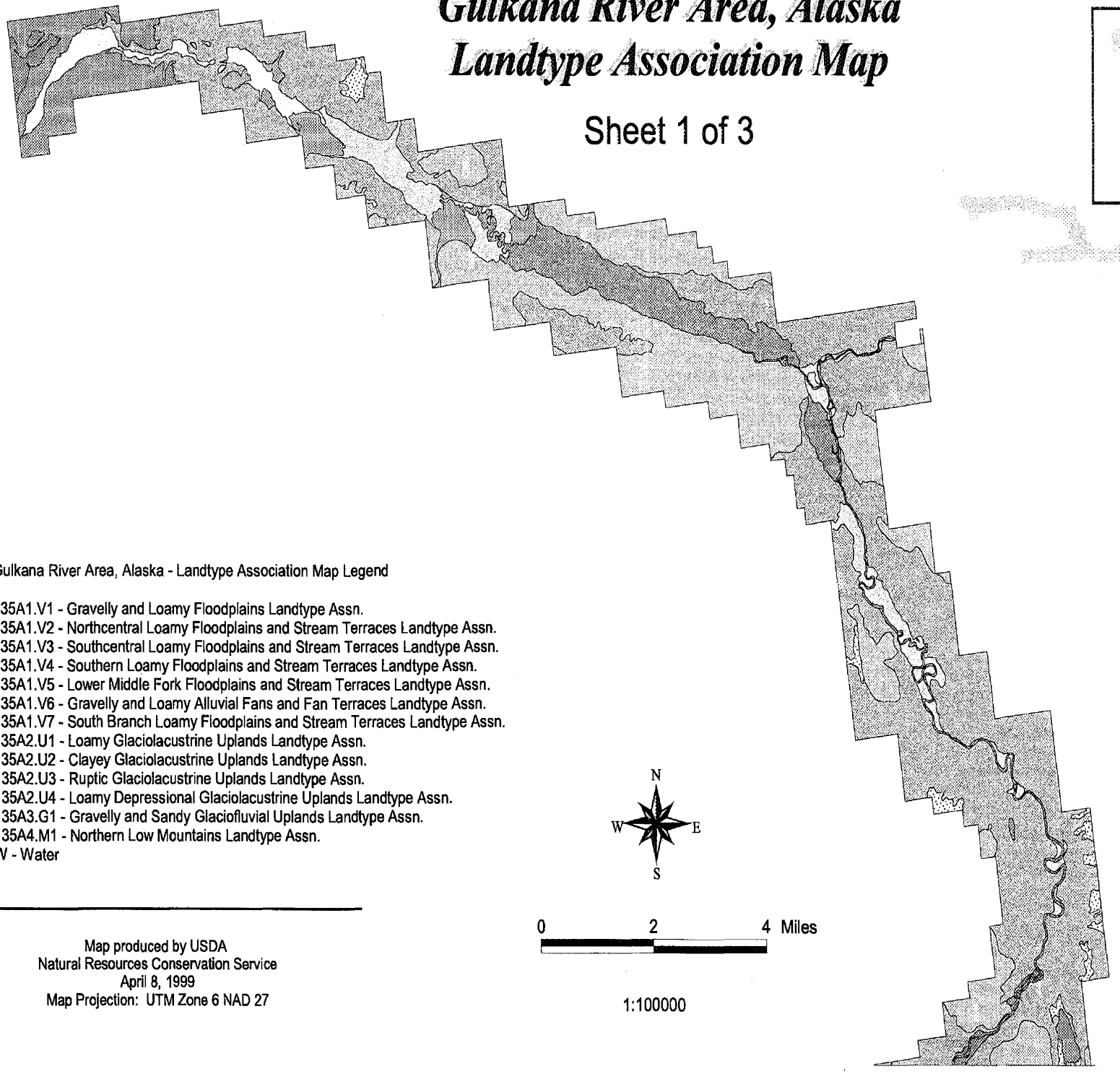
- 135A1 - Gulkana River Floodplains and Stream Terraces Subsection
- 135A2 - Glaciolacustrine Terraces and Hills Subsection
- 135A3 - Glaciofluvial Plains and Hills Subsection
- 135A4 - Low Mountains Subsection

Map produced by USDA
Natural Resources Conservation Service
April 8, 1999
Map Projection: UTM Zone 6 NAD 27

Gulkana River Area, Alaska
Landtype Association Map

Sheet 1 of 3





Gulkana River Area, Alaska - Landtype Association Map Legend

- 135A1.V1 - Gravelly and Loamy Floodplains Landtype Assn.
- 135A1.V2 - Northcentral Loamy Floodplains and Stream Terraces Landtype Assn.
- 135A1.V3 - Southcentral Loamy Floodplains and Stream Terraces Landtype Assn.
- 135A1.V4 - Southern Loamy Floodplains and Stream Terraces Landtype Assn.
- 135A1.V5 - Lower Middle Fork Floodplains and Stream Terraces Landtype Assn.
- 135A1.V6 - Gravelly and Loamy Alluvial Fans and Fan Terraces Landtype Assn.
- 135A1.V7 - South Branch Loamy Floodplains and Stream Terraces Landtype Assn.
- 135A2.U1 - Loamy Glaciolacustrine Uplands Landtype Assn.
- 135A2.U2 - Clayey Glaciolacustrine Uplands Landtype Assn.
- 135A2.U3 - Ruptic Glaciolacustrine Uplands Landtype Assn.
- 135A2.U4 - Loamy Depressional Glaciolacustrine Uplands Landtype Assn.
- 135A3.G1 - Gravelly and Sandy Glaciofluvial Uplands Landtype Assn.
- 135A4.M1 - Northern Low Mountains Landtype Assn.
- W - Water

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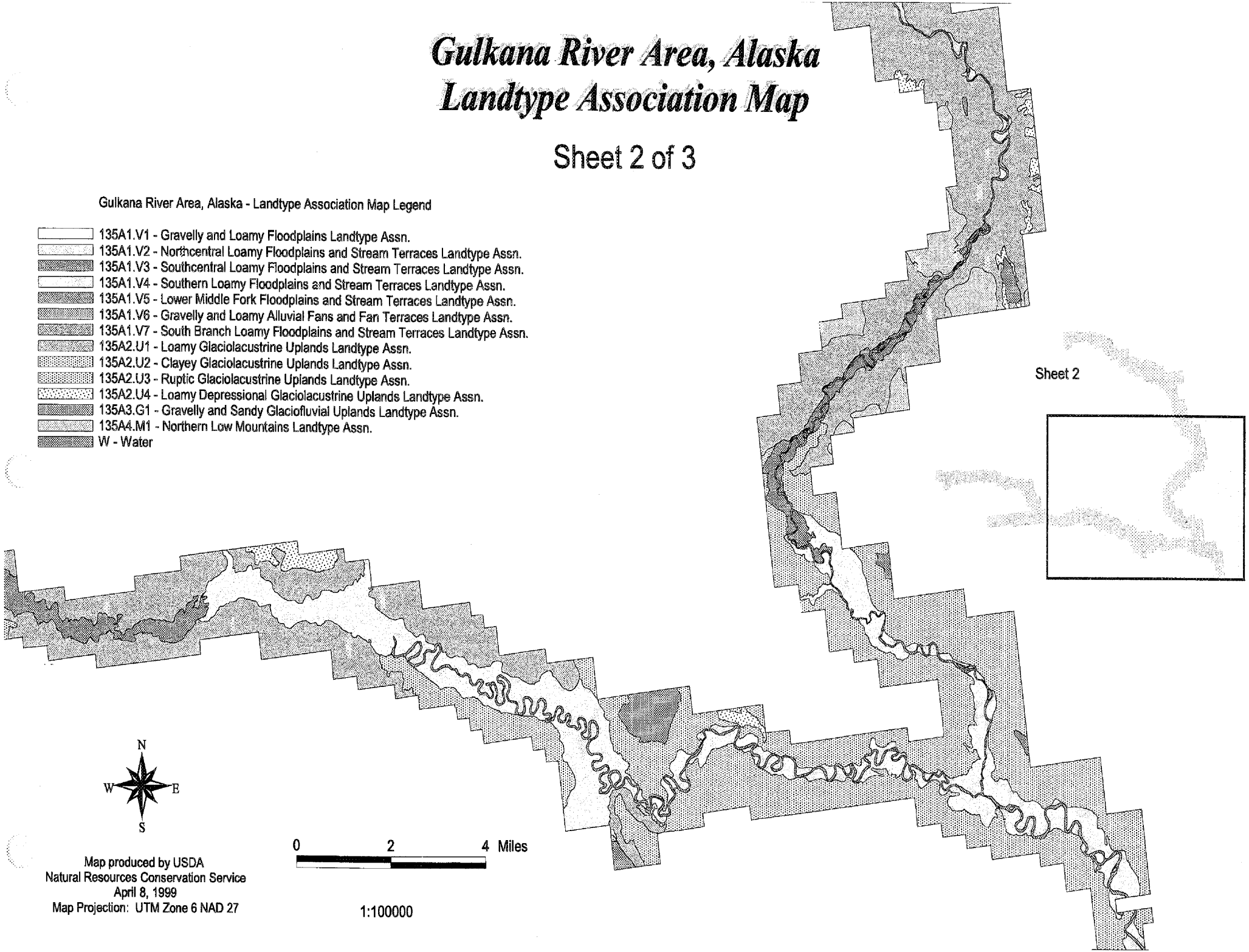
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Map produced by USDA
Natural Resources Conservation Service
April 8, 1999
Map Projection: UTM Zone 6 NAD 27

Gulkana River Area, Alaska
Landtype Association Map

Sheet 2 of 3

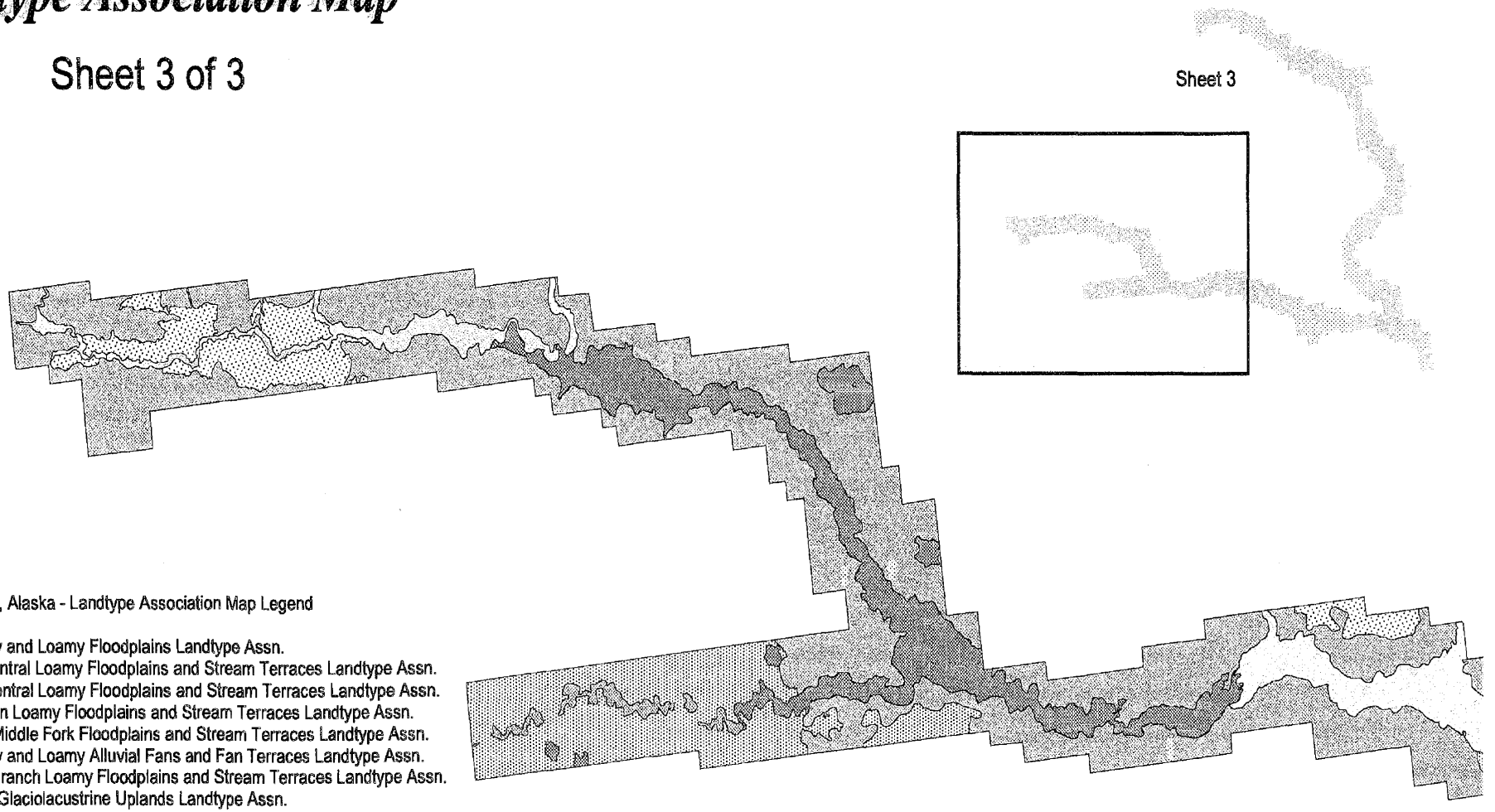


Map produced by USDA
Natural Resources Conservation Service
April 8, 1999
Map Projection: UTM Zone 6 NAD 27

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Gulkana River Area, Alaska
Landtype Association Map

Sheet 3 of 3



Gulkana River Area, Alaska - Landtype Association Map Legend

- 135A1.V1 - Gravelly and Loamy Floodplains Landtype Assn.
- 135A1.V2 - Northcentral Loamy Floodplains and Stream Terraces Landtype Assn.
- 135A1.V3 - Southcentral Loamy Floodplains and Stream Terraces Landtype Assn.
- 135A1.V4 - Southern Loamy Floodplains and Stream Terraces Landtype Assn.
- 135A1.V5 - Lower Middle Fork Floodplains and Stream Terraces Landtype Assn.
- 135A1.V6 - Gravelly and Loamy Alluvial Fans and Fan Terraces Landtype Assn.
- 135A1.V7 - South Branch Loamy Floodplains and Stream Terraces Landtype Assn.
- 135A2.U1 - Loamy Glaciolacustrine Uplands Landtype Assn.
- 135A2.U2 - Clayey Glaciolacustrine Uplands Landtype Assn.
- 135A2.U3 - Ruptic Glaciolacustrine Uplands Landtype Assn.
- 135A2.U4 - Loamy Depressional Glaciolacustrine Uplands Landtype Assn.
- 135A3.G1 - Gravelly and Sandy Glaciofluvial Uplands Landtype Assn.
- 135A4.M1 - Northern Low Mountains Landtype Assn.
- W - Water

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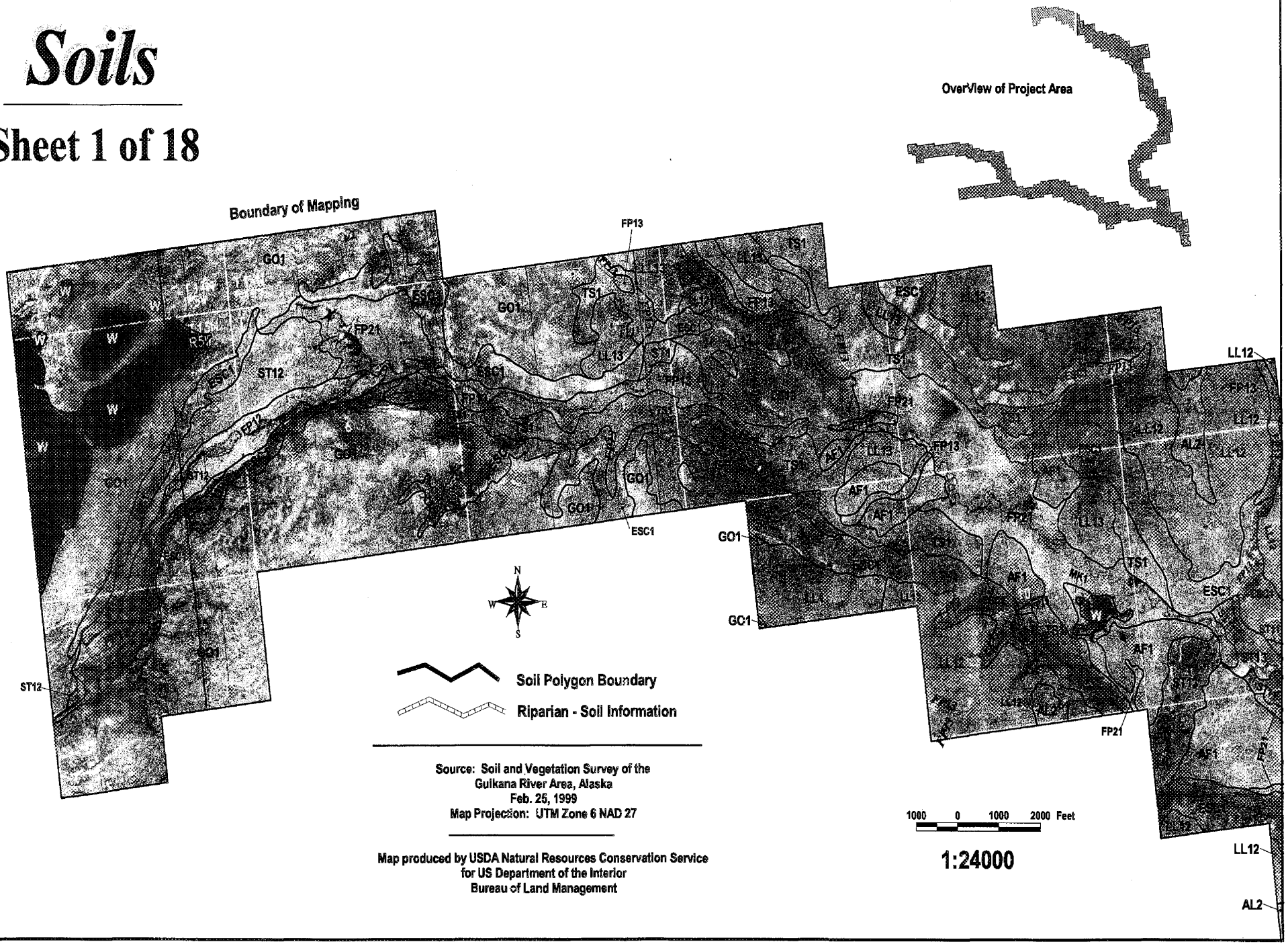
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Natural Resources Conservation Service
April 8, 1999
Map Projection: UTM Zone 6 NAD 27

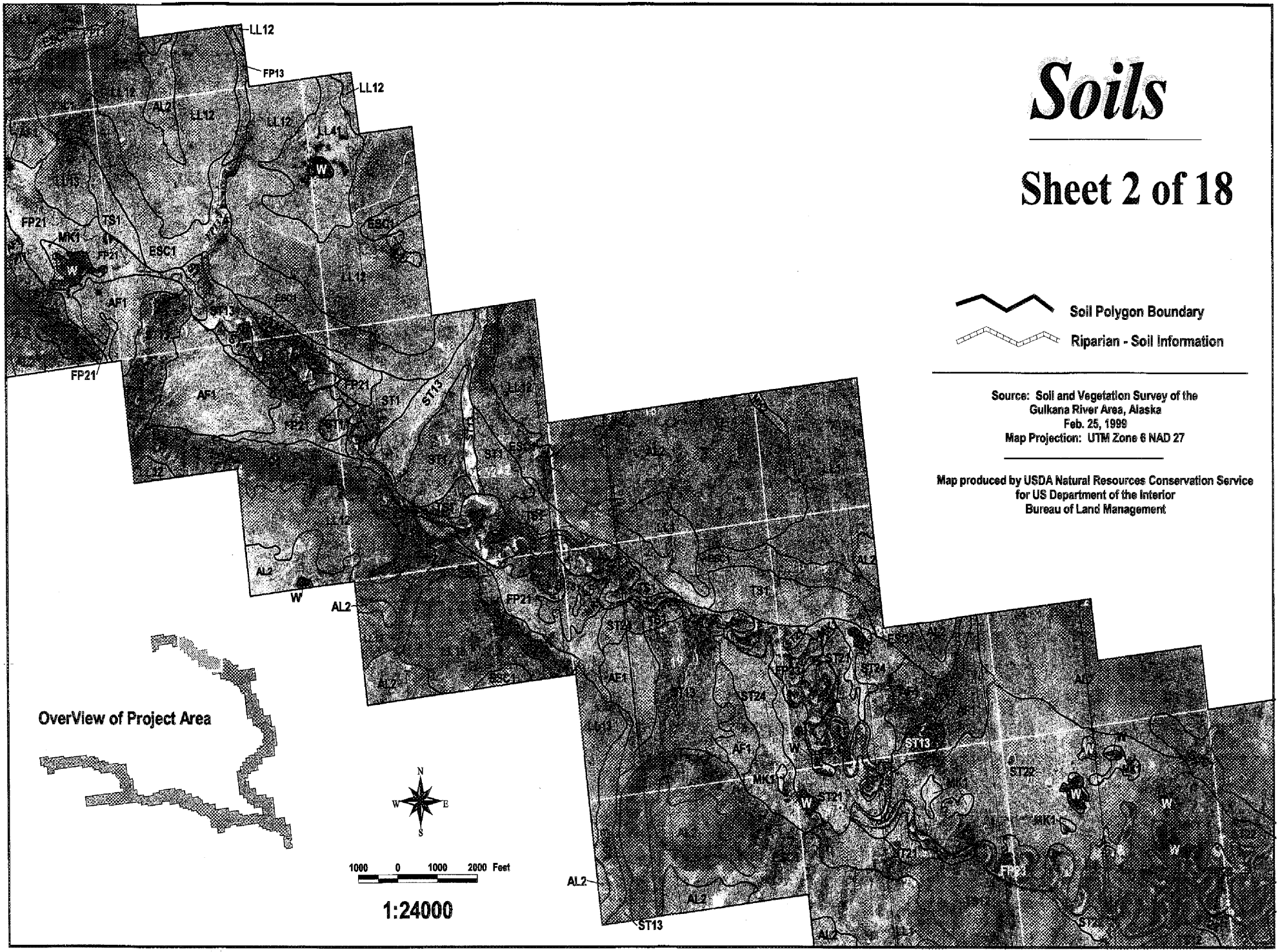
Soils

Sheet 1 of 18



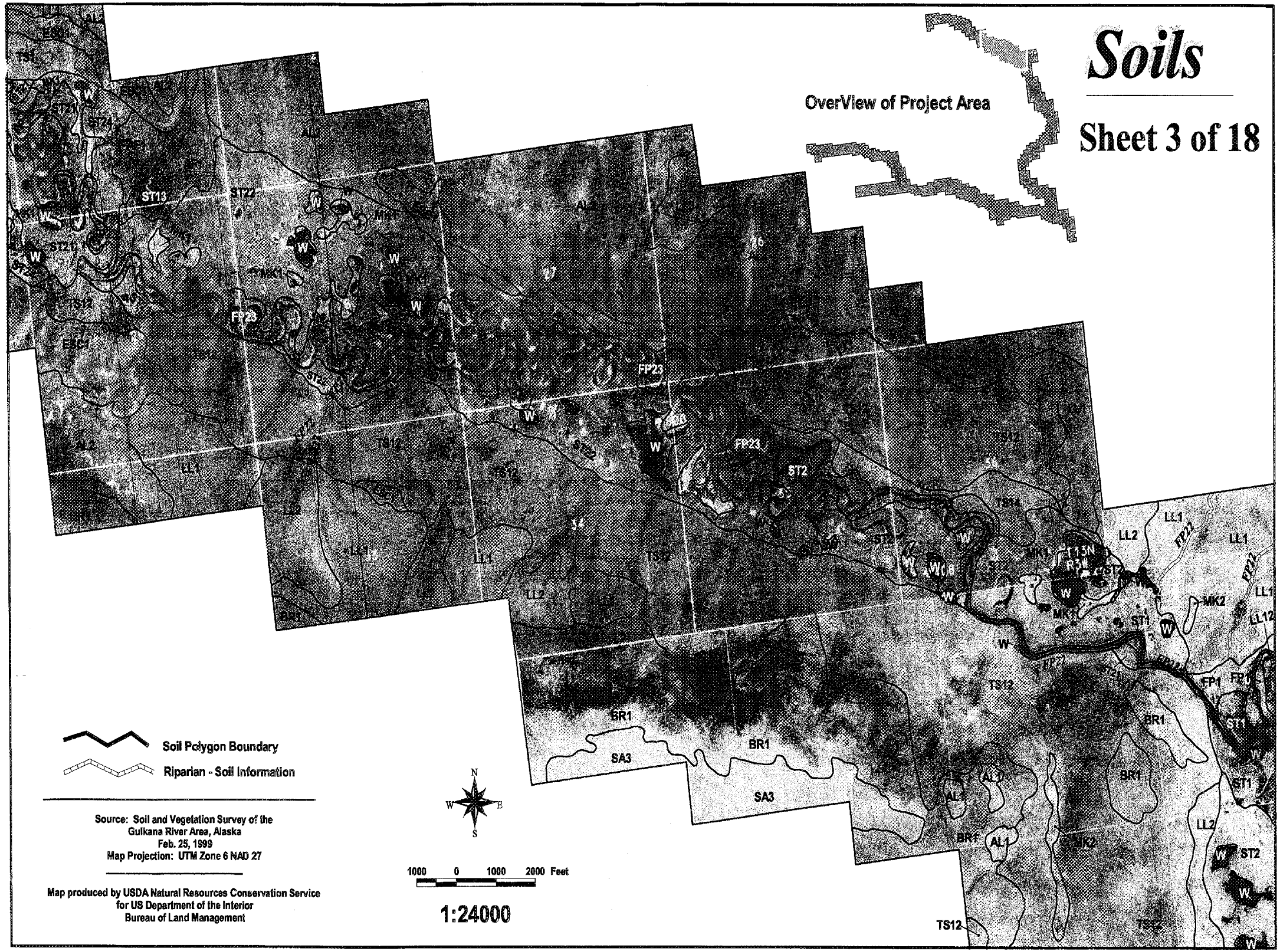
Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

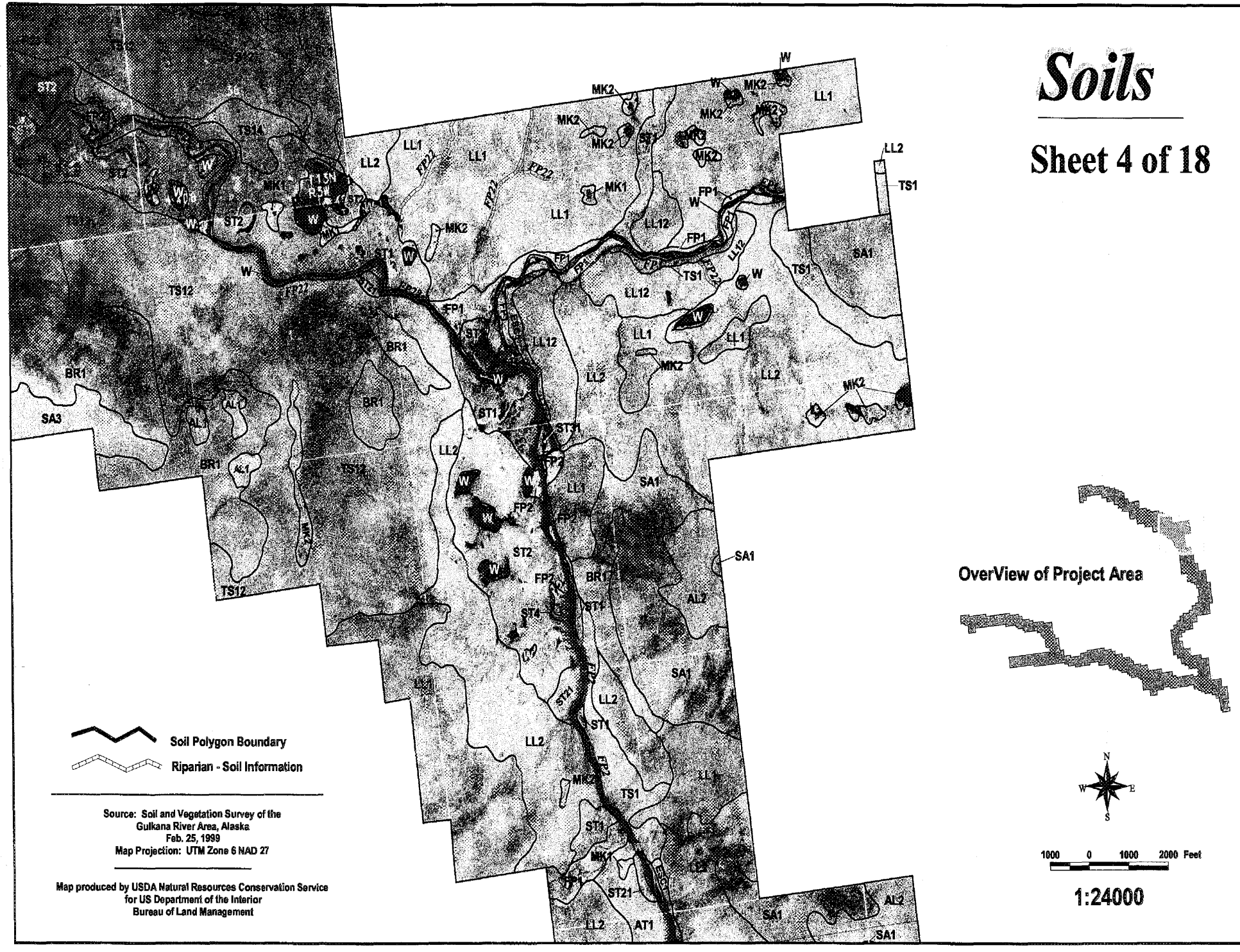
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Bureau of Land Management


Soils
Sheet 2 of 18
Soil Polygon Boundary
Riparian - Soil Information
Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27
Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management
OverView of Project Area
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Soils

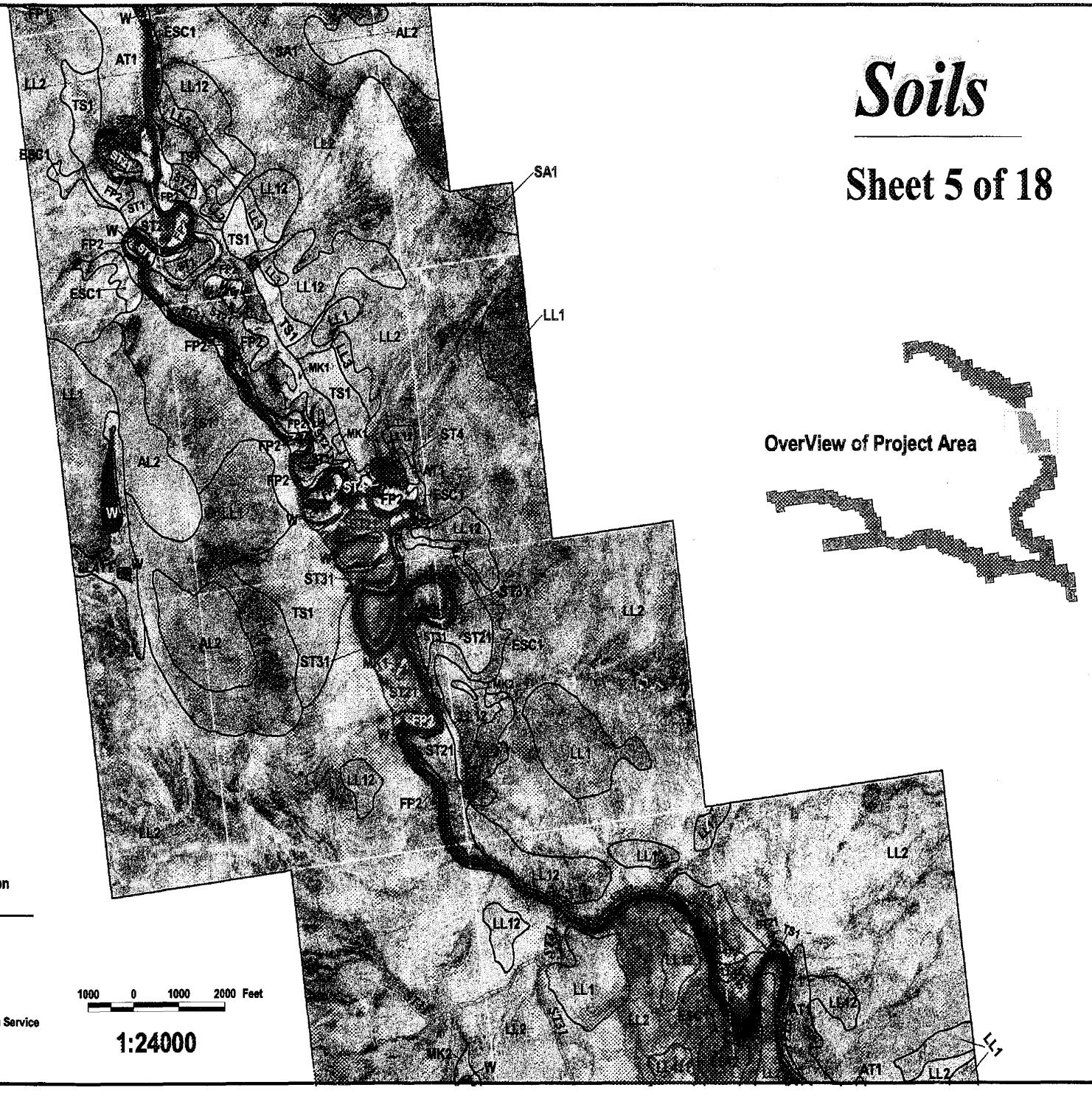
Sheet 3 of 18




Soils
Sheet 4 of 18
OverView of Project Area
Soil Polygon Boundary
Riparian - Soil Information
Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27
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Soils

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OverView of Project Area

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Soil Polygon Boundary

Riparian - Soil Information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

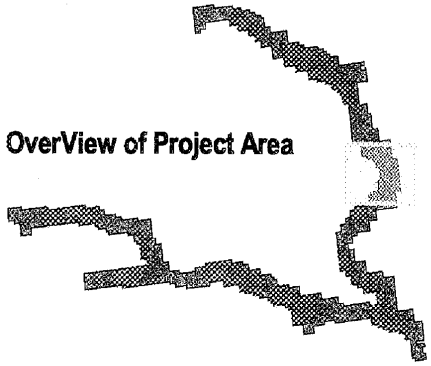
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Soils

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OverView of Project Area



Soil Polygon Boundary

Riparian - Soil Information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
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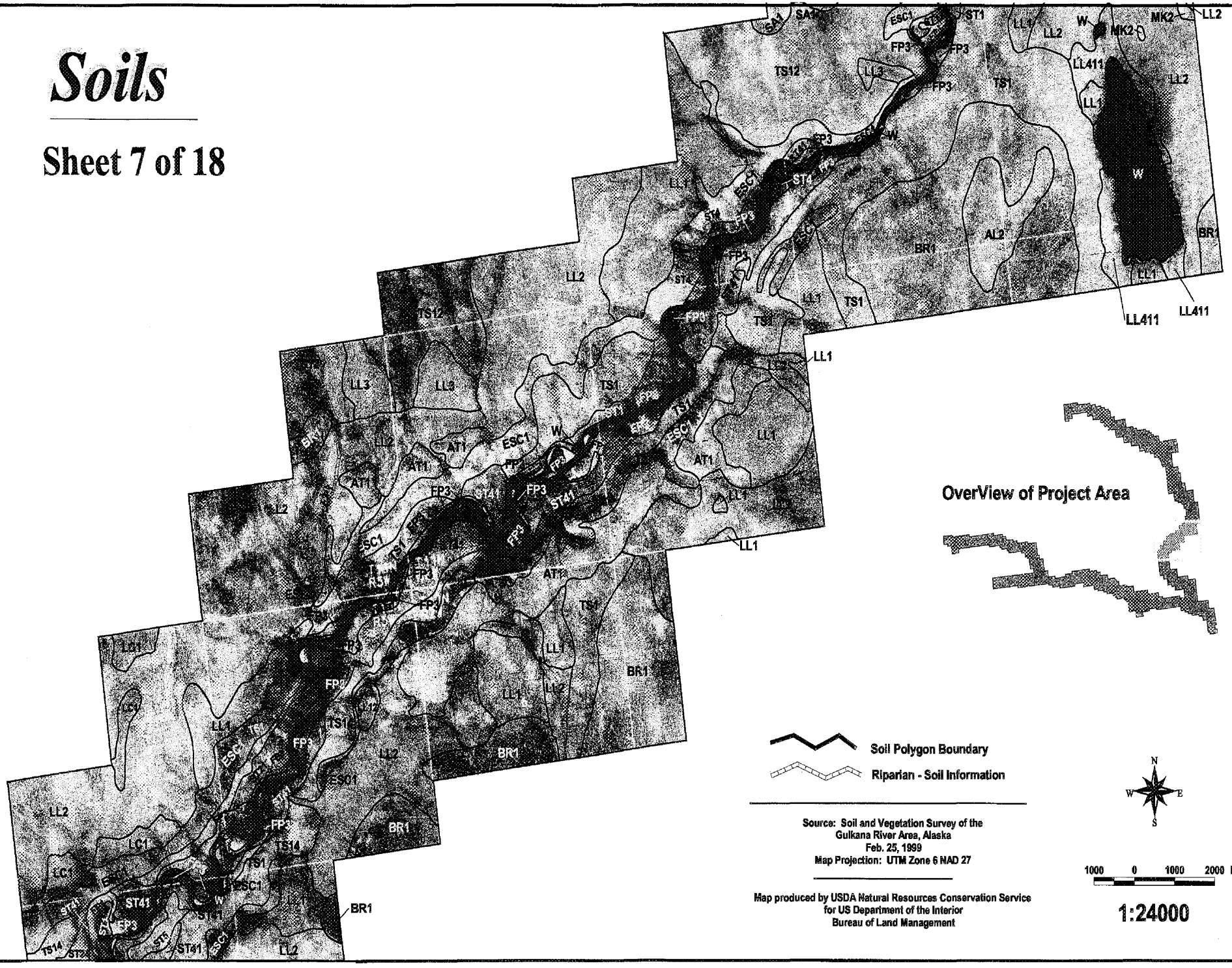
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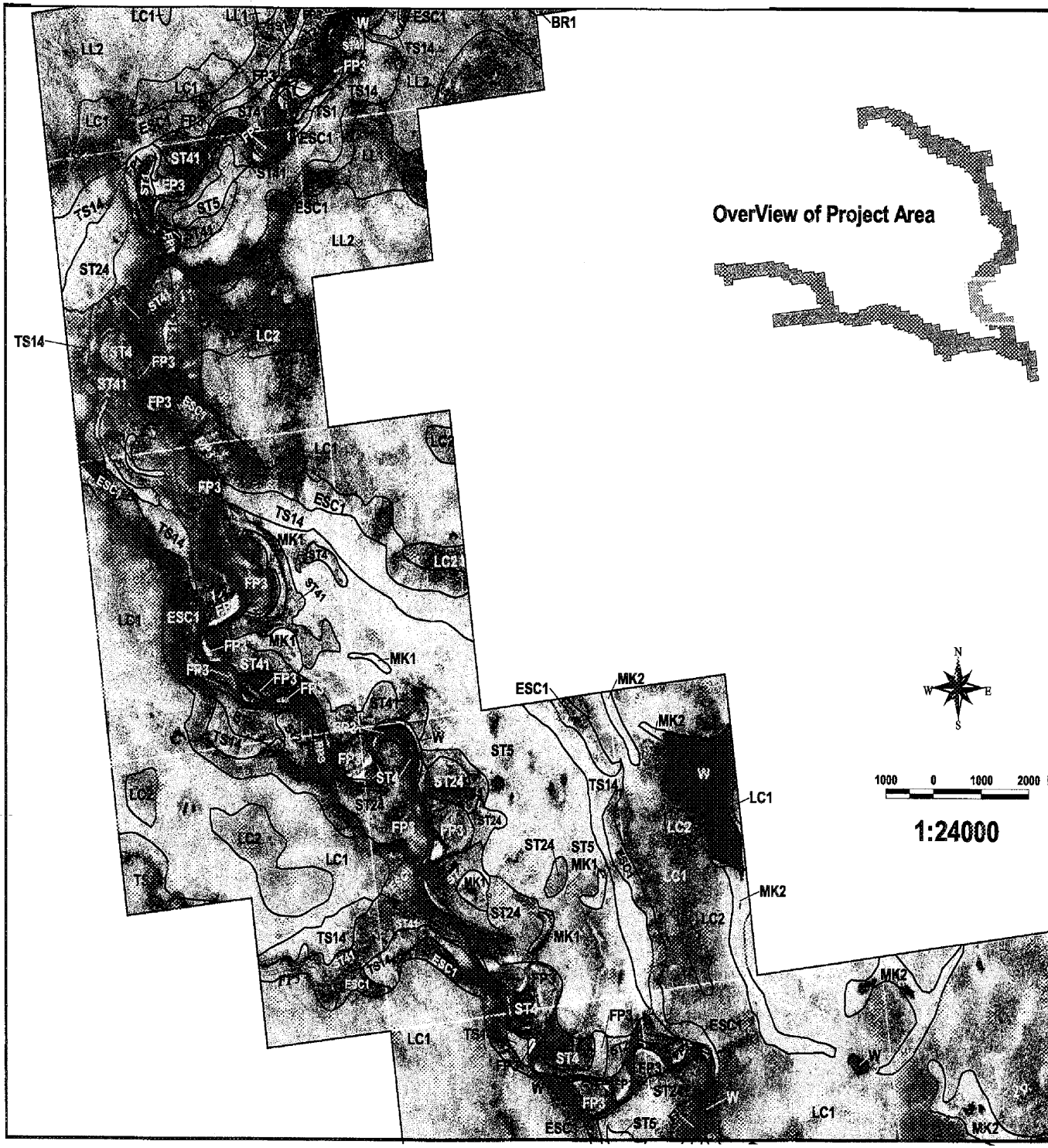
Soils

Sheet 7 of 18


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LL2

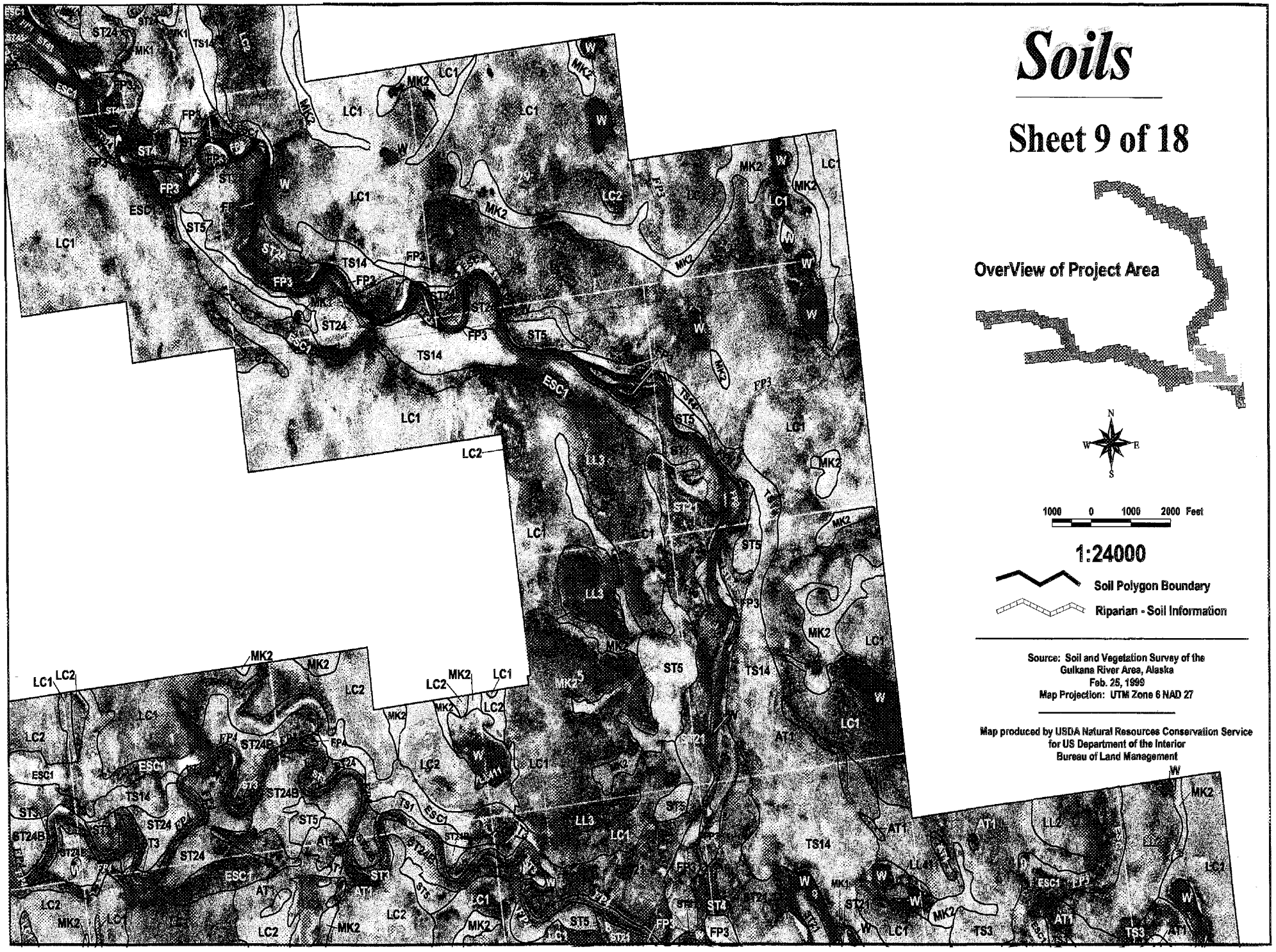
Soils

Sheet 8 of 18



Soils

Sheet 9 of 18



OverView of Project Area

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Soil Polygon Boundary

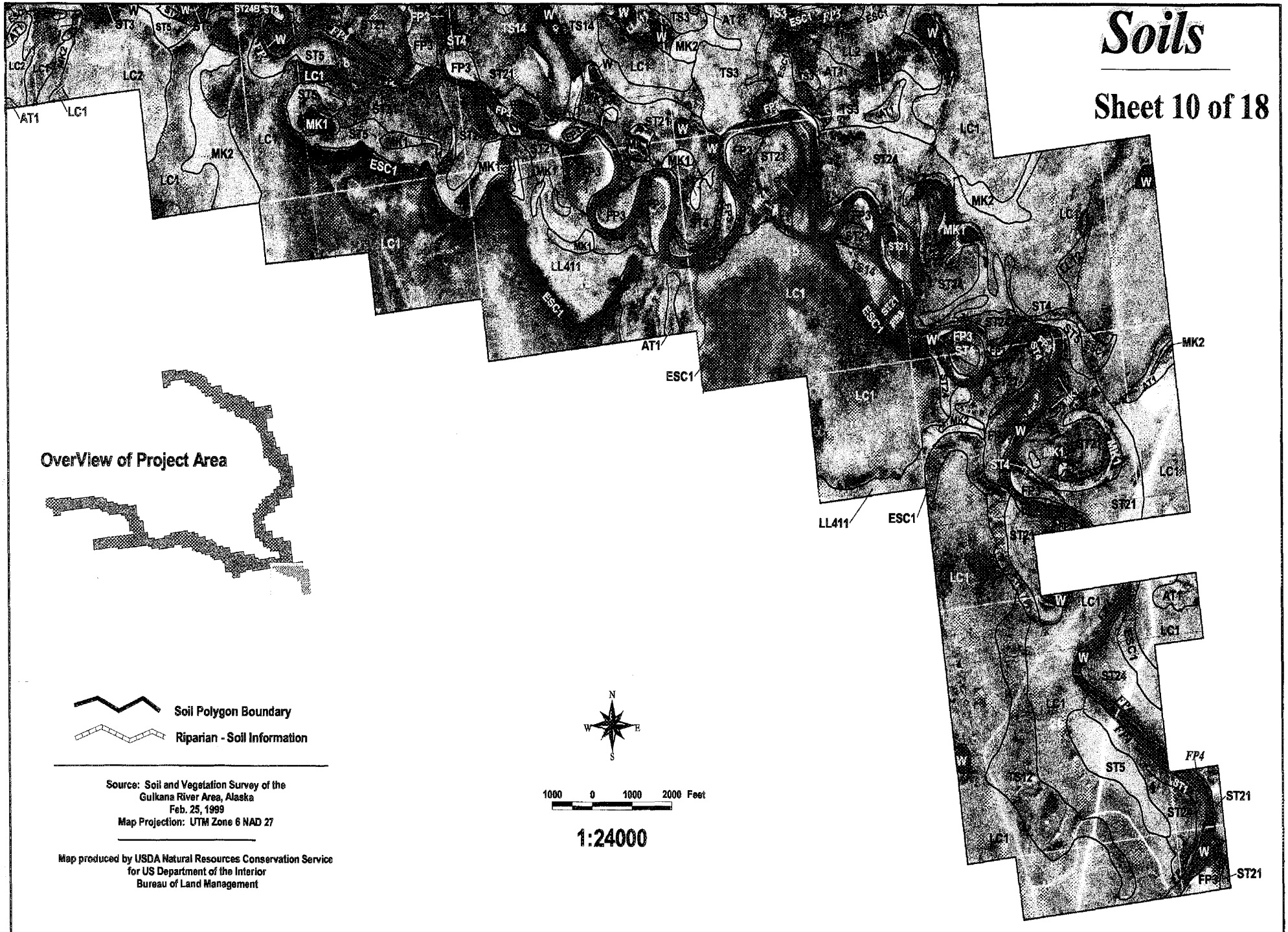
Riparian - Soil Information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

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Soils

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OverView of Project Area

Soil Polygon Boundary

Riparian - Soil Information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

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Bureau of Land Management

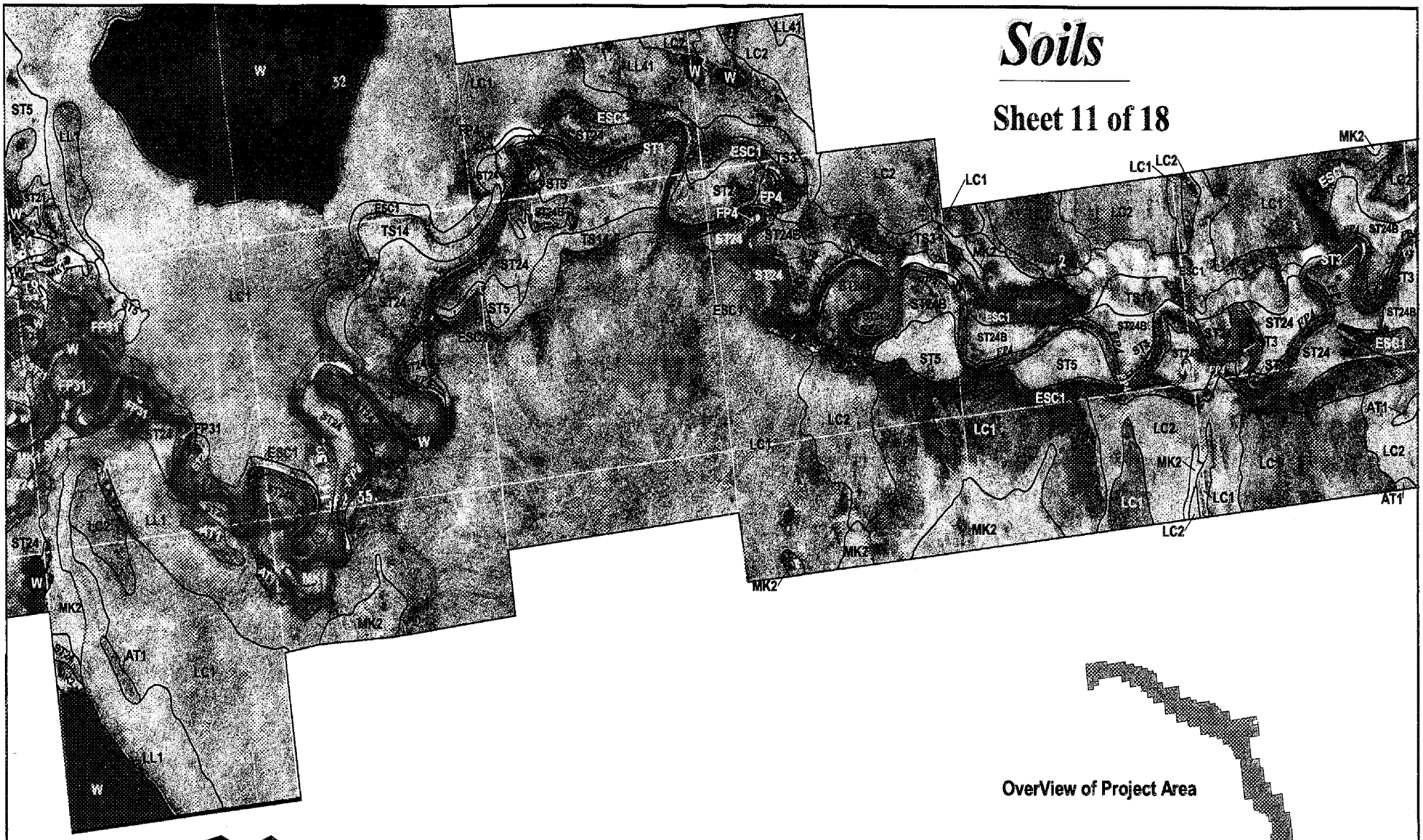
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Soils

Sheet 11 of 18



Soil Polygon Boundary

Riparian - Soil Information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

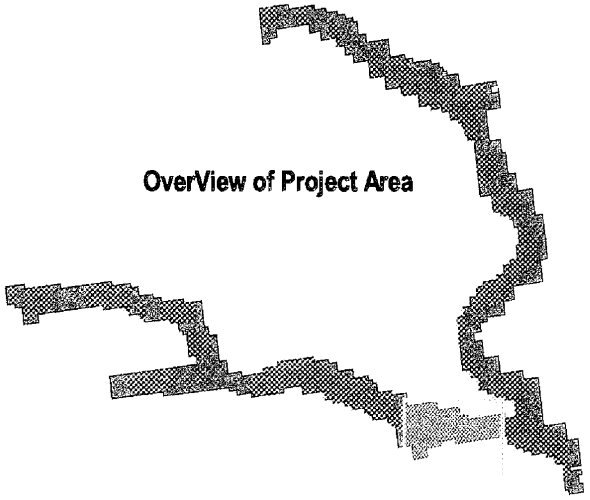
Map produced by USDA Natural Resources Conservation Service
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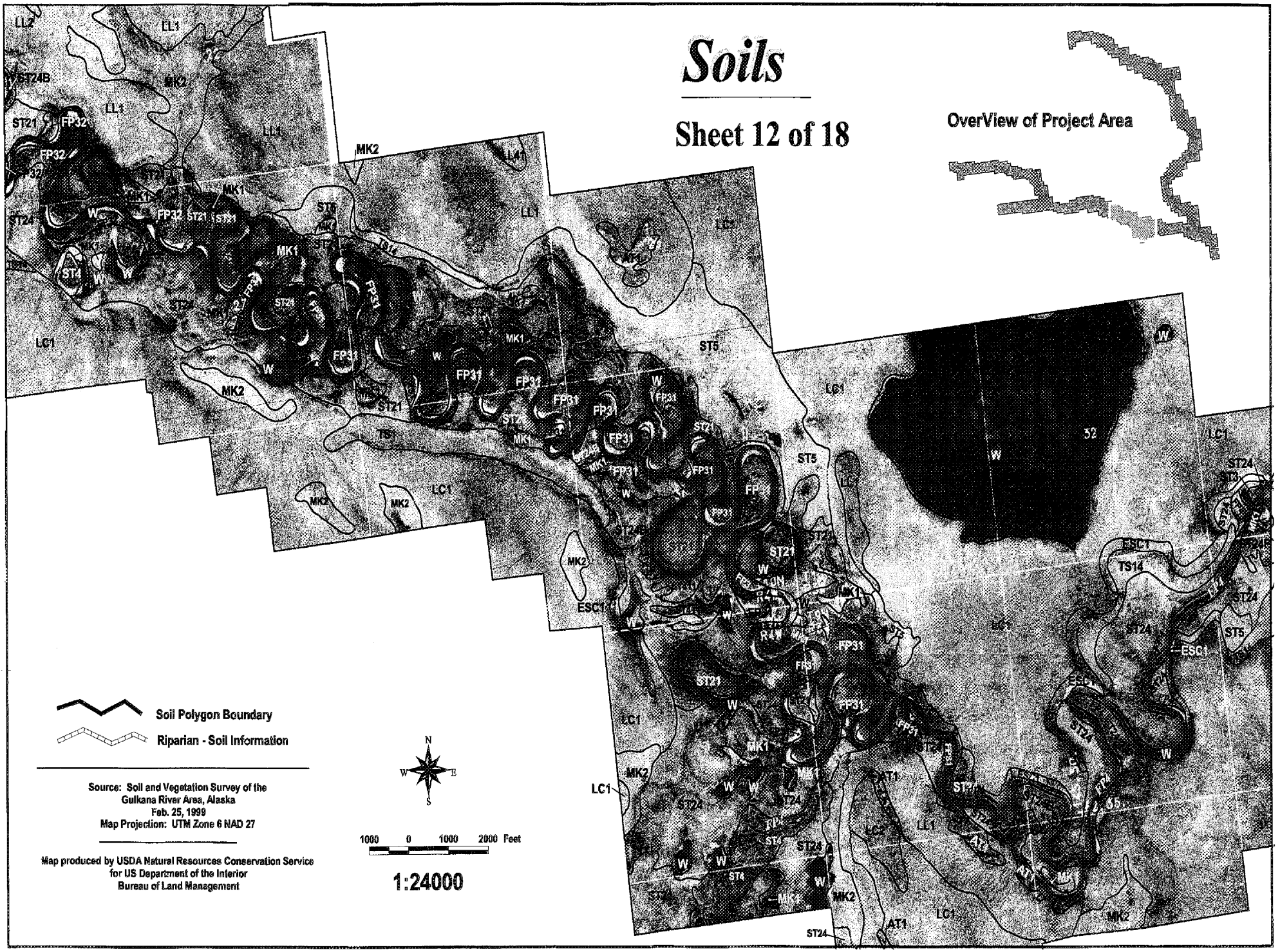
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OverView of Project Area



Soils

Sheet 12 of 18



Soil Polygon Boundary

Riparian - Soil Information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management

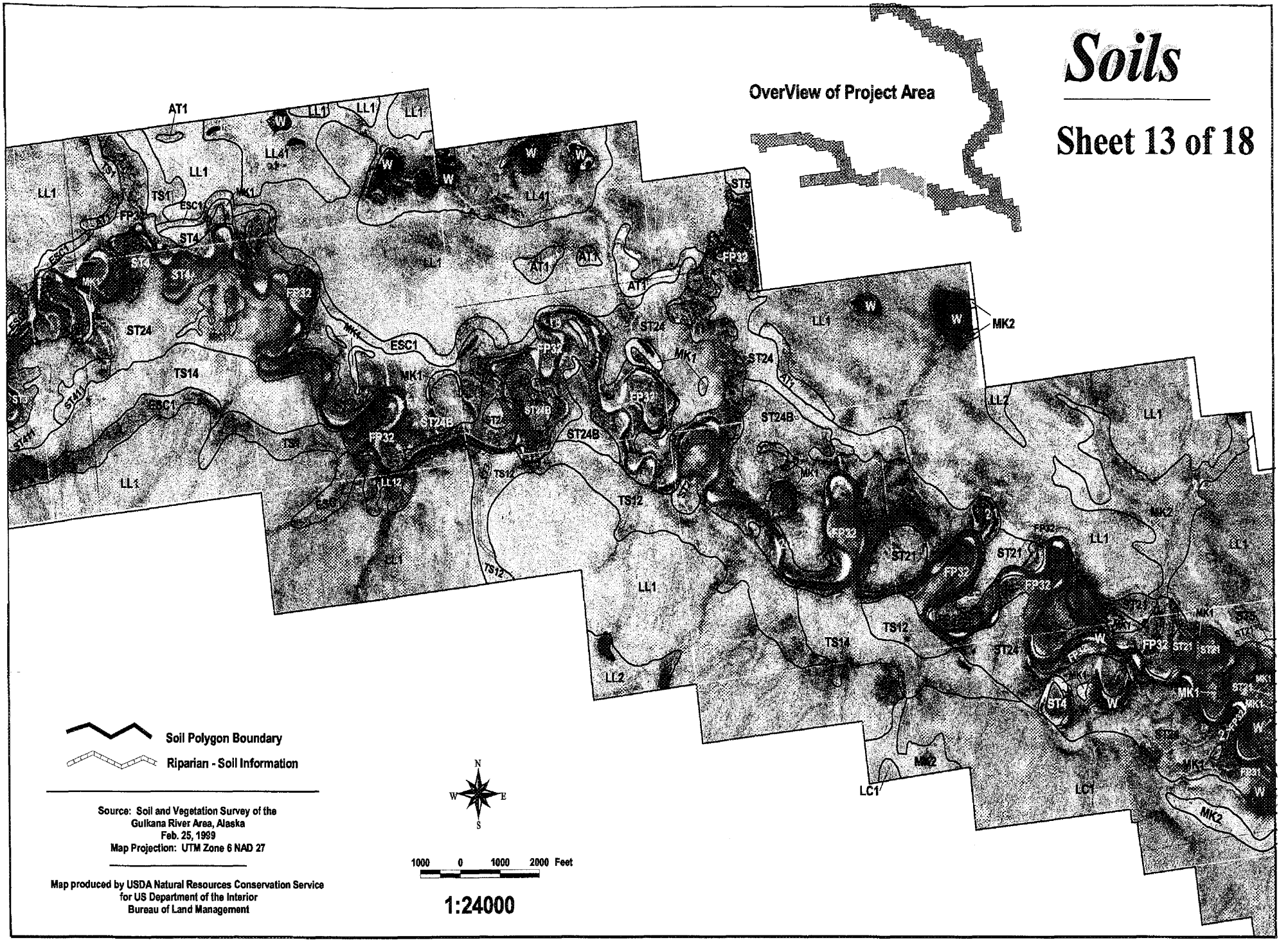
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Soils

Sheet 13 of 18

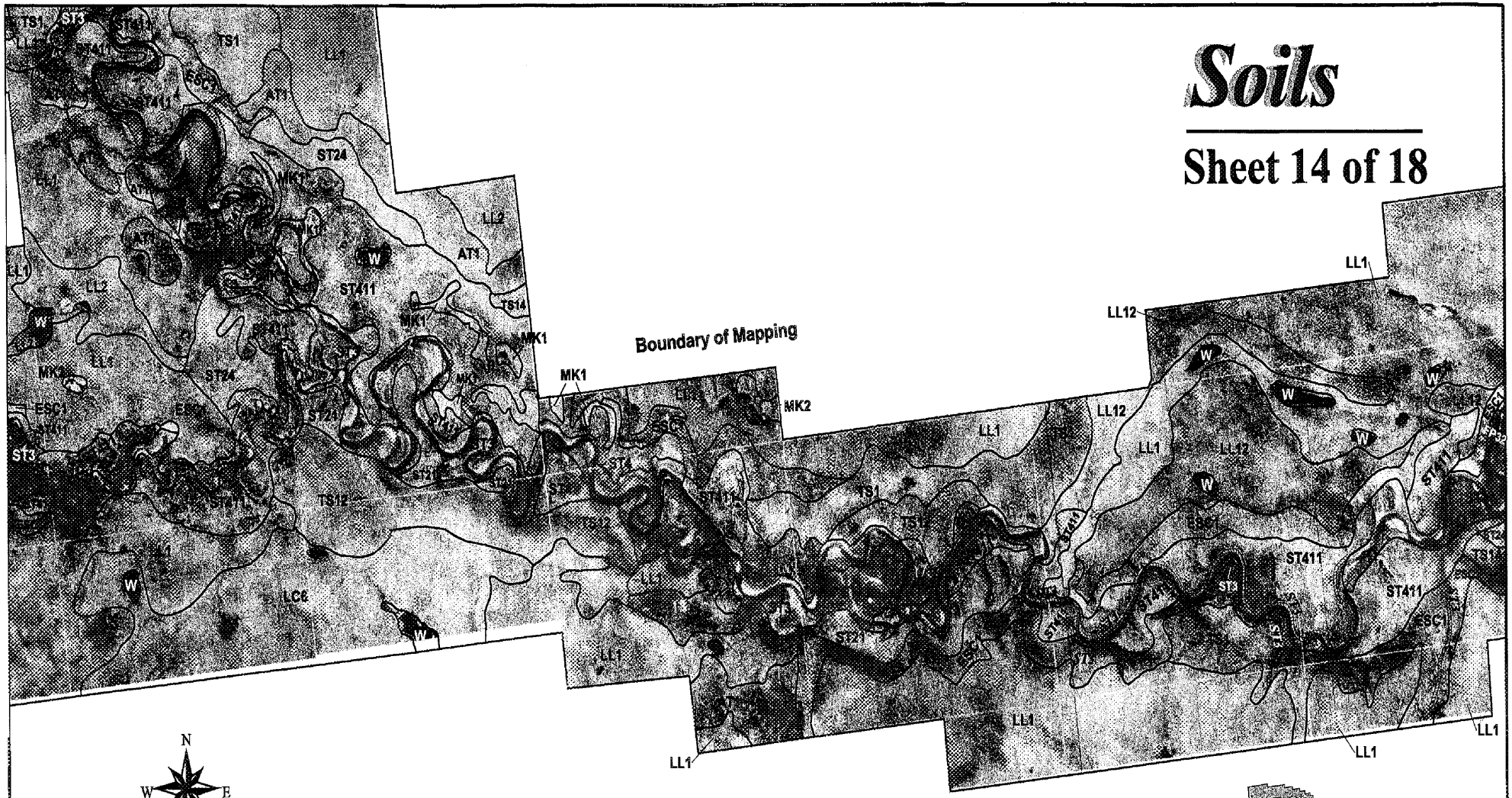


Source: Soil and Vegetation Survey of the
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Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
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Bureau of Land Management

Soils

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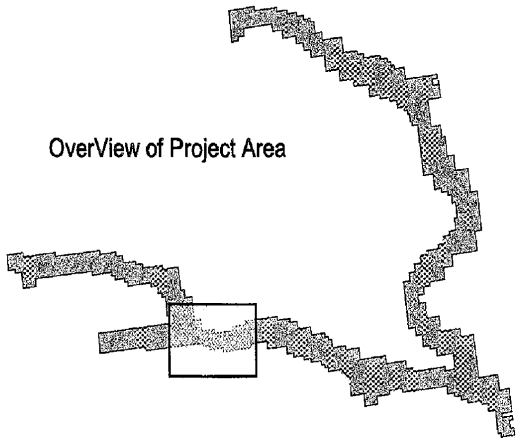
Soil Polygon Boundary

Riparian - Soil information

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OverView of Project Area

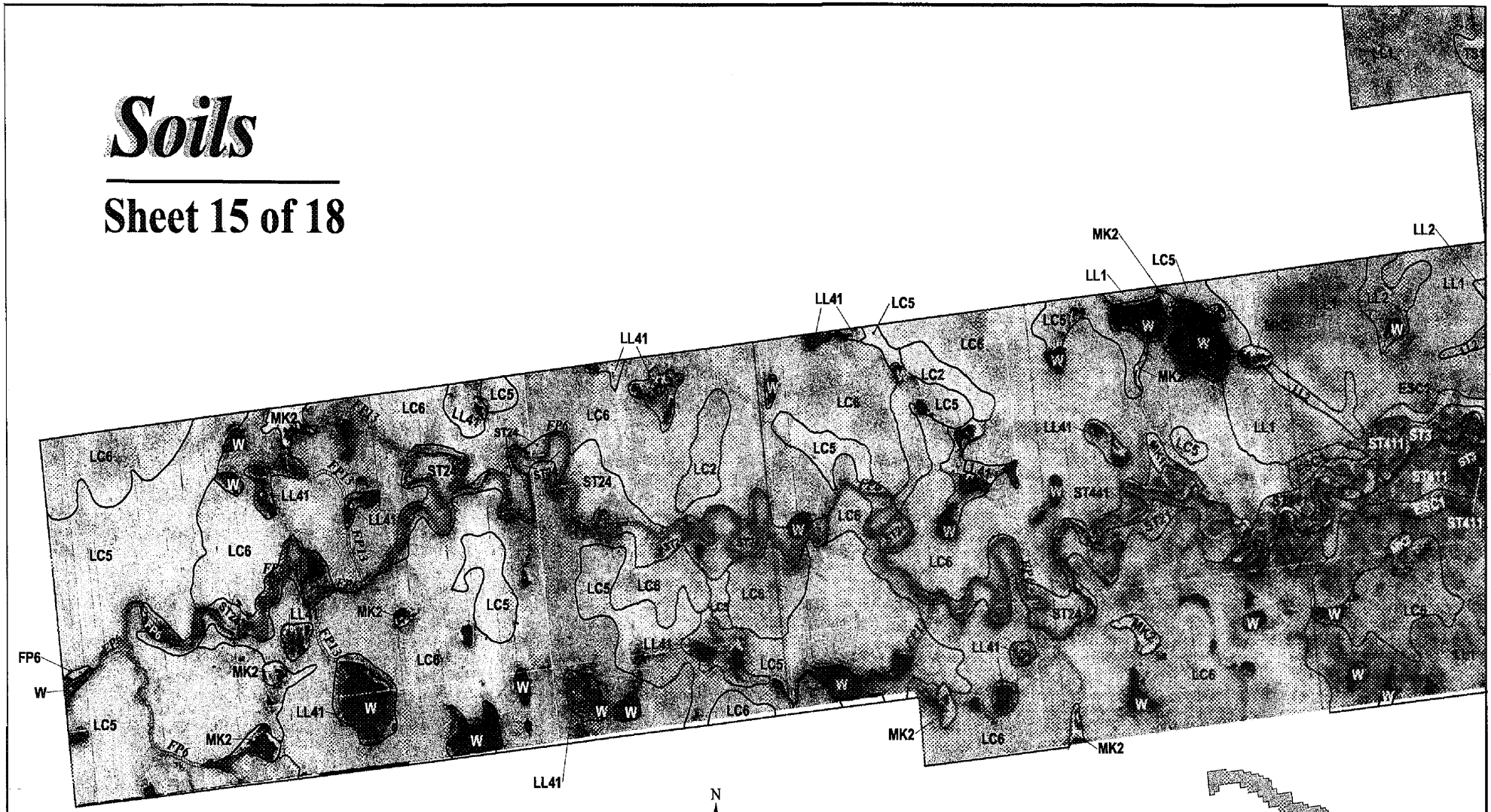


Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

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Soils

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Soil Polygon Boundary

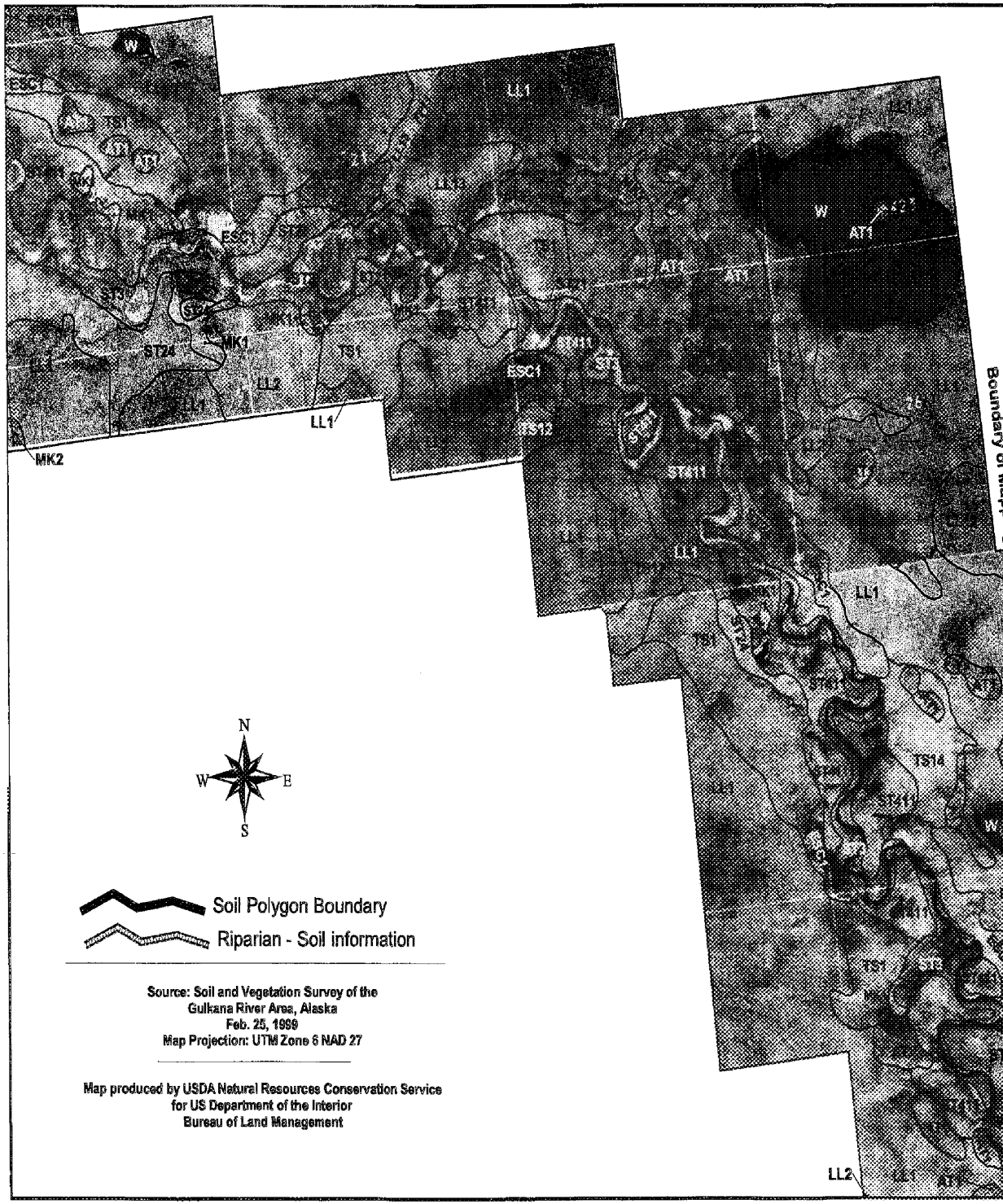
Riparian - Soil information

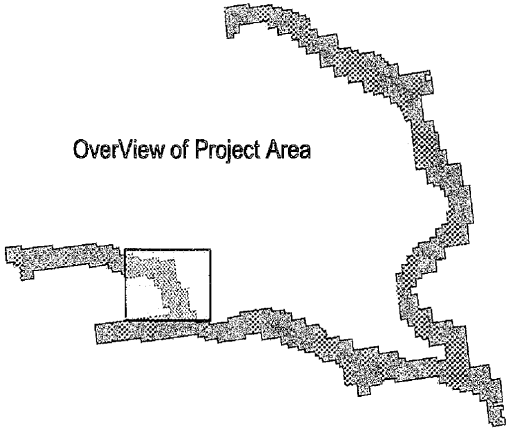
Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
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Soils

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Soil Polygon Boundary

Riparian - Soil information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

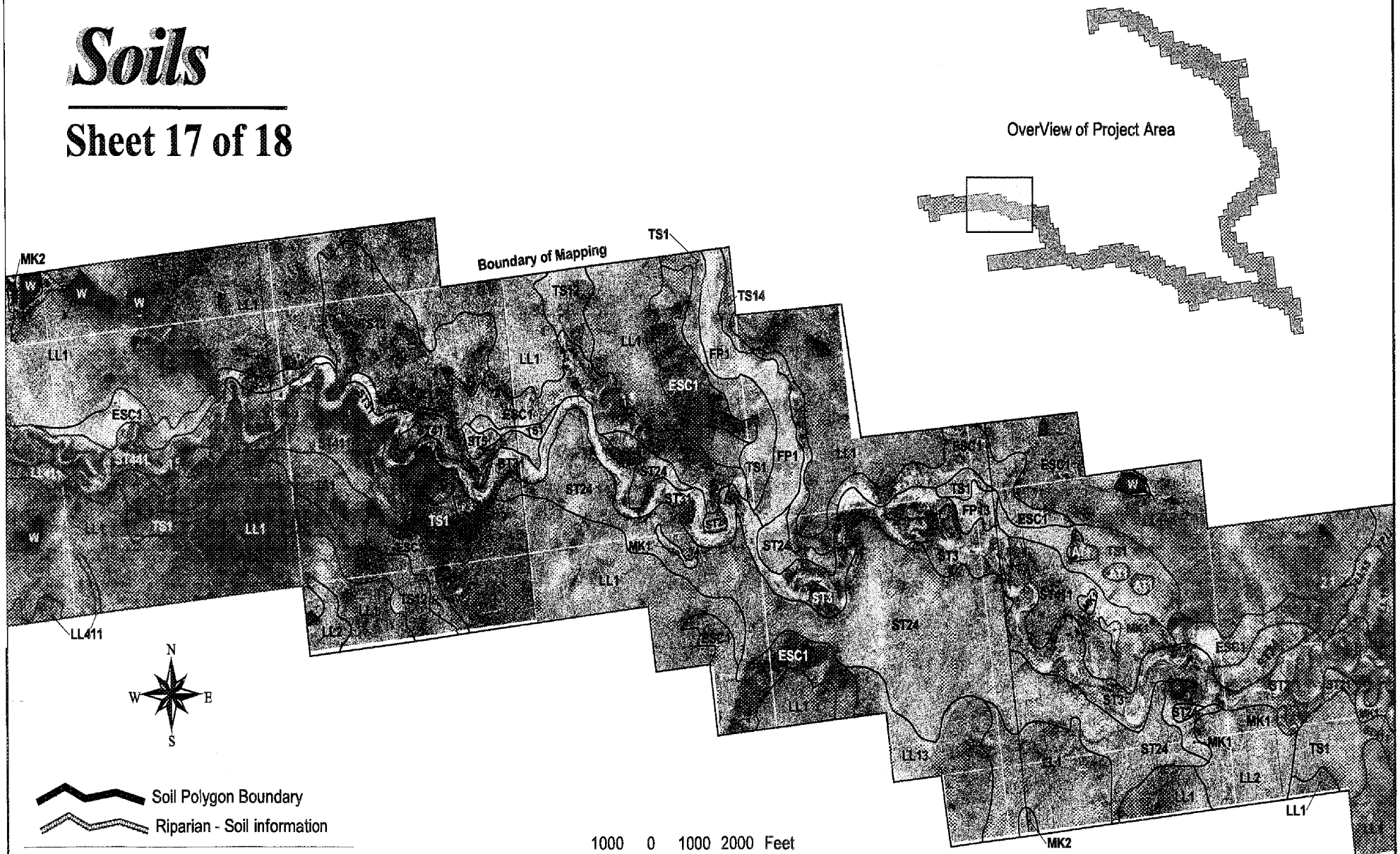
Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management

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Soils

Sheet 17 of 18

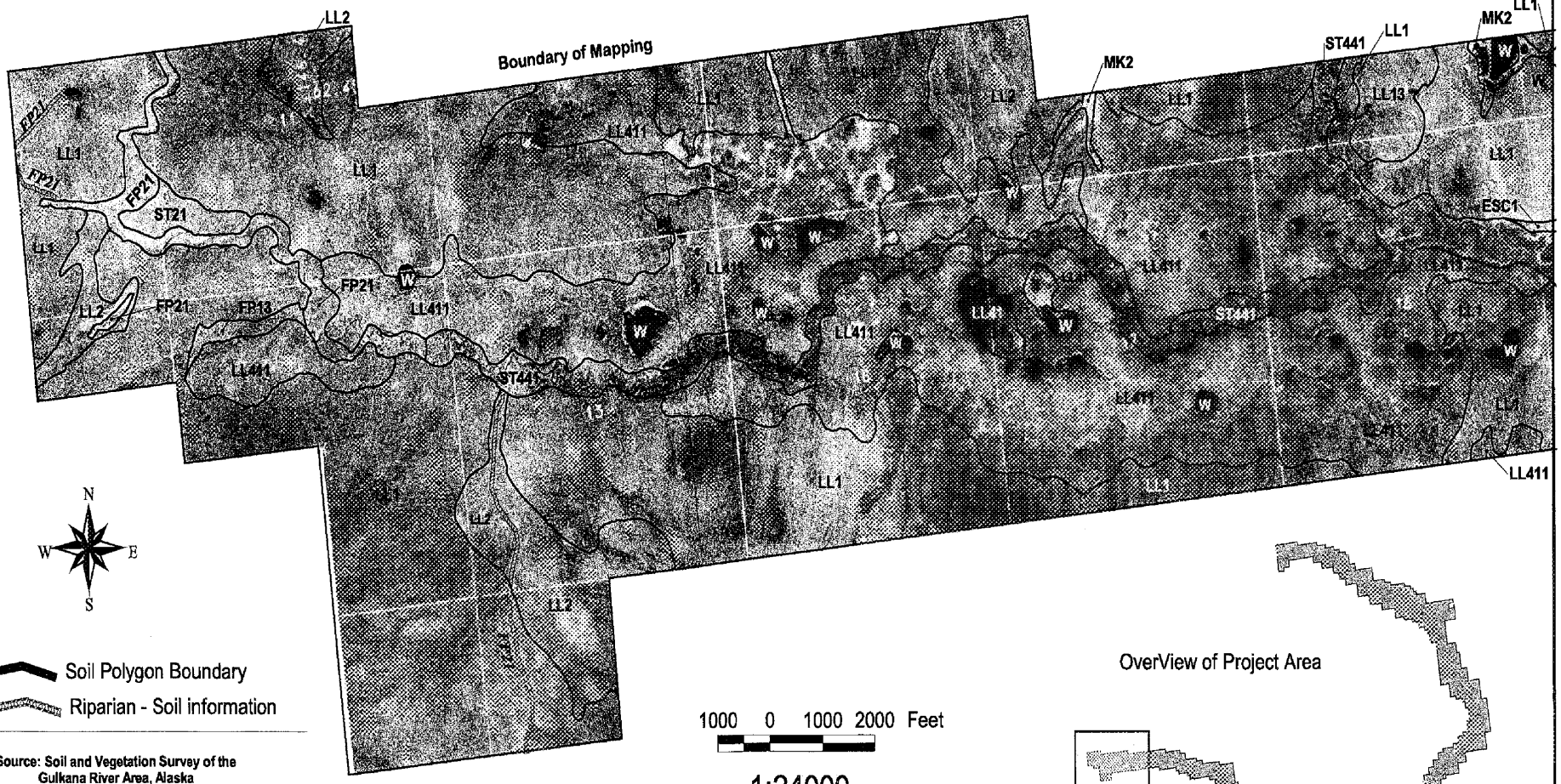


Source: Soil and Vegetation Survey of the
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Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

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Soils

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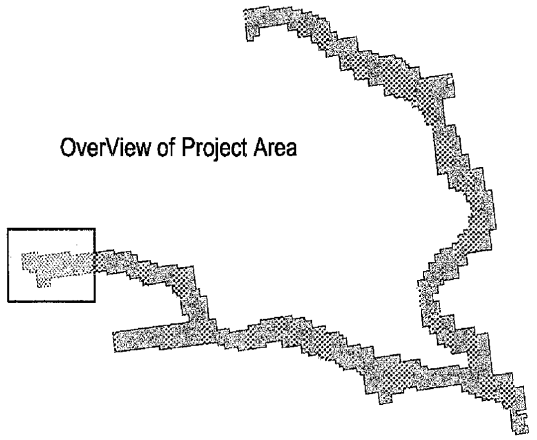
Soil Polygon Boundary

Riparian - Soil information

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OverView of Project Area

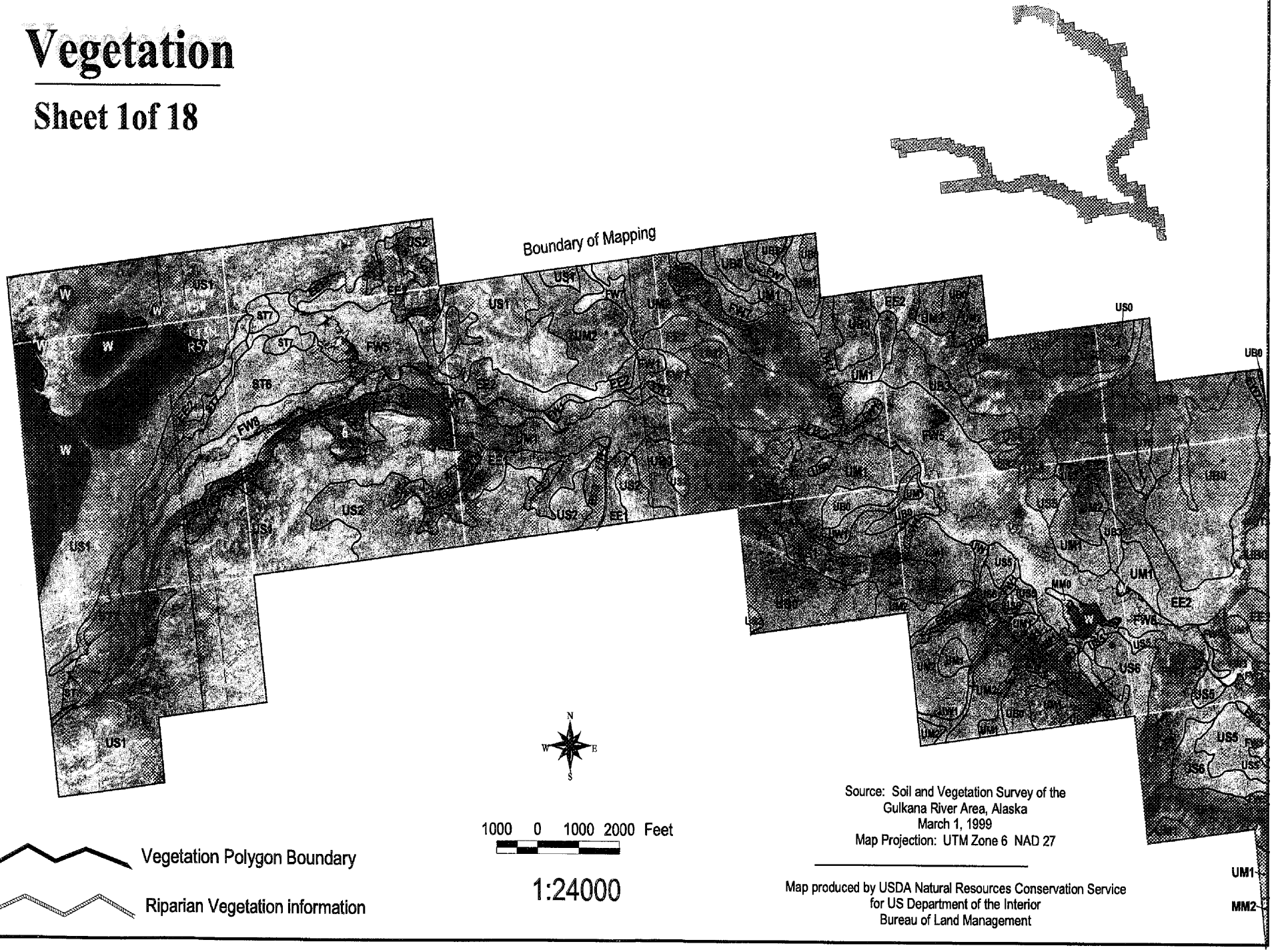


Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
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Bureau of Land Management

Vegetation

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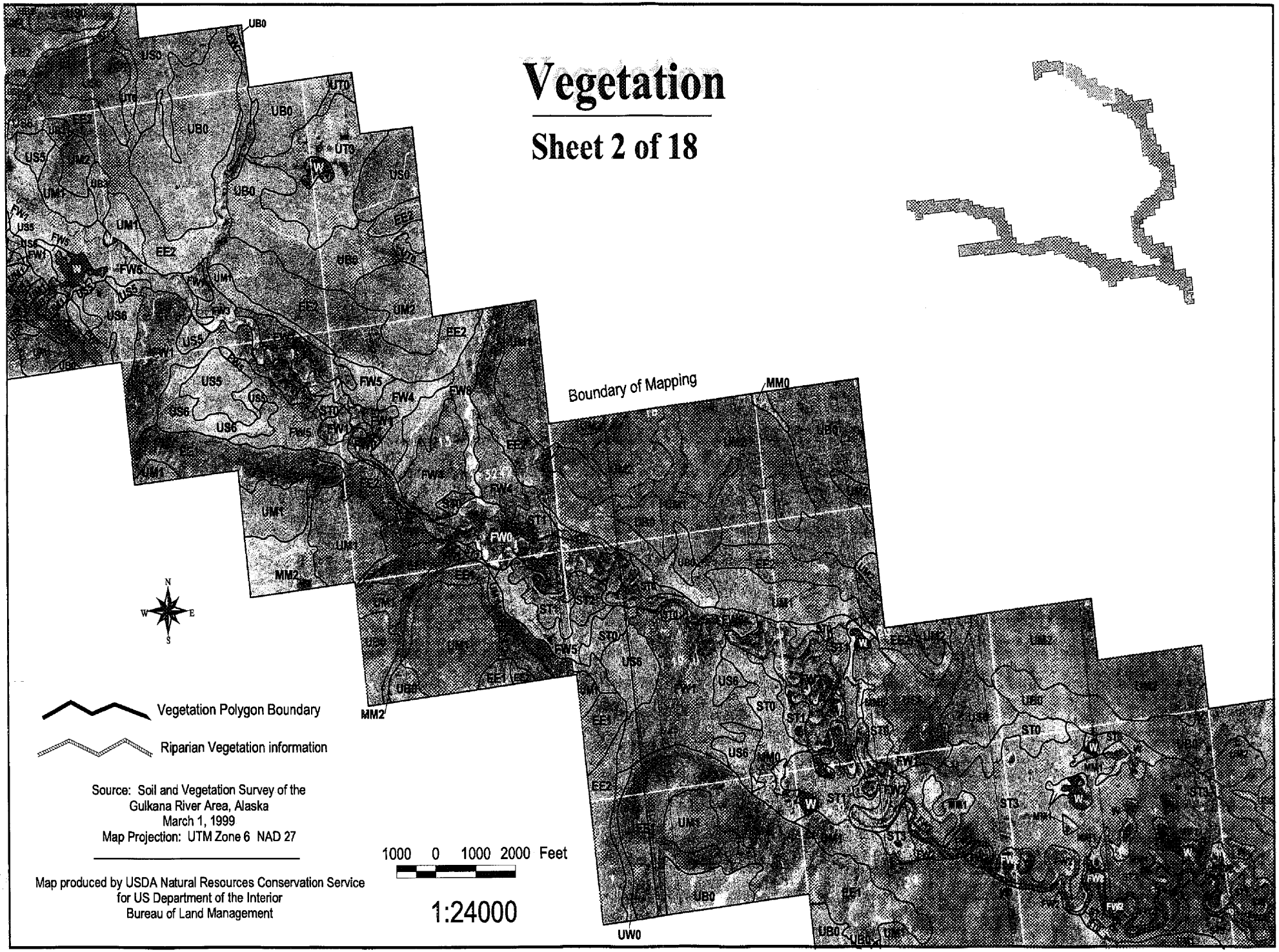


Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management

Vegetation

Sheet 2 of 18

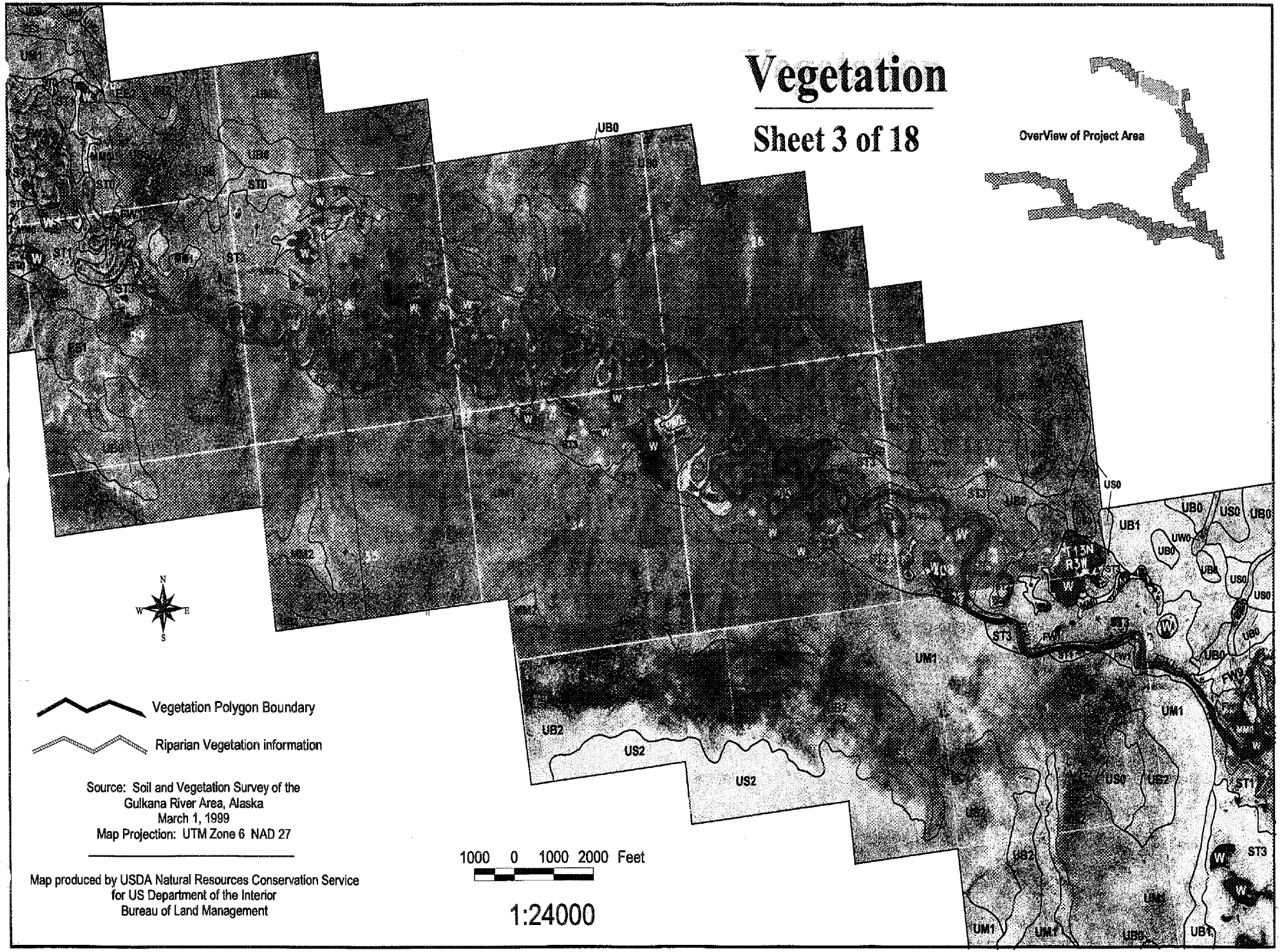


Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
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Bureau of Land Management

Vegetation

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Vegetation Polygon Boundary

Riparian Vegetation information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

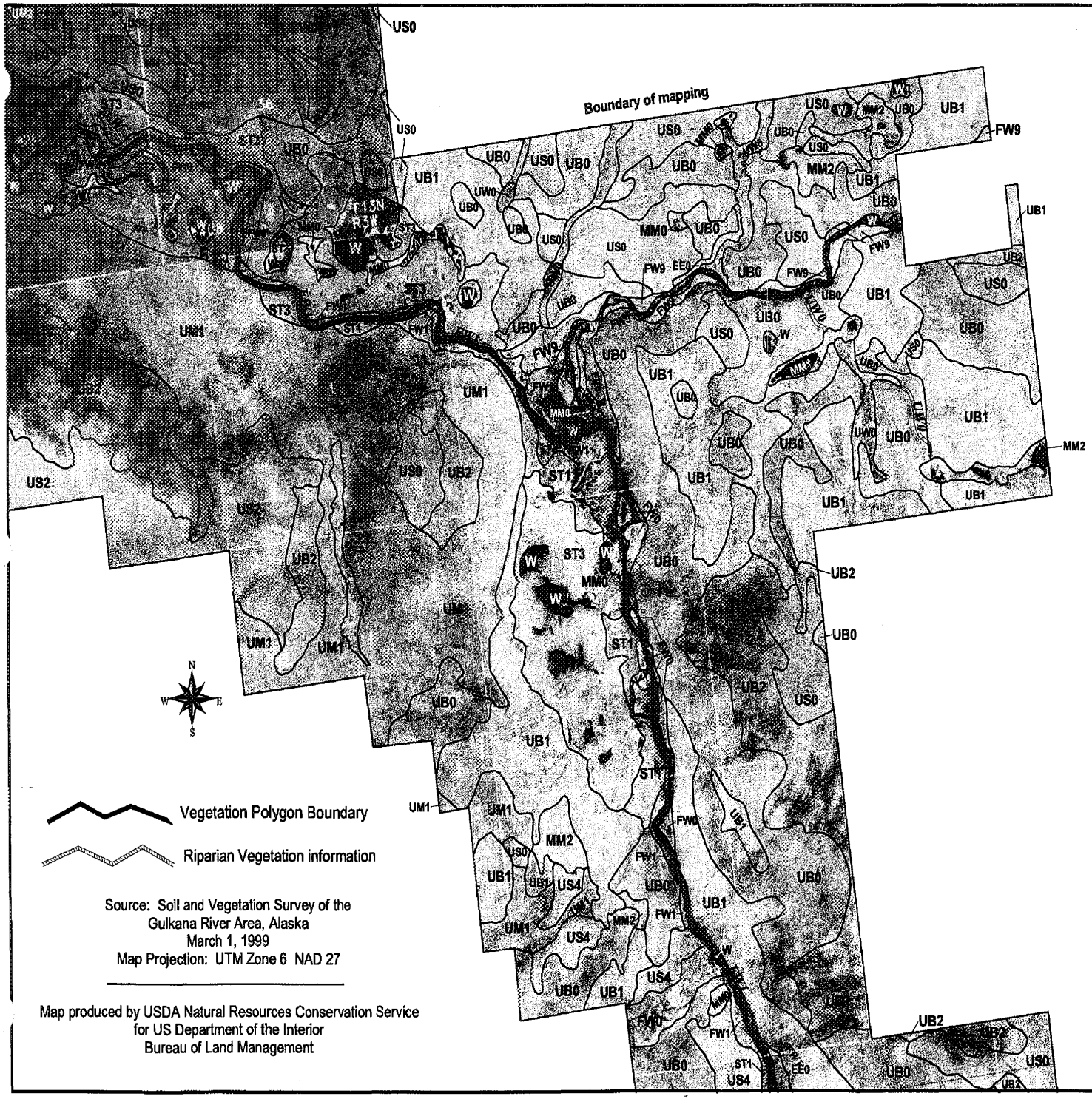
Map produced by USDA Natural Resources Conservation Service
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Bureau of Land Management

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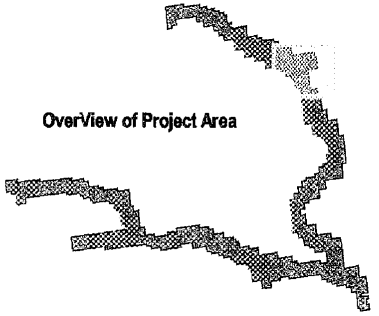
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Vegetation

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Overview of Project Area



Vegetation Polygon Boundary

Riparian Vegetation information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

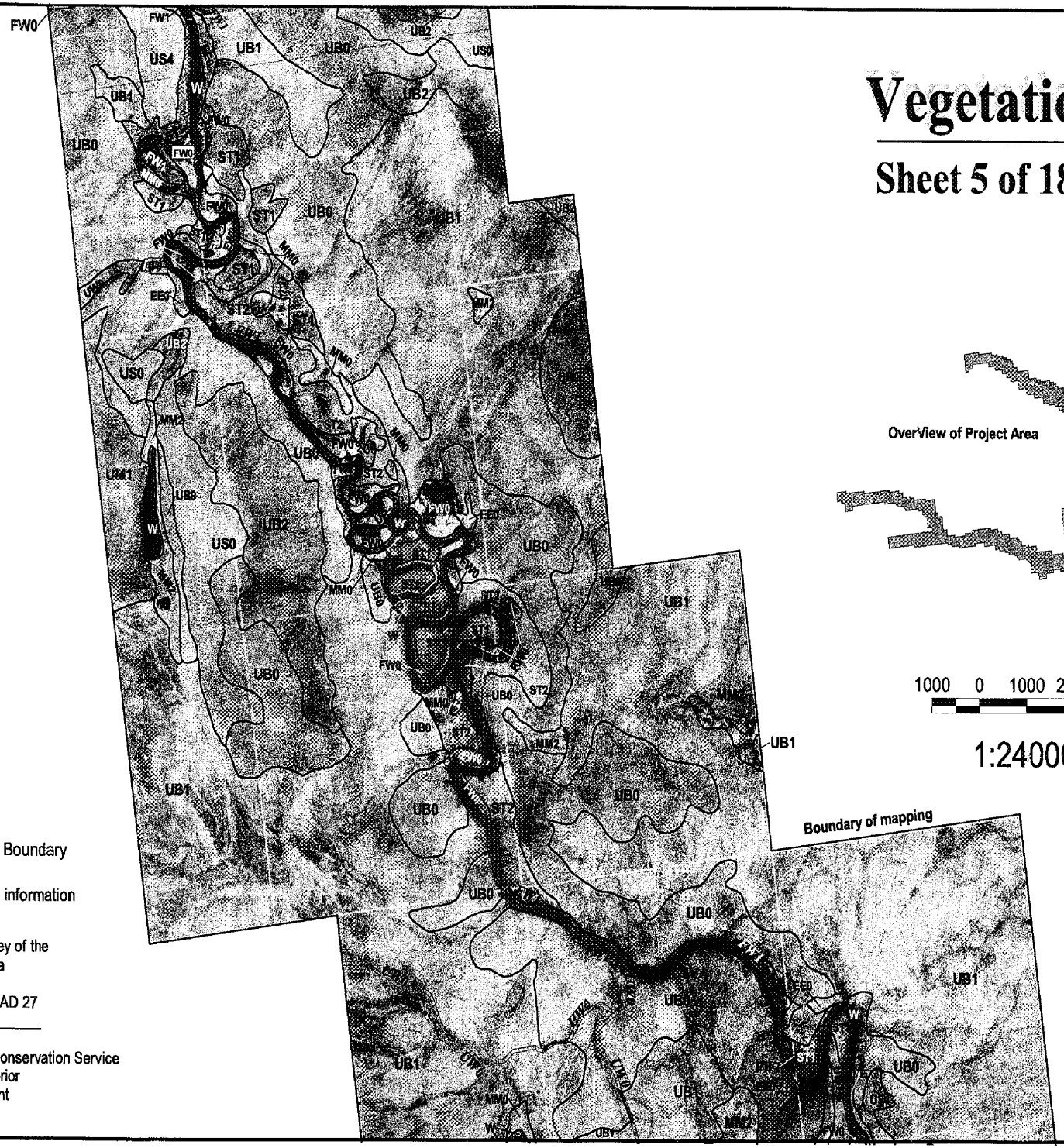
Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management

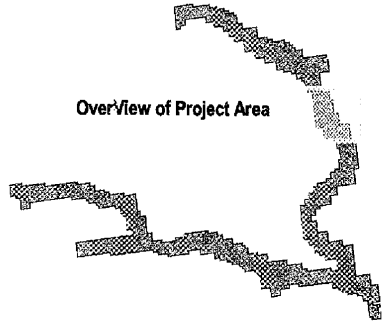
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Vegetation

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Vegetation Polygon Boundary

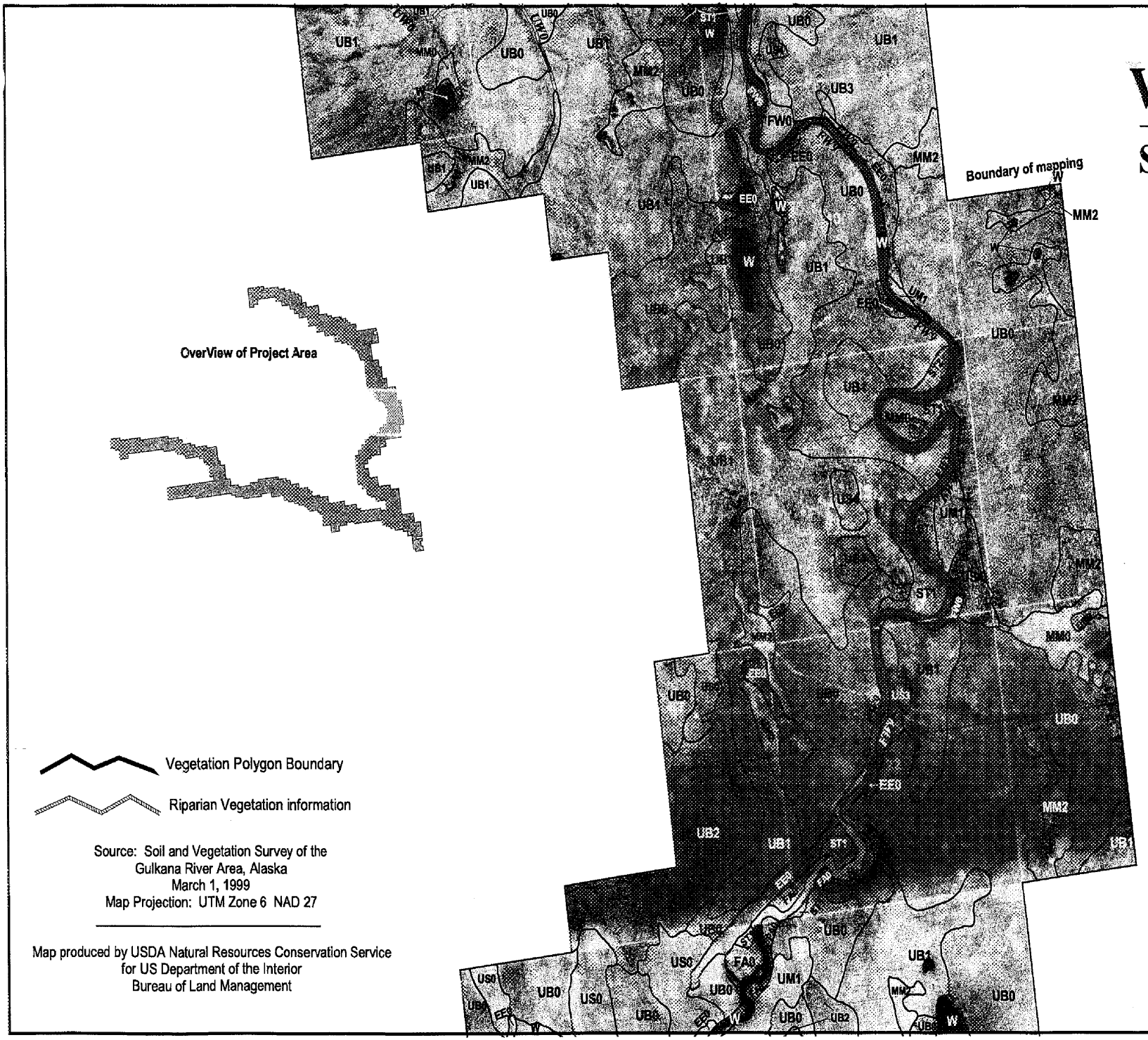
Riparian Vegetation information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
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Bureau of Land Management

Vegetation

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Vegetation Polygon Boundary

Riparian Vegetation information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management

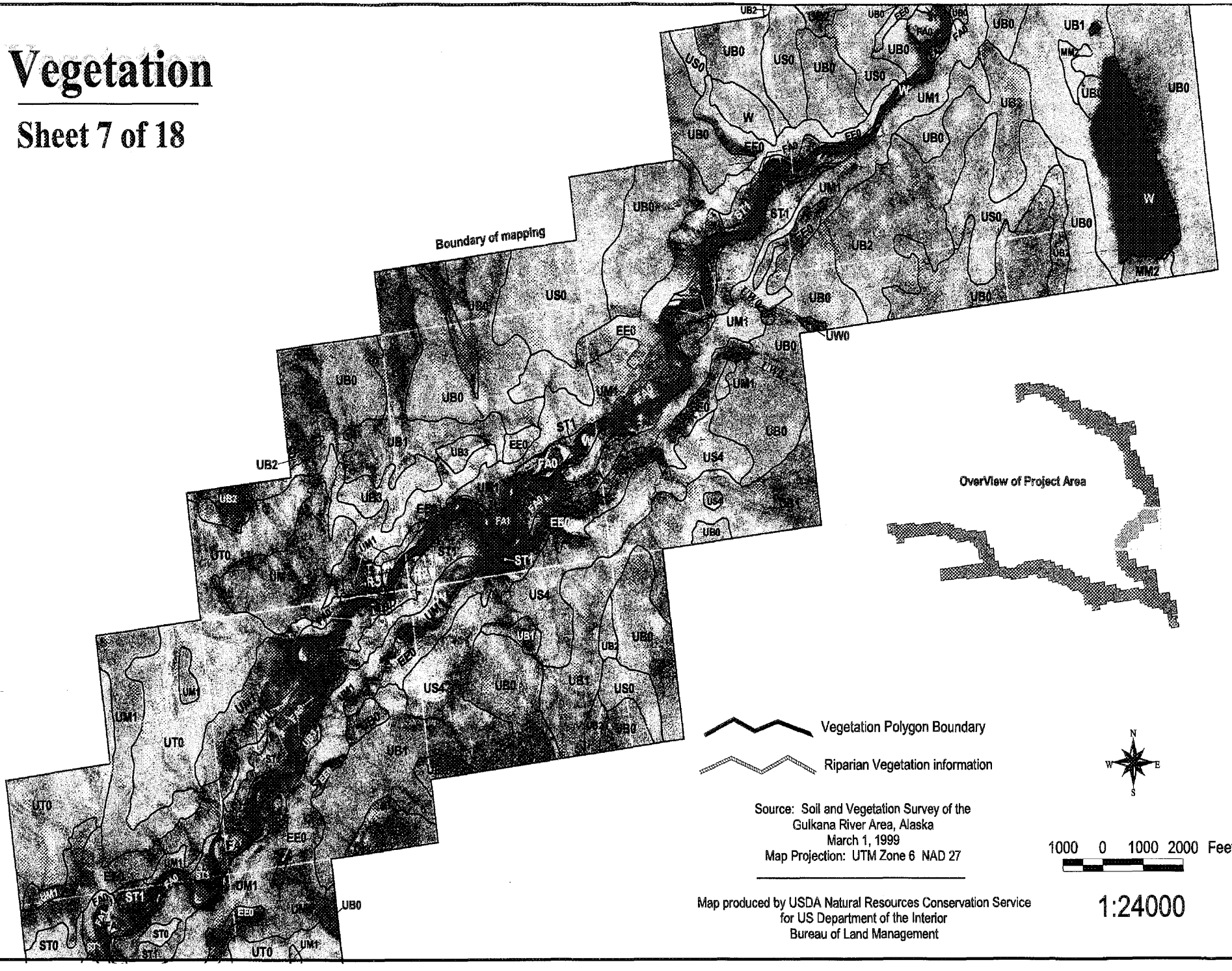
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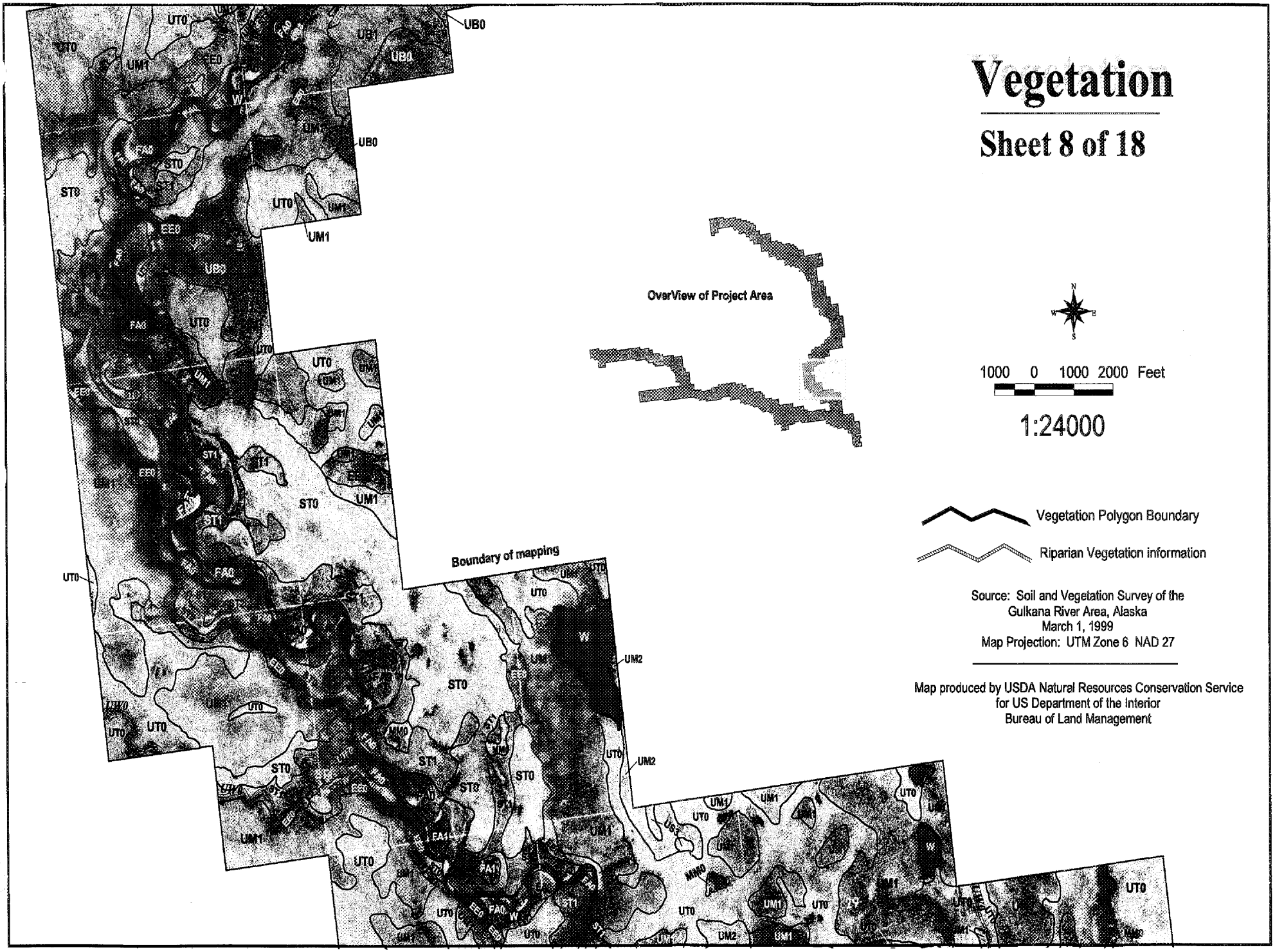
Vegetation

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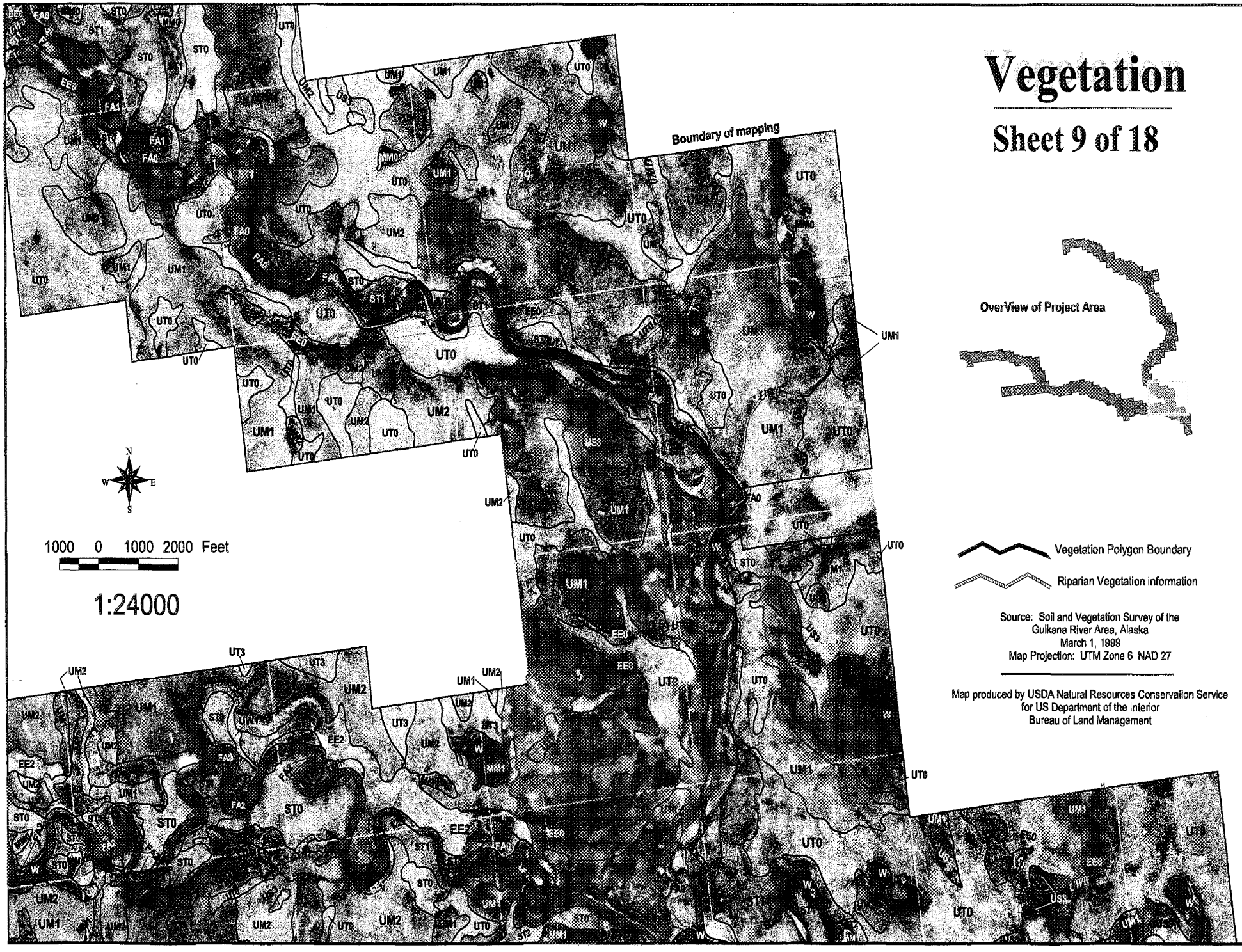
Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management


Vegetation
Sheet 8 of 18
OverView of Project Area
Boundary of mapping
1000 0 1000 2000 Feet
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Vegetation Polygon Boundary
Riparian Vegetation information
Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27
Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management

Vegetation

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OverView of Project Area

Vegetation Polygon Boundary

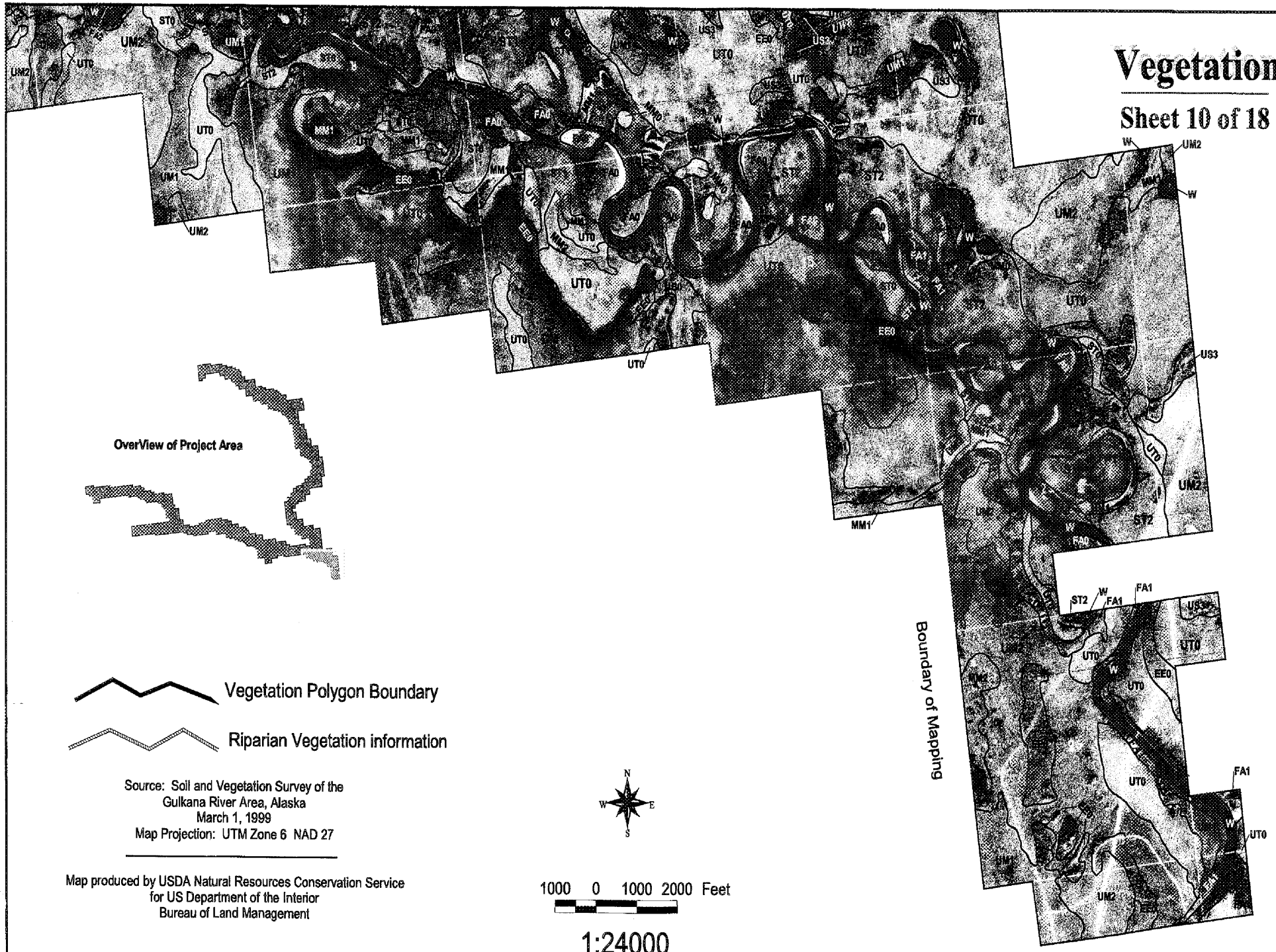
Riparian Vegetation information

Source: Soil and Vegetation Survey of the
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March 1, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
for US Department of the Interior
Bureau of Land Management

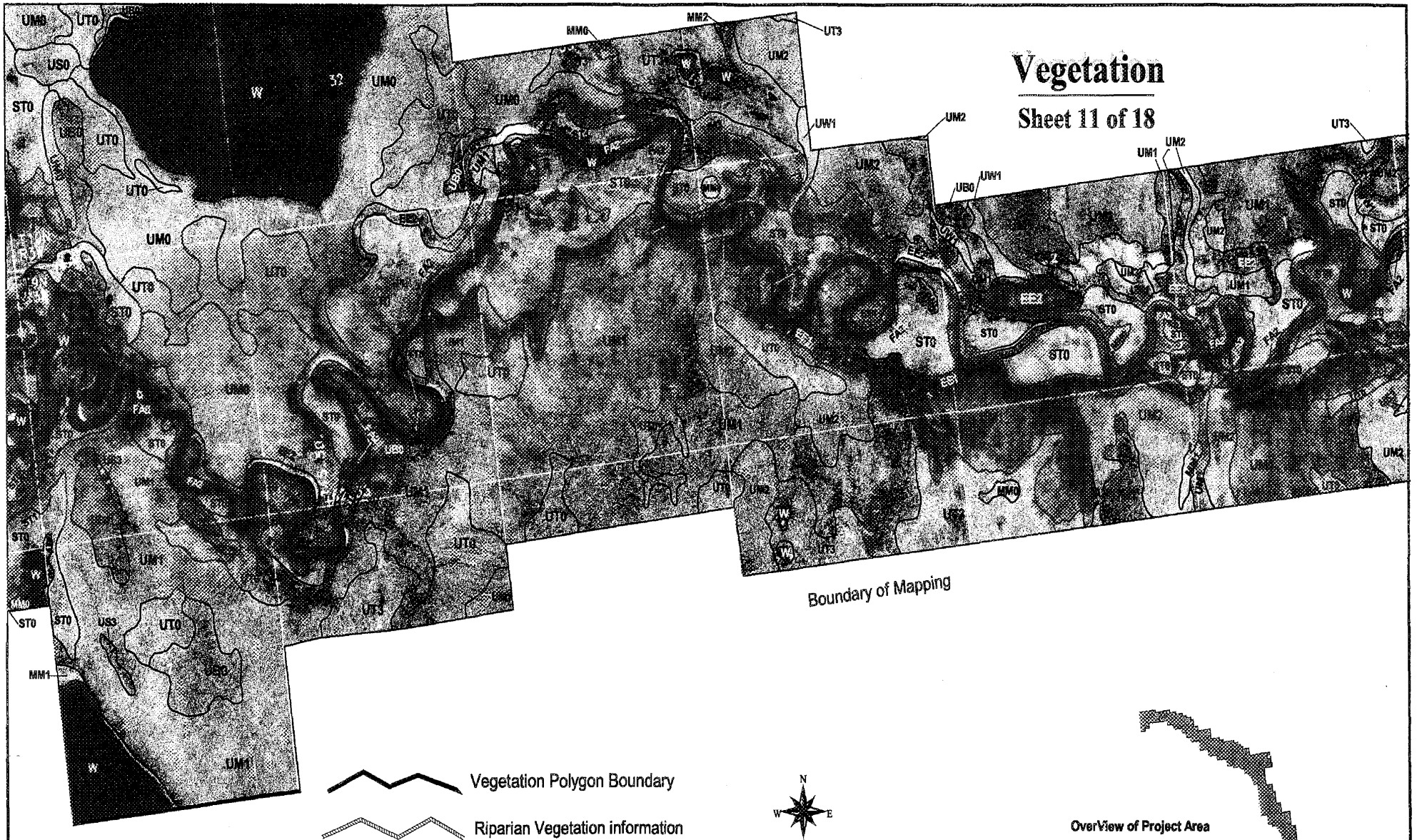
Vegetation

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Vegetation

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Vegetation Polygon Boundary

Riparian Vegetation information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

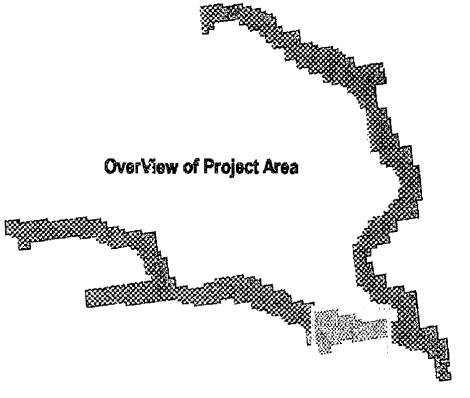
Map produced by USDA Natural Resources Conservation Service
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Bureau of Land Management

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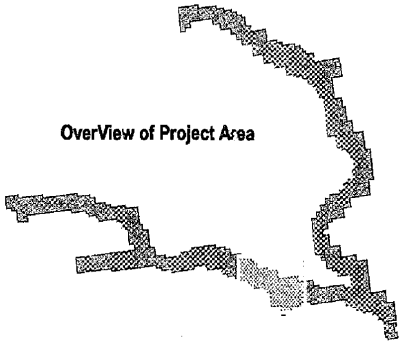
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OverView of Project Area



Vegetation

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Boundary of Mapping

Vegetation Polygon Boundary

Riparian Vegetation information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

Map produced by USDA Natural Resources Conservation Service
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Bureau of Land Management

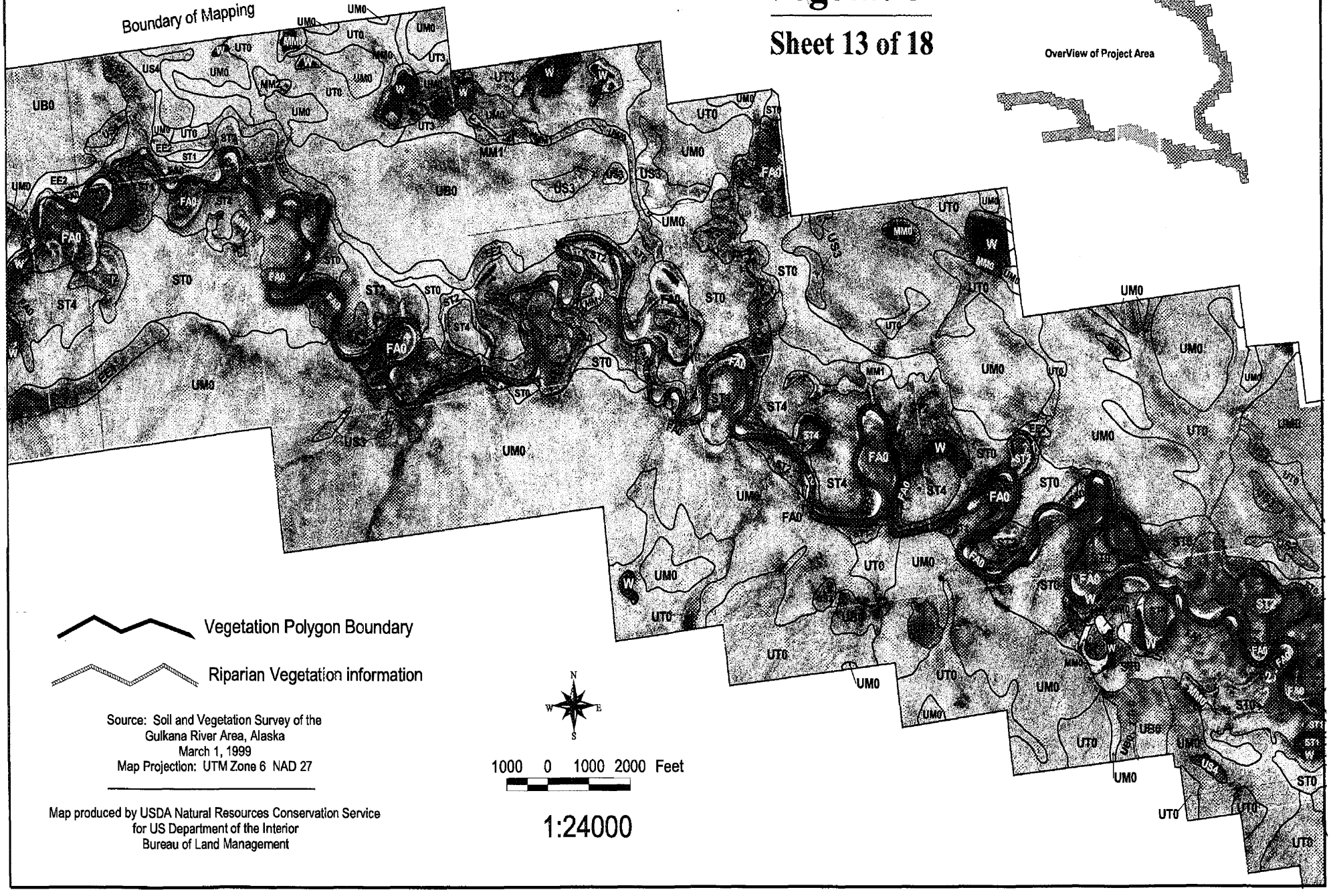
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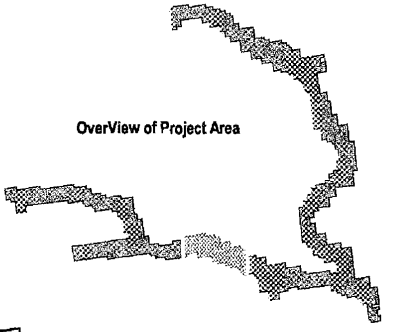
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Vegetation

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Vegetation Polygon Boundary

Riparian Vegetation information

Source: Soil and Vegetation Survey of the
Gulkana River Area, Alaska
March 1, 1999
Map Projection: UTM Zone 6 NAD 27

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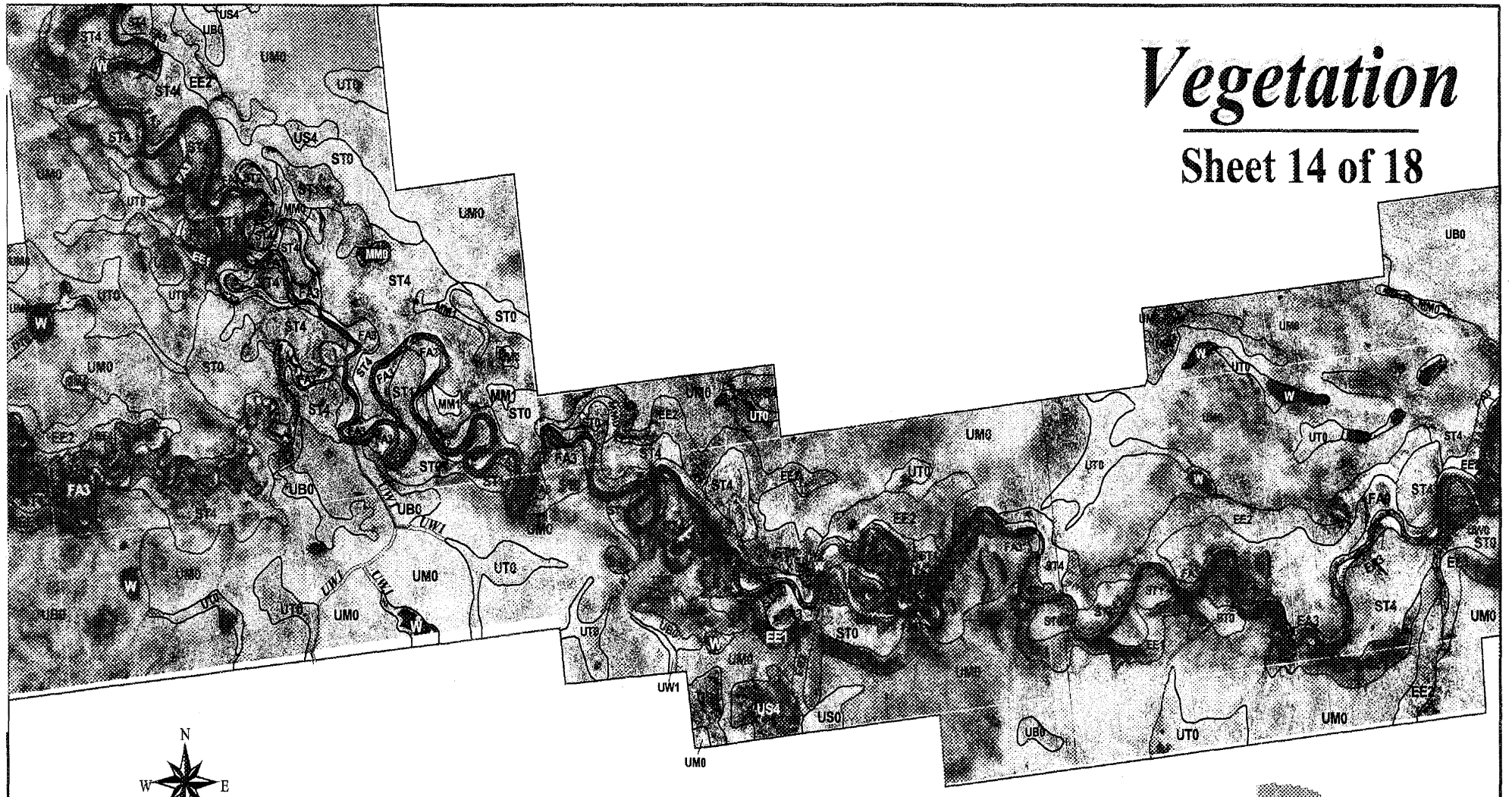
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Vegetation

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Vegetation Polygon Boundary

Riparian - Vegetation information

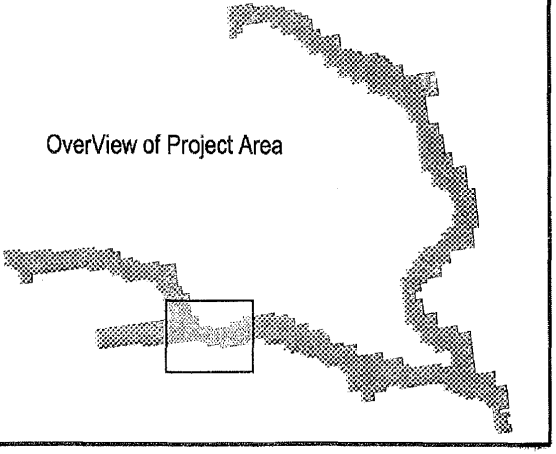
Source: Soil and Vegetation Survey of the
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Feb. 25, 1999
Map Projection: UTM Zone 6 NAD 27

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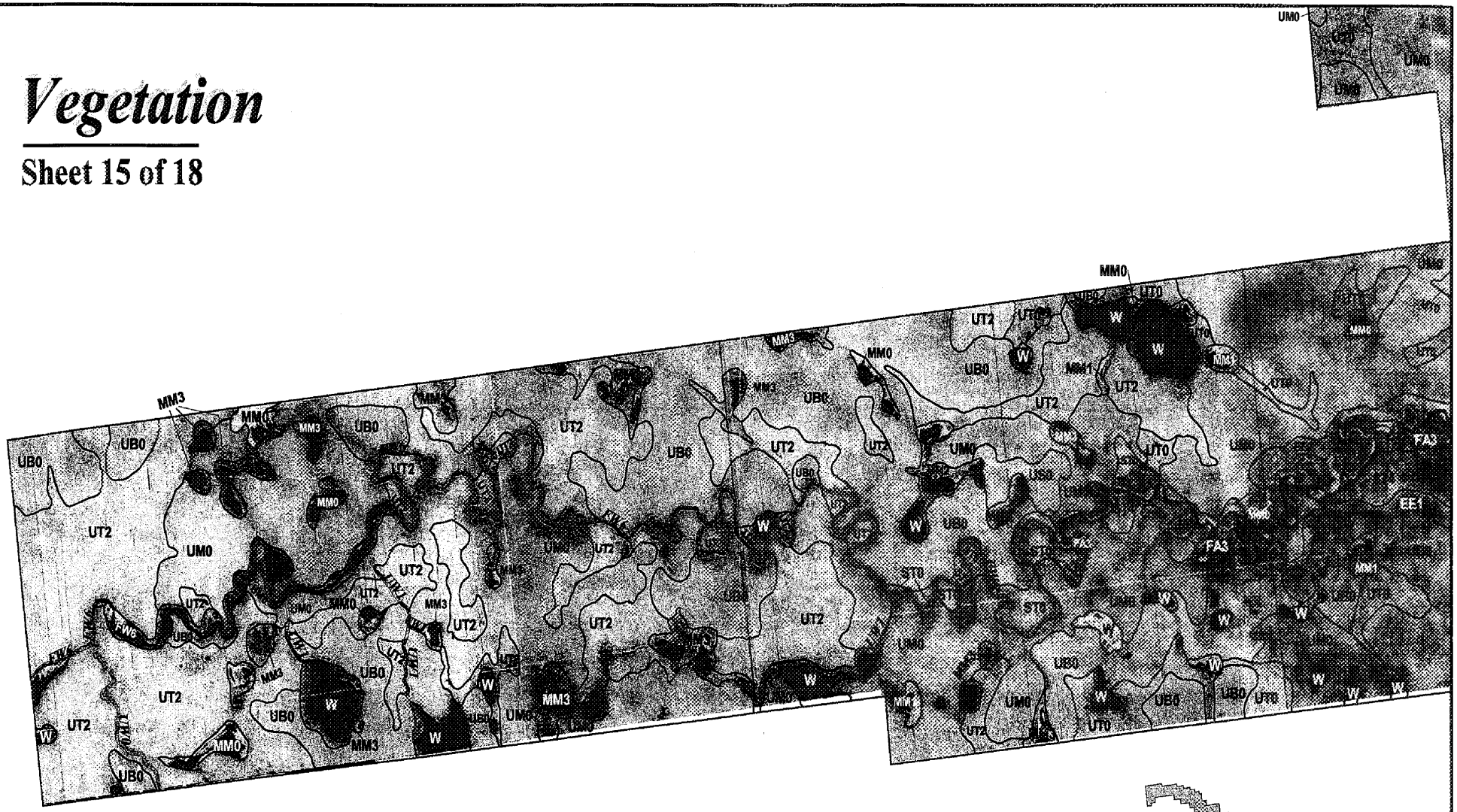
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OverView of Project Area



Vegetation

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Vegetation Polygon Boundary

Riparian - Vegetation information

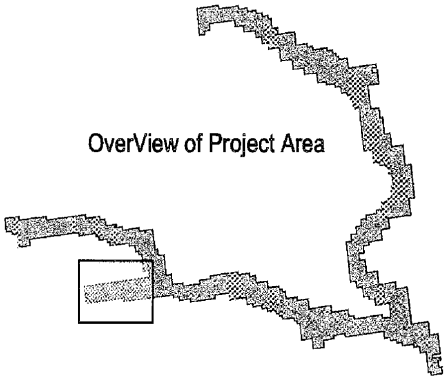
Source: Soil and Vegetation Survey of the
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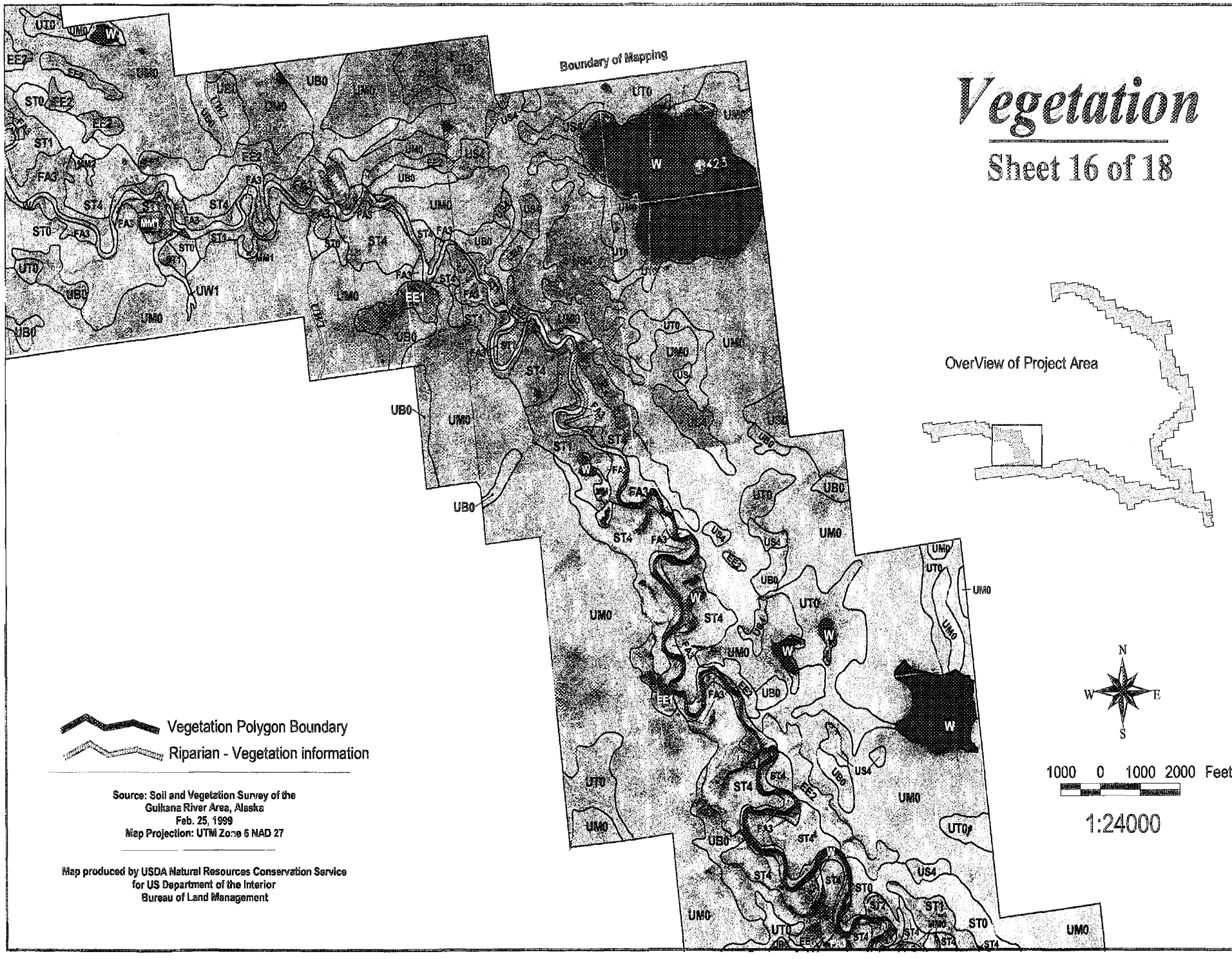
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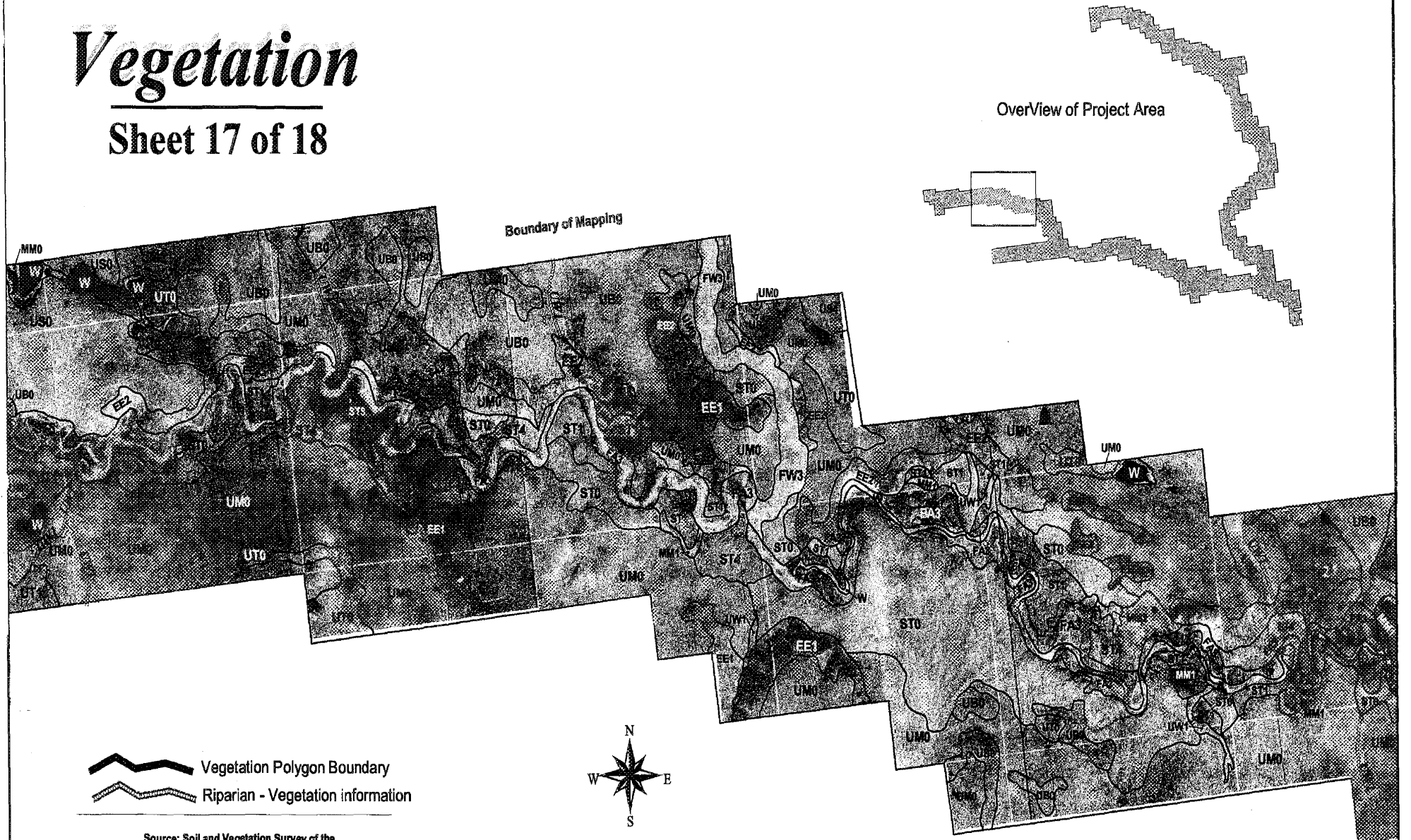
Vegetation

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Vegetation

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Vegetation Polygon Boundary

Riparian - Vegetation information

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1000 0 1000 2000 Feet

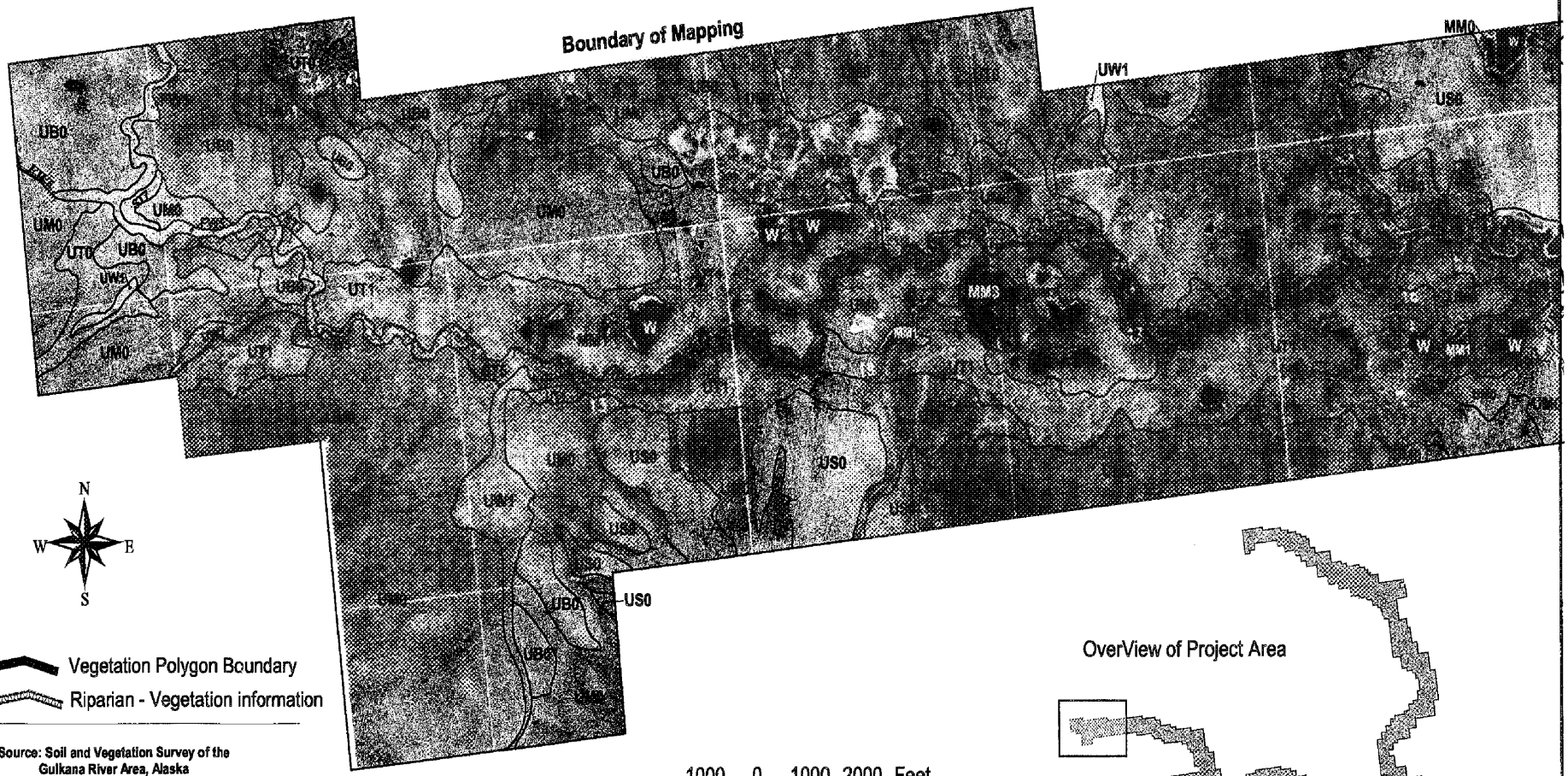
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Source: Soil and Vegetation Survey of the Gulkana River Area, Alaska
Feb. 25, 1999
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Map produced by USDA Natural Resources Conservation Service for US Department of the Interior Bureau of Land Management

Vegetation

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Vegetation Polygon Boundary

Riparian - Vegetation information

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1000 0 1000 2000 Feet

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OverView of Project Area

