CULTURAL RESOURCES SURVEY

ANCHORAGE-FAIRBANKS TRANSMISSION INTERTIE

PREPARED BY
COMMONWEALTH ASSOCIATES INC.

ALASKA POWER AUTHORITY

THE FINAL REPORT OF THE 1981 AND 1982 CULTURAL RESOURCES SURVEY OF THE ANCHORAGE - FAIRBANKS TRANSMISSION INTERTIE

PREPARED BY:

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FOR:

ALASKA POWER AUTHORITY
334 WEST FIFTH AVENUE
ANCHORAGE, ALASKA

R-2516

MAY 1983

ABSTRACT

This document presents the results of a literature search, records check and two seasons of cultural resources field survey of: (1) the proposed route alignment for the Alaska Power Authority's Transmission Intertie between the communities of Willow and Healy, Alaska; (2) the proposed access routes needed to support construction of the proposed Intertie and, (3) the proposed camp and staging areas needed to support construction. Approximately 106 miles of the proposed alignment, including alternate segments, were examined for cultural resources between June 21 and July 24, 1981. An additional 180 miles of alignment, including access routes and staging/camp areas, were investigated between June 15 and October 10, 1982. Eleven prehistoric sites and two historic cabins were discovered during 75 person-days of field investigations in 1981; two prehistoric sites and two historic sites were discovered during 180 person-days of field investigations in 1982.

The final route alignment had not been selected prior to the close of the 1981 field season, which precluded completion of the archeological survey of the entire alignment during that year. Only one previously recorded historic site, Curry, is known to lie close enough to the project area to be threatened by proposed construction. One find spot of apparently prehistoric lithic materials lies on the centerline of the proposed Transmission Intertie. This location, HEA-225, does not appear to meet eligibility criteria for inclusion in the National Register of Historic Places.

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*Separate Volume

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INTRODUCTION

In July of 1980, the Alaska Power Authority (APA) engaged Commonwealth Associates Inc., of Jackson, Michigan, to study the technical and economic feasibility of providing an electrical intertie between the Anchorage and Fairbanks utility systems. Commonwealth included as part of that study an assessment of the proposed project's impact on cultural resources. This reflected the interest of the Federal Government and the State of Alaska in cultural resources.

A literature search was conducted to provide background information on known cultural resources and the physical environment within the area of the proposed route alignment for the Transmission Intertie. Results of the literature search were the subject of a separate report submitted by Alaskarctic to Commonwealth Associates Inc. in February 1981. This literature research was since augmented in 1982 through an Alaskarctic study for the U.S.D.A. Soil Conservation Service (Bacon, Kari and Cole 1982). The latter study included aboriginal place name research over an area that includes most of the proposed Intertie study region. Pertinent data from both the 1981 and the 1982 literature research efforts are incorporated into this final report.

Archeological survey along proposed alignments was conducted during June and July 1981 by Alaskarctic and from June to October 1982 by the Alaska Heritage Research Group, Inc. (formerly Alaskarctic). The work was conducted under contract to Commonwealth Associates Inc. of Jackson, Michigan. Field aspects of the research were in conformance with Federal Antiquities Act Permit Nos. 79-AK-088 and 82-AK-309 and with Antiquities Permits issued by the State of Alaska. All required temporary and special land use permits were arranged through Land Field Services, Inc., Anchorage, Alaska.

The program summarized in the following pages was designed to meet guidelines expressed in Federal Regulations 36 CFR 800, "Procedures for the Protection of Historic and Cultural Properties." That set of regulations addresses concerns for cultural resource preservation expressed in the National Historic Preservation Act, the Archeological Resources Protection Act, Presidential Executive Order 11593 (Protection and Enhancement of the Cultural Environment), and the President's Memorandum on Environmental Quality and Water Resources Management (July 12, 1978). In addition, objectives of the Alaska Historic Preservation Act were recognized.

OBJECTIVES OF THE PRESENT STUDY

This study includes a two-part field effort. The first part of that effort (referred to as Phase I) consists of an archeological survey of (1) the proposed Transmission Intertie corridor, (2) proposed access routes, and (3) proposed camp/staging areas. The second part of the study (Phase II) focuses on two of the sites identified during the Phase I program: HEA-225, discovered during the Phase I survey, and Curry, a previously identified historic site. Examination of Curry could not be completed in 1982 because snow had obscured portions of the site by the time it was selected as a potential camp/staging area.

Phase I activities consisted of both aerial and pedestrian survey. Objectives of the Phase I survey included site identification, location and inventory. Minimal field collections were made; neither extensive testing of sites by excavation nor extensive analytical studies were undertaken.

Phase II investigations focused on obtaining data which would assist in determining the eligibility of Curry and HEA-225 for nomination to the National Register of Historic Places.

The Phase I and Phase II aspects of the survey program are part of an archeological evaluation program. In simplest terms, the objective is to locate all significant archeological and historical sites which might be adversely impacted by proposed transmission line construction and to prepare plans to protect those sites from unnecessary damage. These specific objectives are framed in a more general problem orientation which allows the primary data to be viewed in the context of the accumulative body of knowledge on Alaskan cultural resources, thereby aiding the identification of priority needs for subsequent access routes and staging areas cultural resources research in anticipation of future regional land planning.

Unanticipated changes in the archeological program were made midway through the first field season to accommodate uncertainties over the final route selection, precluding completion of a cultural resources survey in 1981. However, approximately 106 miles of preliminary route segments were investigated for the presence of cultural resources. As the overall project progressed from route selection to route design and survey, there were revisions in the routing. Consequently, an additional 180 miles of route segments, access routes, and staging areas were examined for cultural resources in 1982. Approximately 11,850 acres were examined for cultural resources; roughly 9,500 acres were examined by terrestrial survey techniques.

Surveyed corridor alignments were examined to include the area within 200 feet of the proposed centerline. Since the surveyed areas were comprised of a series of proposed superlinks, each superlink is in effect a survey transect. In a larger sense, the total project corridor can be considered an extended south-north transect connecting Willow to Healy, Alaska. Thus, the survey corridor samples a variety of ecological settings, ranging from the flats of the lower Susitna River drainage to the divide of the Alaska Range. Access routes were examined within 10 feet of proposed centerlines.

STAFF

Seven archeologists participated in the field archeology. In 1981, Principal Investigator Glenn Bacon worked with Charles E. Holmes, who was Project Supervisor and who took responsibility for directing day-to-day field operations. Mr. Holmes was assisted in the field by archeologists Charles M. Mobley and Alexander Dolitsky. Coordination between Alaskarctic and Commonwealth Associates Inc. (CAI) was through CAI archeologist Wesley Stinson. In 1982, Mr. Bacon continued as Principal Investigator, while Dr. Mobley served as Project Supervisor. Dr. Mobley was assisted in the field by archeologist Risa J. Carlson.

Coordination between Alaska Heritage Research Group, Inc. and CAI in 1982 was through CAI archeologist Richard Taylor. Mr. Taylor participated in all phases of the 1982 field season. He accompanied the field crew and participated in survey activities, including excavation of test pits and survey of the access roads and camp/staging areas. Mr. Taylor also prepared the site description for Curry (TAL-004) in the Survey Results section of the report.

The project historian, Terrence Cole, visited the field briefly in late June 1982 to collect data pertinent to the history of the Talkeetna vicinity. He also conducted a limited helicopter aerial reconnaissance of the middle portion of the study area in an attempt to locate potentially significant historical structures.

PHYSICAL ENVIRONMENT OF THE STUDY AREA

The project area for the Anchorage-Fairbanks Transmission Intertie lies within a north-south corridor connecting Willow to Healy, Alaska (see Figure 1). Elevations of the proposed transmission route range from approximately 150 feet, near Willow, to nearly 3,200 feet in the Talkeetna Mountains west of Curry. This region is drained toward the south by the Susitna and Chulitna Rivers and to the north by the Nenana River.

Regional physiography crossed by the Anchorage-Fairbanks Transmission Intertie is aptly summarized in the Environmental Assessment Report: Anchorage-Fairbanks Transmission Intertie (CAI 1982):

> The proposed Intertie crosses four major physiographic provinces in south-central Alaska. From the Cook Inlet - Susitna lowland near Willow the alignment runs through the Broad Pass Depression, through the Alaska Range and on into the Northern Alaska Range Foothills province which includes the town of Healy.
>
> The broad Susitna lowland is the landward extension of Cook Inlet. It is a structural basin with several major tributary rivers whose sediment is gradually filling Cook Inlet. The lowland is bounded on the west and north by the Alaska Range and by the Talkeetna Mountains on the east; Cook Inlet is to the south.
>
> During glacial times, much of the Susitna lowland was a proglacial lake (Pewe, 1975); today, due to low slopes and the nature of the substrate, it remains a poorly drained area with abundant small lakes and muskegs. In the northern portion of the lowland coarser-grained glacial deposits form low ridges with better drainage.
>
> Further north the project area is dominated by the Broad Pass Depression, an eroded block which has been downdropped between parallel faults (graben) (Capps 1940). From this natural feature the project area is narrowly constricted through Windy Pass and the Nenana Gorge in the Alaska Range.

The Northern Foothill Belt of the Alaska Range is composed of east-trending ridges and valleys. Streams occupying old glacial valleys have cut narrow gorges into the glacial drift and the underlying bedrock. The Nenana River gorge is an example of this kind of feature.

Surface sediments over the entire Intertie route are the results of glacial and postglacial episodes (Coulter et al. 1965) (Figure 2). The entire region was ice-covered during the early Pleistocene, and remnant glaciers still exist in portions of the Alaska Range (see Figure 3). The southernmost portion of the study area, south of Kashwitna, may have been inundated by a proglacial lake during early Pleistocene times. Near the study area, middle and late Pleistocene glaciations were apparently limited to local events in the Alaska Range and the Talkeetna Mountains. However, the effects of postglacial sedimentation, erosion, and downcutting can be seen throughout. Numerous exposures provided along the Parks Highway and the Alaska Railroad document a pattern of glacial till and outwash deposits overlain with loess. Lacustrine sediments have also been noted (Coulter et al. 1965).

A recent review of project area soils (see Figure 4) indicates that most of the area is characterized by either poorly drained sediments on relatively level terrain or better drained soils on steeper terrain (CAI 1982:72-80). In addition, much of the middle and northern portions of the study corridor is underlain by permafrost (see Table 1).

Geologist Tom Hamilton has recently discussed (oral communication, 1982) the effects of deglaciation of the coastal mountain range. He has hypothesized that as ice caps melted several environmental effects may have occurred. Mass wasting of mountain glaciers would have exacerbated seasonal runoff and caused an increased rate in erosion of surface sediments. At the Carlo Creek site, in Windy Pass, it is estimated that as much as 75 percent of the total postglacial downcutting had already occurred by 8500 years ago (Bowers 1980:50). Another effect of glacier melting was the release of ice-dammed lakes. Still another effect, more difficult to assess, is the effective lowering of mountain peaks as ice capping on those peaks became thinner, perhaps by as much as hundreds of feet. Hamilton hypothesizes that such an effective lowering of mountain heights might have allowed moisture laden gulf air masses to more effectively penetrate inland regions. An extension of this line of thinking is the possibility of increased snow depths at certain seasons, which could have had dramatic consequences in the biological landscape.

BIOLOGICAL LANDSCAPE OF THE STUDY AREA

Discussion of the biological landscape here will be limited to those aspects considered significant in determining settlement density and locations. Species are considered significant to human populations based on previous observations in the archeological and ethnographic record. While a detailed analysis of game patterns and botanical inventories is preferable for a detailed archeological analysis of the region, such a study of microhabitats is considered beyond the scope of the cultural resources investigation documented here. Rather, the broad pattern of the biological landscape will be identified. This regional rather than

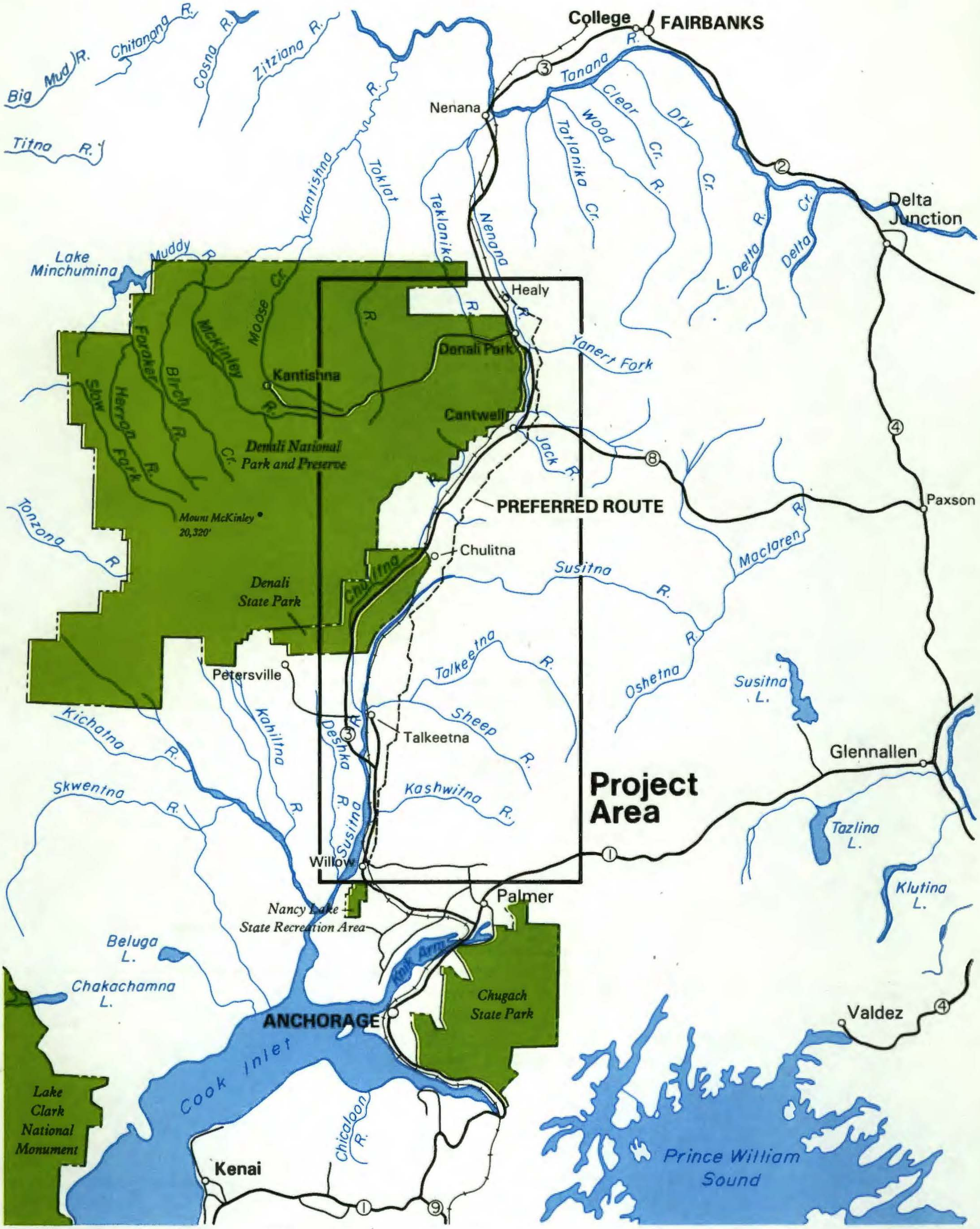


FIGURE 1

Alaska Power Authority **ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE**

Regional Location

0 30 60 Miles

0 30 60 Kilometers

North

Gilbert/Commonwealth

QUATERNARY

Qs — Undifferentiated surficial deposits of Quaternary Age
Qn — Drift of the Naptowne glaciation
Qau — Quaternary alluvium undifferentiated
Qal — Deposits in modern stream beds and alluvial fans
Qol — Older alluvium-terrace gravels, outwash of Quaternary Age
Ql — Quaternary lake clay and silts
Qls — Landslide debris of Quaternary Age
Qp — Peat
Qt — Till and morainal deposits undifferentiated
Qtrg — Talus and rock glaciers

TERTIARY

Tgd — Tertiary granodiorite
Tsu — Tertiary sedimentary rocks undifferentiated
Tk — Sedimentary and volcanic rocks of Kenai Group
Tn — Nenana Gravel
Tcb — Coal-bearing formation
Tsmg — Tertiary schist migmatite and granite
Tv — Tertiary felsic igneous rocks

MESOZOIC

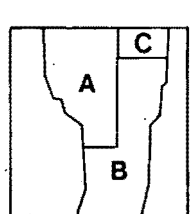
um — Undifferentiated Mesozoic rocks
mgn — Pre-Cretaceous greenstones
Ki — Diabase, andesite and rhyolite intrusive rocks
KJs — Undivided Cretaceous-Jurassic marine sedimentary rocks
gr — Granitic intrusive rocks
ba — Basalt dikes
TRgn — Intrusive greenstone
TRvs — Meta-basalt, slate, marble
Kc — Cantwell Formation
Mt — Totatlanika schist
Mesozoic igneous rocks

PALEOZOIC

smv — Devonian to Cretaceous undifferentiated sedimentary rocks
Dl — Devonian-Silurian limestone
Dsb — Upper Devonian serpentinite, basalt, chert and Gabbro
Pzv — Paleozoic metavolcanic rocks

PRECAMBRIAN

pcbc — Precambrian Birch Creek Schist



Modified from the following sources:
A. Geologic Map of the Talkeetna Quadrangle, Alaska. Miscellaneous Investigations Series Map I-1174.
B. Reconnaissance Geologic Map and Geochronology, Talkeetna Mountains Quadrangle, Northern Part of Anchorage Quadrangle, and Southeast Corner of Healy Quadrangle, Alaska. Open File Report 78-558A
C. Alaska Regional Profiles Yukon Region 1974 State of Alaska Division of Planning and Research. Juneau, Alaska.
Base Map Source: U.S.G.S. Topographic 1:250,000 Maps.

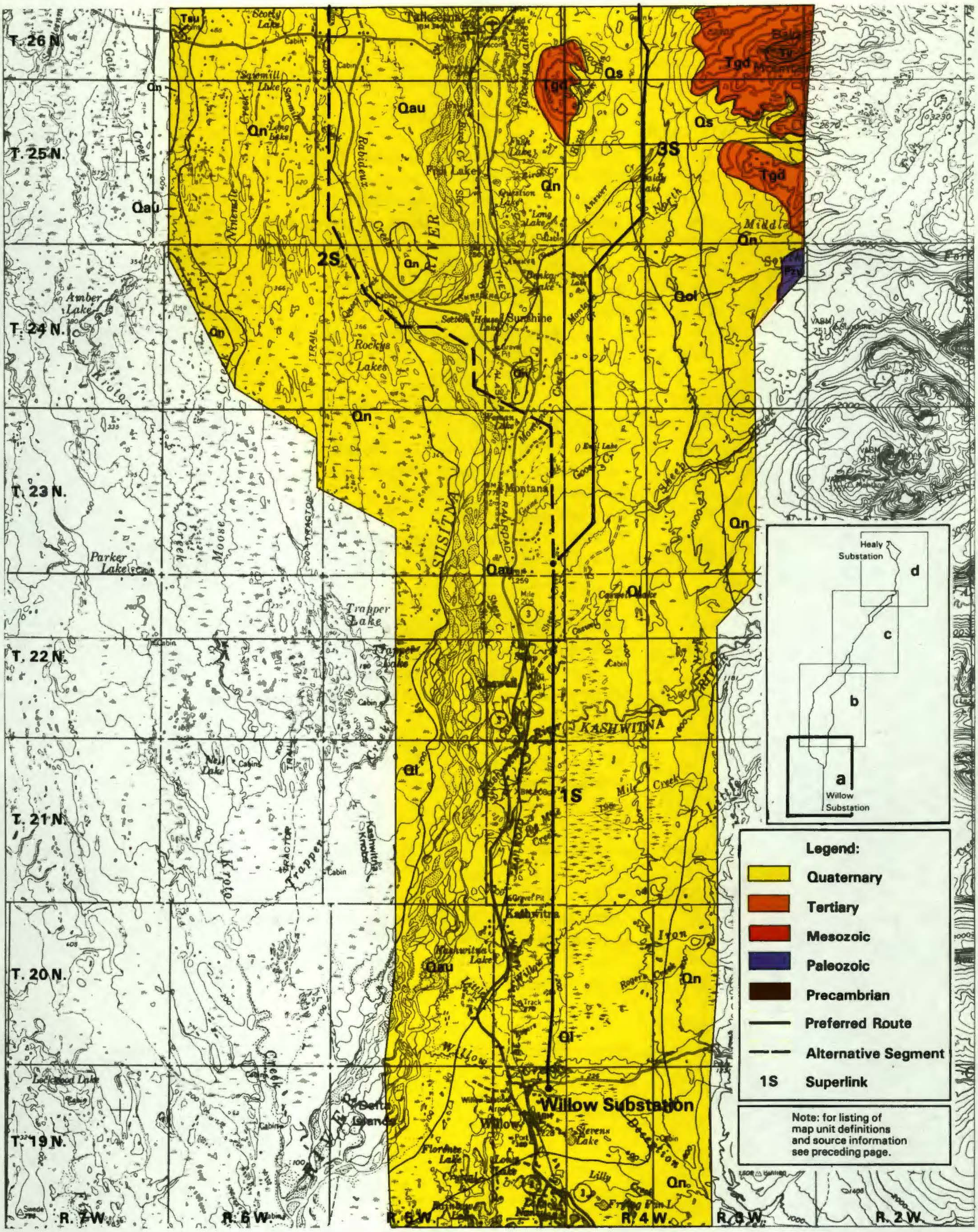


FIGURE 2a

Alaska Power Authority **ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE**

Source: CAI 1982

Generalized Geology

0 5 10 Miles
0 5 10 Kilometers

North

Gilbert/Commonwealth

QUATERNARY

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Ql — Quaternary lake clay and silts
Qls — Landslide debris of Quaternary Age
Qp — Peat
Qt — Till and morainal deposits undifferentiated
Qtrg — Talus and rock glaciers

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Tgd — Tertiary granodiorite
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Tk — Sedimentary and volcanic rocks of Kenai Group
Tn — Nenana Gravel
Tcb — Coal-bearing formation
Tsmg — Tertiary schist migmatite and granite
Tv — Tertiary felsic igneous rocks

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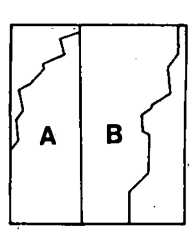

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Base Map Source: U.S.G.S. Topographic 1:250,000 Maps.

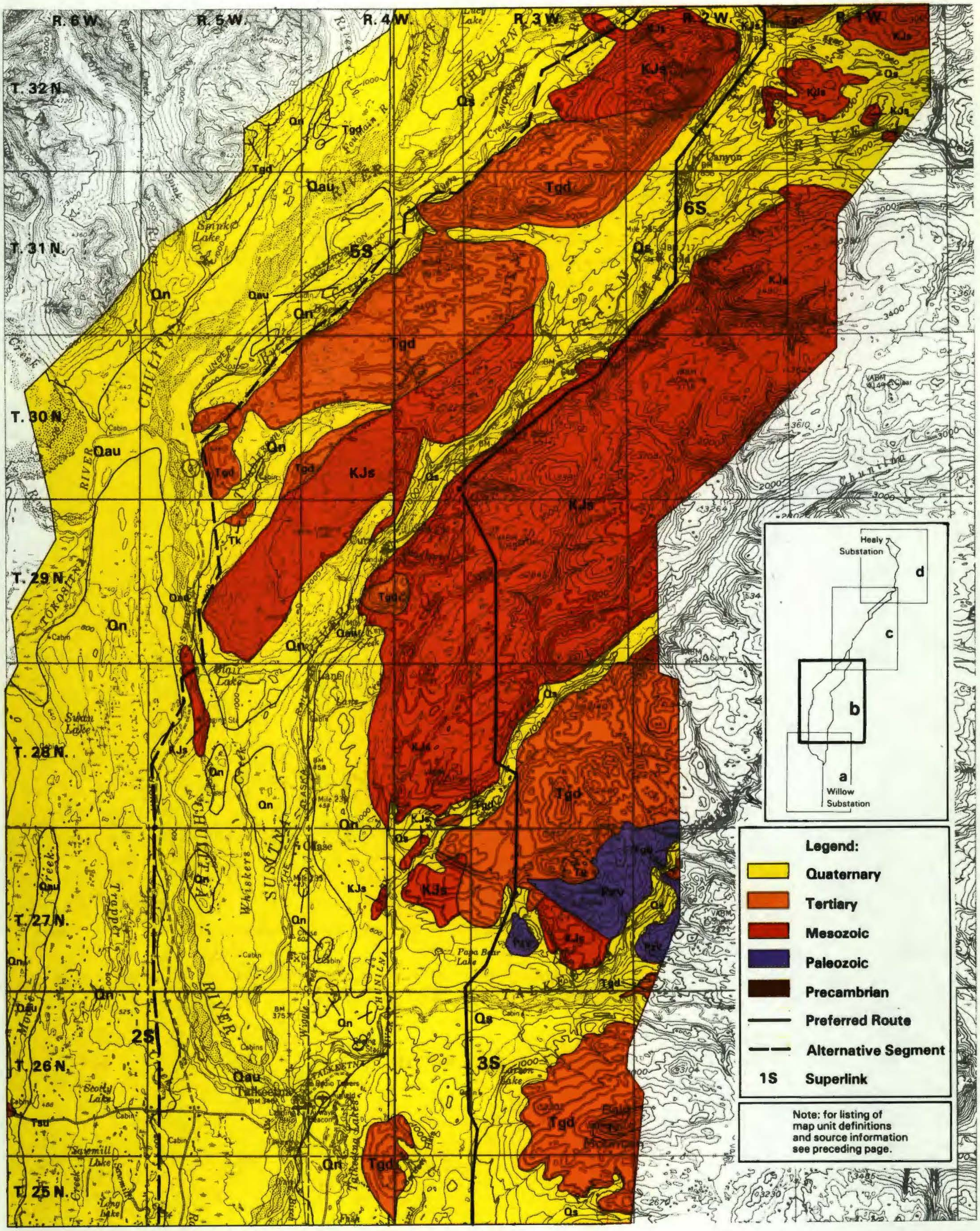

FIGURE 2b

Alaska Power Authority **ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE**

Generalized Geology

Source: CAI 1982

0 5 10 Miles
0 5 10 Kilometers

North

Gilbert/Commonwealth

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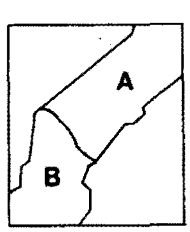

Modified from the following sources:
A. Geologic Map of the Alaska Railroad Region Matanuska Coal Field to Yanert Fork Bulletin 907 Plate 2.
B. Reconnaissance Geologic Map and Geochronology, Talkeetna Mountains Quadrangle, Northern Part of Anchorage Quadrangle, and Southeast Corner of Healy Quadrangle, Alaska. Open File Report 78-558A
Base Map Source: U.S.G.S. Topographic 1:250,000 Maps.

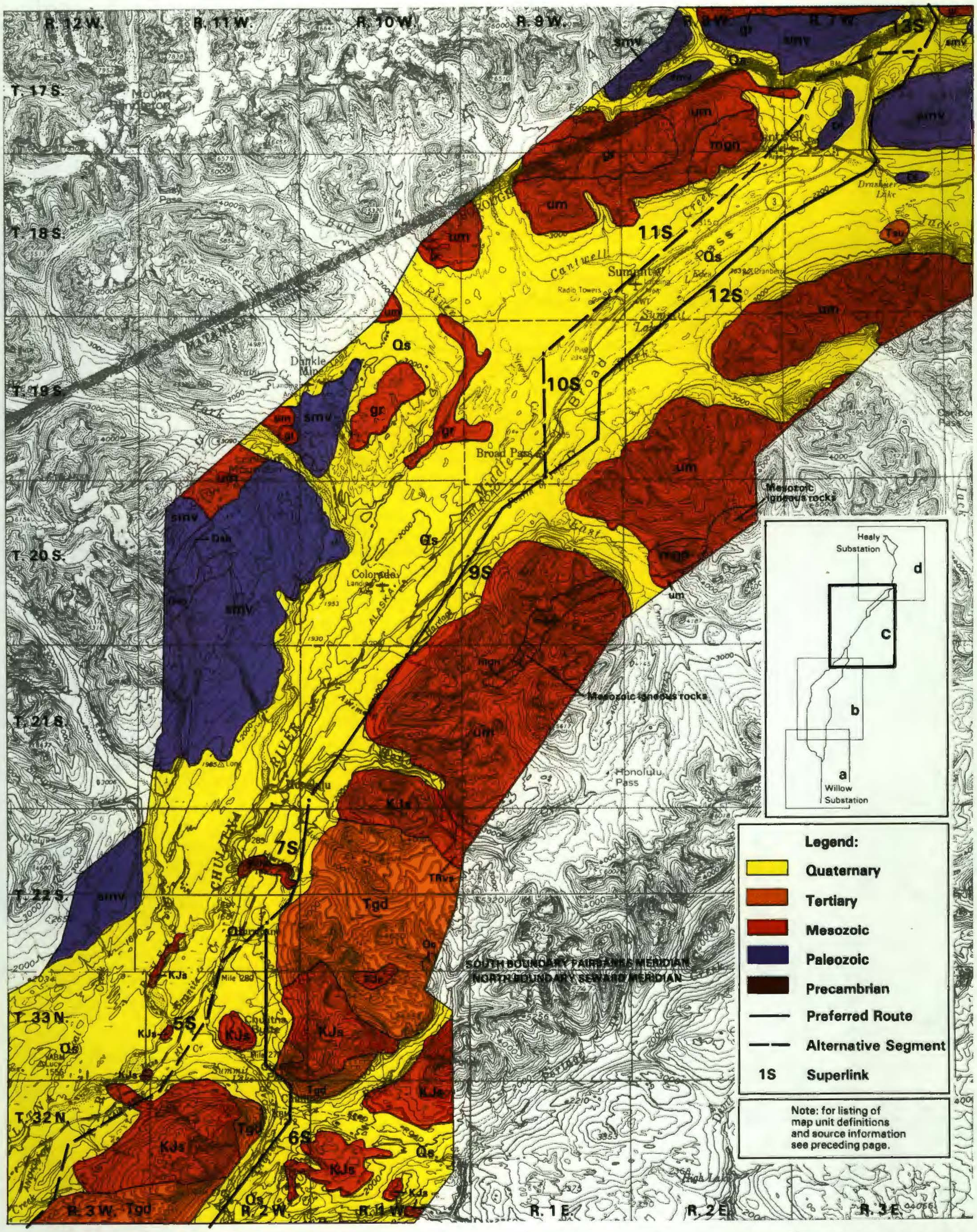

FIGURE 2c

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

0 5 10 Miles

0 5 10 Kilometers

North

Generalized Geology

Gilbert/Commonwealth

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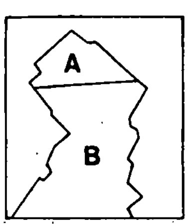


Modified from the following sources:

A. Map of the Alaska Range Between Longitude 147°30' and 150°00' West, Showing Bedrock Geology. Professional Paper 293 Plate 1.

B. Geologic Map of the Alaska Railroad Region Matanuska Coal Field to Yanert Fork. Bulletin 907 Plate 2.

Base Map Source: U.S.G.S. Topographic 1:250,000 Maps.

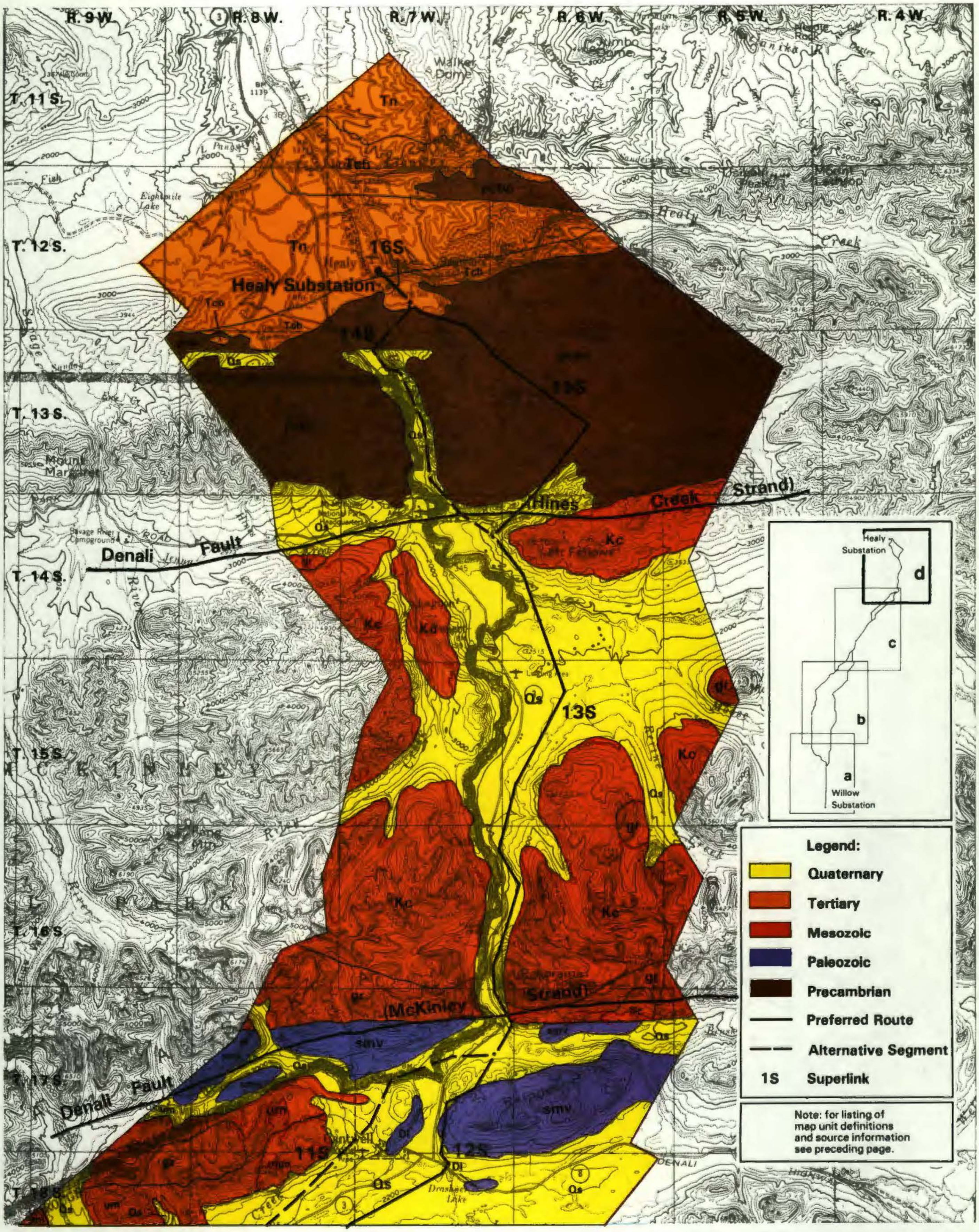


FIGURE 2d

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

Generalized Geology

0 5 10 Miles
0 5 10 Kilometers

North

Gilbert/Commonwealth

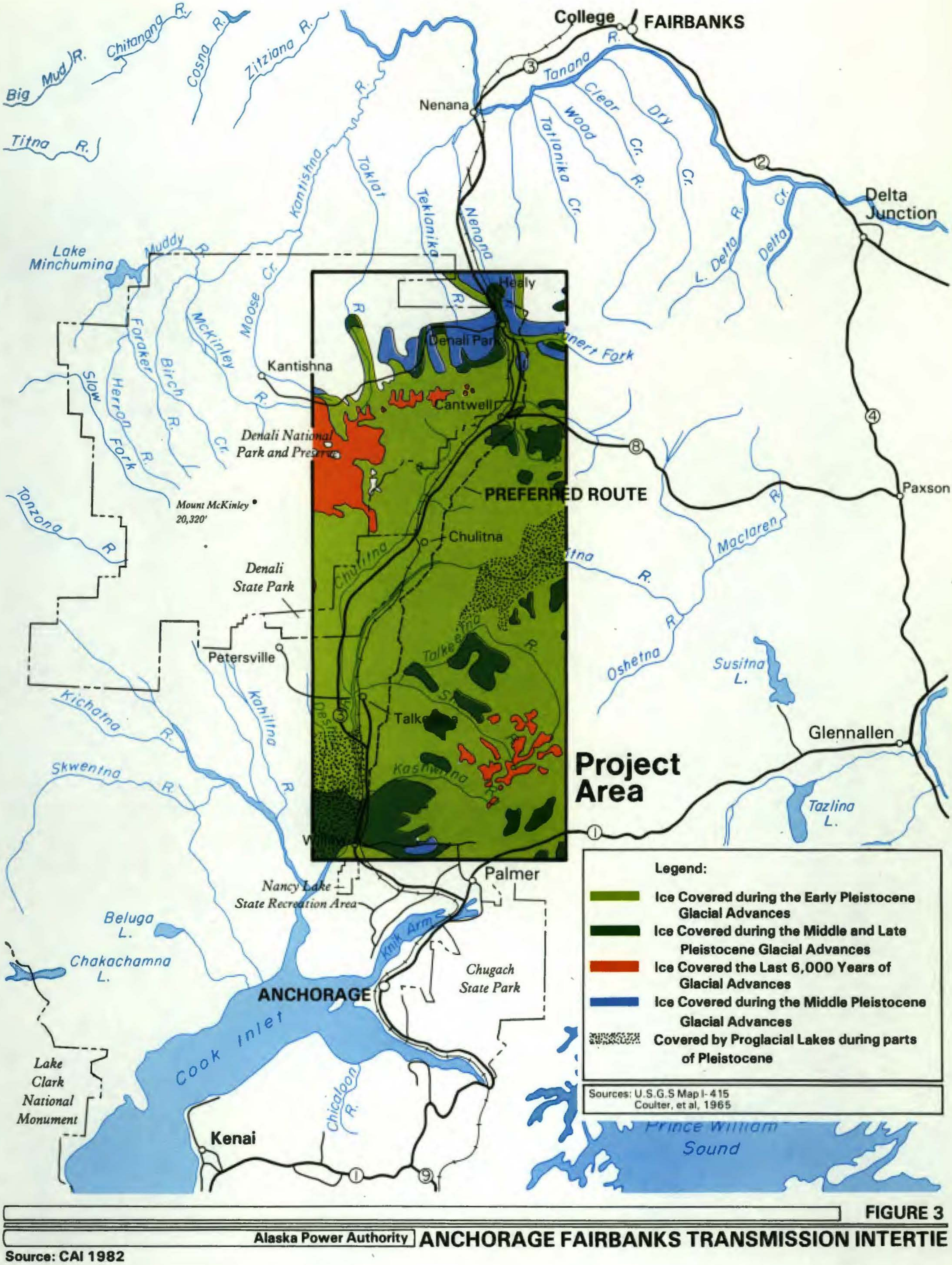


FIGURE 3

Alaska Power Authority | ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

0 30 60 Miles

0 30 60 Kilometers

North

Gilbert/Commonwealth

Extent of Pleistocene Glaciations

In The Study Area

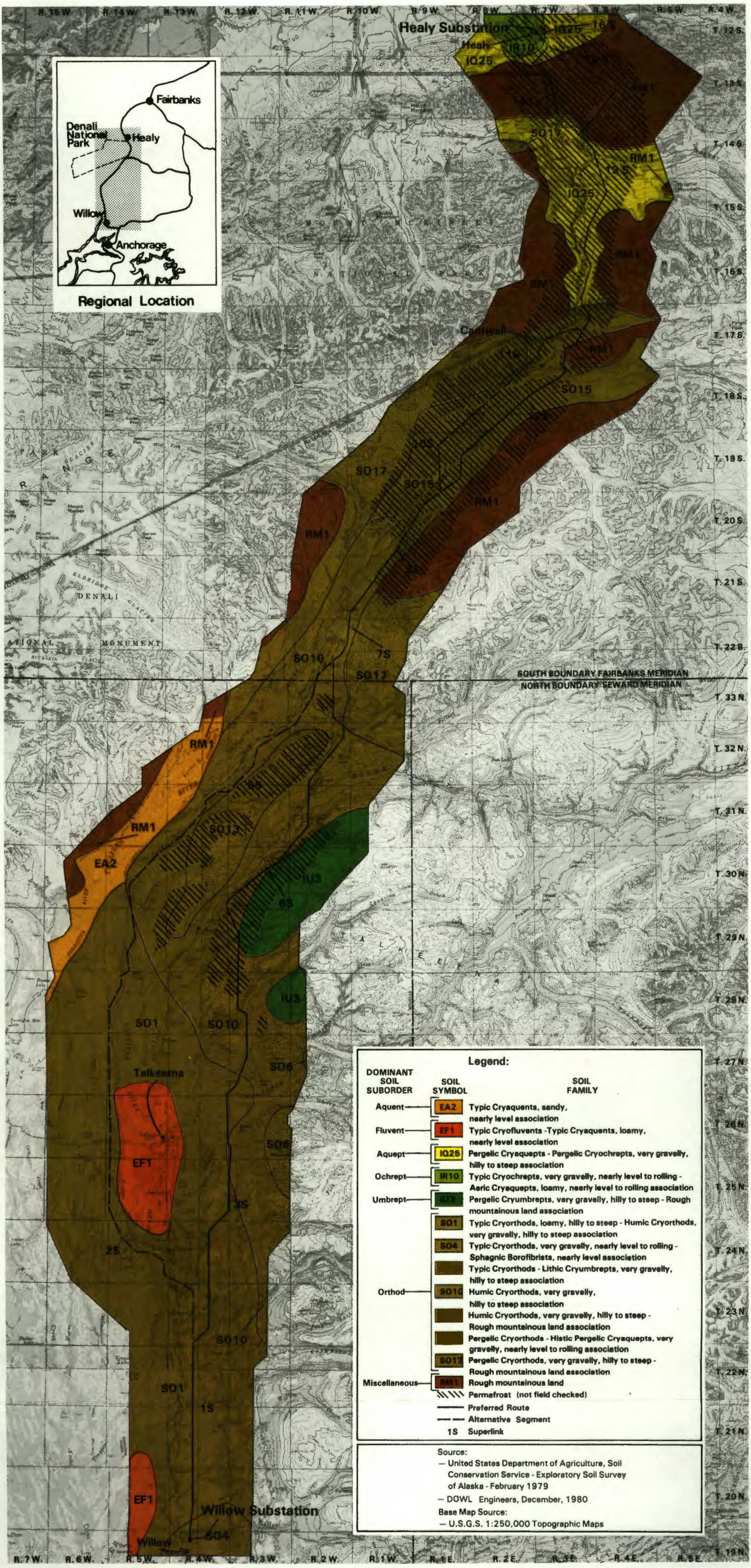


FIGURE 4

Alaska Power Authority

ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

Soils

0 10 20 Miles

0 10 20 Kilometers

North

Gilbert/Commonwealth

TABLE 1

SOIL CHARACTERISTICS

Map Symbol	Soil	Topographic Position	General Texture	Average Slope	Drainage	Permafrost	Hazards To Soil From Off Road Traffic	Remarks
EA2	Typic Cryaquents	Streams channels and outwash plans along Chulitna River	Sandy and gravelly	Nearly level	Poor	Not present	Severe due to wetness	Subject to flooding and stream channel changes.
EF1	Typic Cryofluvents-Typic Cryaquents	Stream channels and terraces west of Willow	Loamy and gravelly	Nearly level	Well to poor	Generally not present	Slight, severe in wet areas	Low or depressional areas subject to flooding.
IQ25	Pergelic Cryaquepts-Pergelic Cryochrepts	Foothills of Alaska Range above 1500 feet	Gravelly with rock outcrops	Sloping to steep	Poor to well	On broad ridges valleys and footslopes	Severe due to steepness and wet areas	Above timberline. Well drained in gravelly material at footslopes.
IR10	Typic Cryochrepts-Aeric Cryaquents	Terraces and foot-slopes around Healy	Silt loam over very gravelly sand	Nearly level to rolling	Well to moderately well	In depressions, drainageways, and seepages	Slight, to moderate due to dust and softness when wet	Forested floodplains with irregular areas of wet tundra and muskeg.
IU3	Pergelic Cryumbrepts-Rough Mountainous Land	Alpine plateaus, rocky slopes and ridges northeast of Talkeetna	Stony and gravelly loam with rock outcrops	Sloping to very steep	Well except poor in swales and seepage areas	In small swales or seepage areas at shallow depths	Severe to very severe due to steepness and rockiness	Soil material is too coarse to form perma-frost throughout.
RMI	Rough Mountainous Land	Upper portion of hills, mountains, ridges and peaks	Stony rock outcrops	Sloping to very steep	Well	Generally not present	Very severe due to steepness and rockiness	Barren upper slopes. icefields, and glaciers. Predomi-nantly tundra vegetation.
SO1	Typic Cryorthods-Sphagnic Borofibrists	Moraine hills, depres-sions, and broad river terraces	Silt over gravelly loam on moraines with moss and peat in depressions	Rolling hills and nearly level	Well on hills to very poor in depressions	Not present	Slight to very severe in wet peaty areas	Forested hills alter-nating with depressions filled by muskeg and lakes.
SO4	Typic Cryothods-Sphagnic Borofibrists	Broad glaciated low-lands adjoining Cook Inlet	Silt over very gravelly sand or sandy loam with moss and peat in depres-sions	Rolling hills and nearly level	Well on hills to very poor in depressions	Not present	Slight to very severe in wet peaty areas	Forested hills alter-nate with depressions filled by muskeg and lakes. Limited to small area near Willow.

TABLE 1
(Continued)
SOIL CHARACTERISTICS

Map Symbol	Soil	Topographic Position	General Texture	Average Slope	Drainage	Permafrost	Hazards To Soil From Off Road Traffic	Remarks
SO6	Typic Cryorthods-Lithic Cryumbrepts	Alpine benches, footslopes and deeply entrenched valleys in the western Talkeetna Mountains	Gravelly sandy loam to gravelly silt loam	Sloping to very steep	Well	Not present	Severe due to steepness and rockiness	Alpine shrubs and tundra in small area east of Talkeetna.
SO10	Humic Cryorthods	Foothills and terraces of Susitna River Valley	Silt loam over stony sandy loam till	Hilly to steep	Well	Generally not present except in small areas at higher elevations	Severe due to steeponess and rockiness	Valley floor north of Talkeetna supporting forest and subalpine shrubs.
SO13	Humic Cryorthods-Rough Mountainous Land	Alpine ridges, benches and footslopes of Curry Ridge	Silt loam over gravelly and stony glacial till with rock outcrops	Hilly to very steep	Well except for a few depressions	Generally not present but may occur on some north facing slopes and swales on high ridges	Severe to very severe due to steepness and rockiness	Subalpine and alpine vegetation.
SO15	Pergelic Cryorthods-Histic Pergelic Cryaquepts	Low moraine hills and broad valley floor along the Susitna River	Thin loam over very gravelly glacial drift with peat in some areas	Nearly level to rolling	Well on hills and poor on depressions	On footslopes and in valleys were poorly drained peaty soils are present	Slight to severe in wet areas	Generally tundra and forest vegetation.
S017	Pergelic Cryorthods-Rough Mountainous land	Alpine areas, ridges and peaks of the Alaska Range	Gravelly and stony silt loam with rock outcrops and peat in some areas	Hilly to steep	Well	On many north facing slopes and under peat deposits	Slight to very severe due to steepness and rockiness	Generally alpine tundra.

Source: USDA Soil Conservation Service, 1979.

site-specific analysis is useful in large area cultural resource studies since regional biological syntheses tend to correct for subtle changes over time in the distribution of biological resources.

Historically, few biological resources in arctic/subarctic regions have proved to be significant in the lives of aboriginal populations, due to the fact that arctic/subarctic regions sustain relatively few total species. Limited seasonal availability of botanical resources forced prehistoric and ethnohistoric human populations to concentrate on animals for subsistence. The ethnology of northern hunting/fishing groups has revealed a clear focus on prey species which can be harvested with the greatest yield. Thus, special attention is placed on large mammals and on fish.

It has long been recognized that most game species tend to be associated with specific habitats. These habitats can usefully be identified in terms of dominant vegetation communities. A mixture of forest, muskeg, shrub and tundra communities cover the project area and have been identified (see Figure 5) from the Anchorage-Fairbanks Environmental Assessment Report (CAI 1982). While recognizing that each of the major vegetation communities is actually a mosaic of smaller communities, it is useful to survey the study area in terms of major botanical units.

Major botanical units reflect various environmental parameters such as topography, drainage, soils and permafrost. These same factors affect the individual mosaic units which make up each of the major botanical zones. As local conditions change over time, the individual mosaic units are expected to change in configuration; but, subject to major disruptions, the larger zones tend to be relatively stable.

This is evidenced in paleopollen records elsewhere in interior Alaska, where the data suggest a relatively stable botanical environment since middle Holocene times (e.g., Ager 1975; J. Anderson 1975; P. Anderson n.d.). However, little is known of the effects of precipitation change, such as might have occurred in postglacial times, on such plant communities as those dominated by willows and alder, especially the latter. Based on personal observations of the current botanical landscape, an increase or decrease in alder could have had dramatic consequences in man's ability to travel overland throughout much of the study area.

Latitude, precipitation and elevation all have a pronounced effect on the boundary between forested and nonforested areas. Tree line is generally between 2500 (762.5 m) and 3200 feet (975 m) above sea level. Mixed birch-poplar-spruce forests generally occur below 2000 feet (609 m) in elevation, and most often on slopes with a southern exposure. Slopes with a southern exposure are less likely to be affected by permafrost, although this is less true farther north.

Five major botanical zones or ecosystems, including three types of forest, characterize the study area: (1) bottomland spruce-poplar, (2) lowland spruce-hardwood, (3) upland spruce-hardwood, (4) shrub, and (5) tundra (Figure 6).

BOTTOMLAND SPRUCE-POPLAR is common to floodplain areas and is also occasionally found in small clumps near the tree line. Both white and black spruce are associated with this ecosystem; however, black spruce tends to be associated with more poorly drained soils, while white spruce is often restricted to the understory vegetation. Poplar and/or cottonwood are commonly associated.

LOWLAND SPRUCE-HARDWOOD areas combine both types of spruce trees with tamarack and white birch. Black spruce is dominant in this ecosystem. This vegetation combination is common to poorly drained areas, often with standing water. Swampy areas characterized by tussocks of cotton grass, mosses and shrubs are common.

UPLAND SPRUCE-HARDWOOD forest ecosystems are characterized by spruce, balsam poplar and birch. Poplar is much more rare than birch. Of the two major types of spruce, white spruce dominates on south-facing and well drained slopes, while black spruce dominates on north-facing and poorly drained areas. Birch is commonly associated with the white spruce stands.

SHRUB areas tend to mark forest margins. Thus, floodplain areas and areas near the tree line are often dominated by shrubs. Shrub forms of birch and various species of willow are common. Stunted black spruce and willows are common to the most poorly drained areas.

TUNDRA is a term that includes wet, moist and alpine tundra regimes. Elevation, topography, drainage, and local soils all converge to dictate which type predominates. Moist tundra is common to foothills and lower elevations; wet tundra is often found in areas with no topographic relief and standing water. For both moist and wet tundra, sedges, tussocks, willows, and dwarf birch predominate. Alpine tundra, found at the higher elevations, is less vegetated than moist or wet tundra, and it consists of local populations of white mountain-avens, low heath shrubs, prostrate willows and dwarf herbs.

It is well documented (e.g., State of Alaska 1974, 1978a, 1978b, 1978c; JFSLUPC 1973) that certain major game species tend to be associated with one of the above discussed ecosystems. For example, moose are browsers and they tend to be associated with lowland areas which support willows and other shrubby growth. In contrast, caribou prefer mosses and lichens which are more common to upland areas.

The following discussion is a brief review of habitat preferences for major game food sources known to have been utilized in ethnographic times. As habitats are assumed to have been fairly stable throughout much of the Holocene, it is assumed that the major food resources of the ethnographic period would also have been the major food resources of much of the Holocene. Because an ethnographically derived exploitative model is used for at least the last half of the Holocene, this period is referred to as the ethnographic Holocene. There are two important aspects to this model: (1) it is assumed that the biological landscape has remained reasonably stable over the past few thousand years, and (2) it is assumed that potential food resource species have been limited for that period of time, and people throughout this period would have focused on essentially the same game species.

Those animals commonly found in the study area and known to have been exploited heavily during ethnographic times are presented in Table 2. Behavioral aspects of some of these species are summarized in the following discussion.

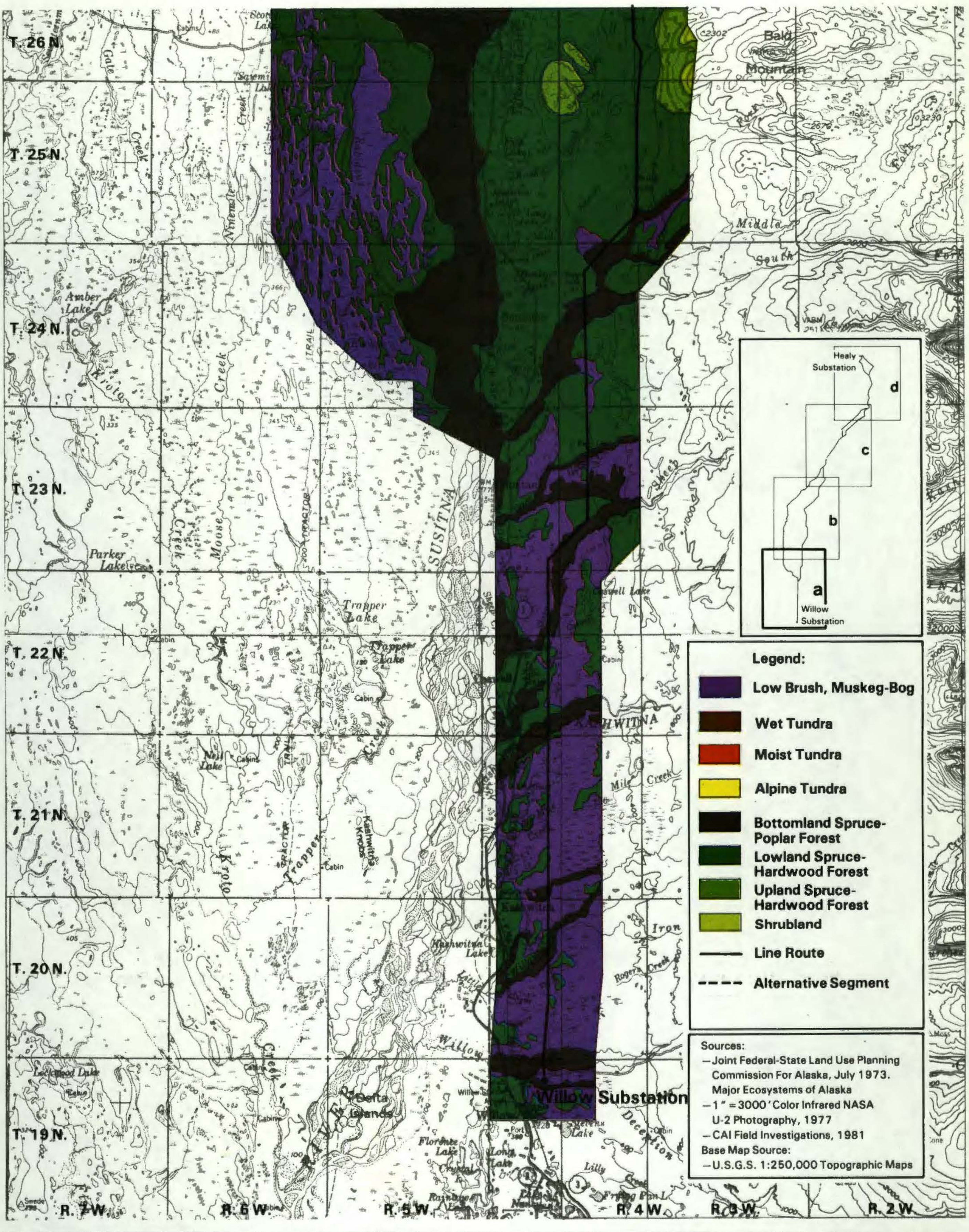


FIGURE 5a

Alaska Power Authority | ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

Vegetation Cover Types

0 5 10 Miles
0 5 10 Kilometers

North

Gilbert/Commonwealth

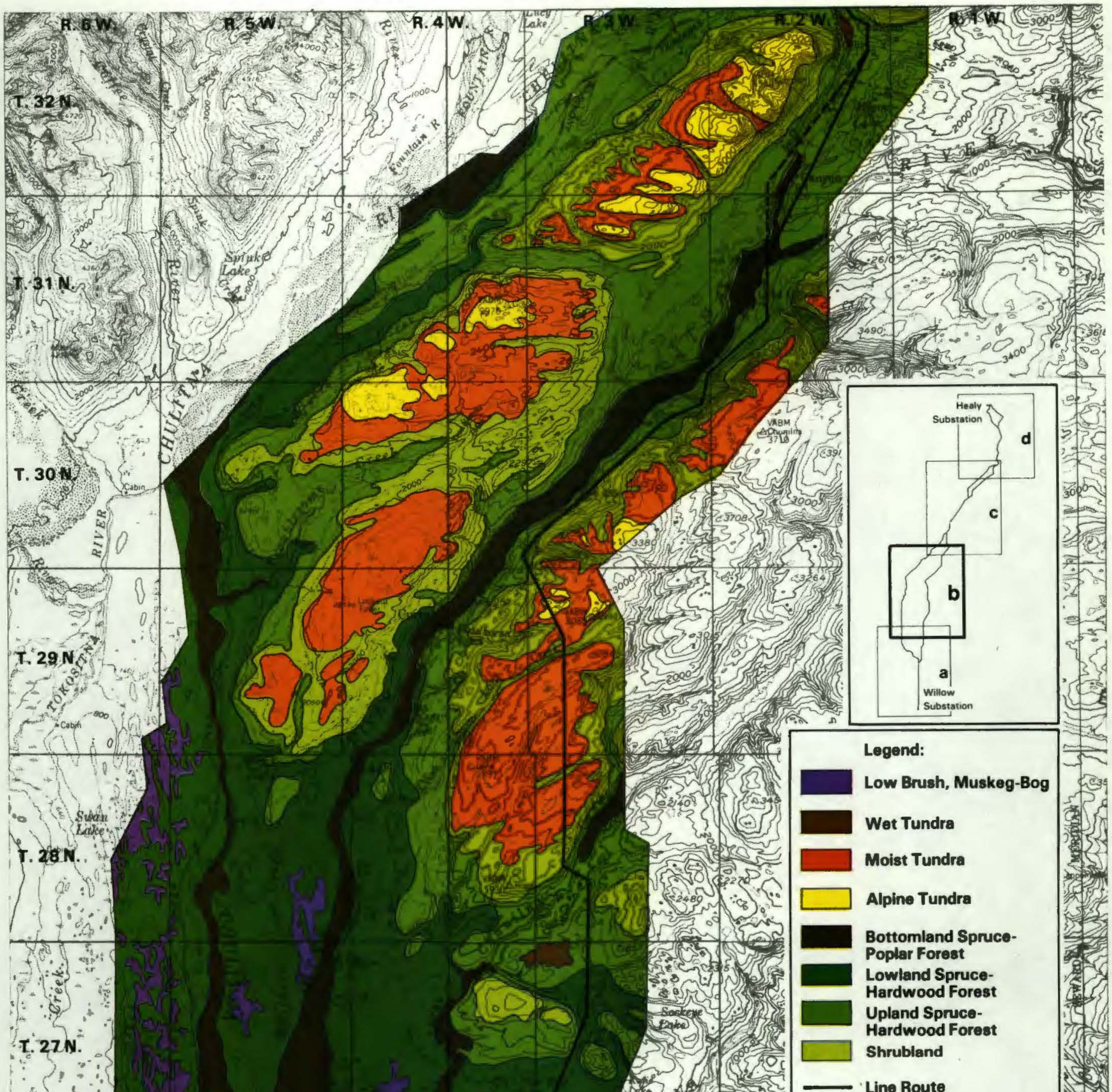


FIGURE 5b

Alaska Power Authority | ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

0 5 10 Miles

0 5 10 Kilometers

North

Vegetation Cover Types

Gilbert/Commonwealth

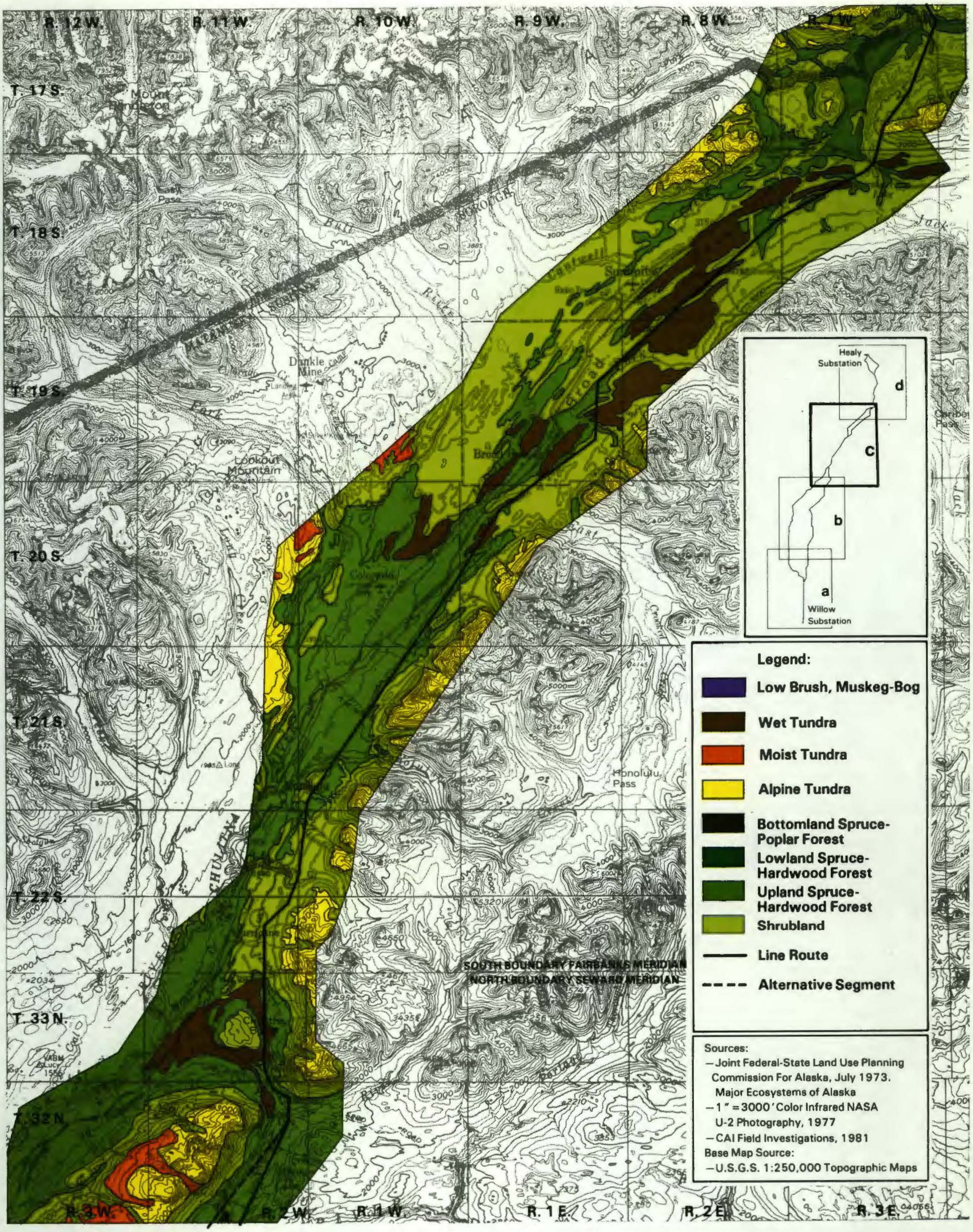


FIGURE 5c

Alaska Power Authority | ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

0 5 10 Miles

0 5 10 Kilometers

North

Vegetation Cover Types

Gilbert/Commonwealth

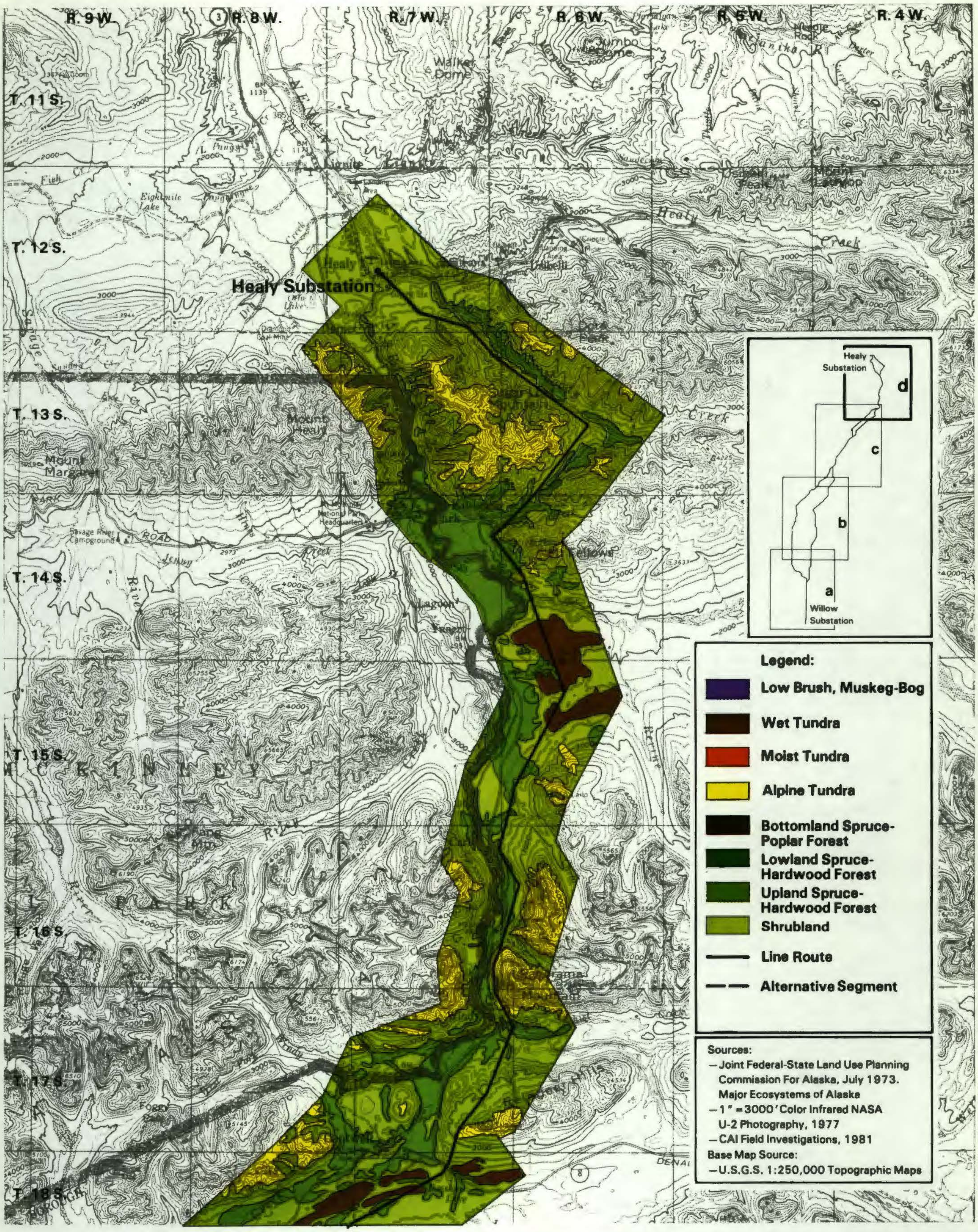


FIGURE 5d

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

Vegetation Cover Types

0 5 10 Miles

0 5 10 Kilometers

North

Gilbert/Commonwealth

Lowland Spruce - Hardwood Near Talkeetna

Moist Tundra Near Lane Creek

FIGURE 6a

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Representative Vegetation and Topography

Gilbert/Commonwealth

Upland Spruce - Hardwood with Moist Tundra Near Canyon

Upland Spruce - Hardwood and Shrubland, Alaska Range

FIGURE 6b

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Representative Vegetation and Topography

Gilbert/Commonwealth

TABLE 2

ANIMALS COMMONLY FOUND IN THE STUDY AREA

LARGE MAMMALS	
Black Bear	Ursos americanus
Brown-Grizzly Bear	Ursos arctus
Caribou	Rangifer tarandus
Dall Sheep	Ovis dalli
Moose	Alces alces
Wolf	Canis lupus
SMALL MAMMALS	
Beaver	Castor canadensis
Coyote	Canis latrans
Flying Squirrel	Glaucomys sabrinus
Land Otter	Lutro canadensis
Lynx	Lynx canadensis
Marten	Martes americana
Mink	Mustela vison
Muskrat	Ondrata zibethicus
Porcupine	Erethizon dorsatum
Red Squirrel	Tamiasciurus hudsonicus
Weasels	Mustela sp.
Wolverine	Gulo gulo
FISHES	
Burbot	Lota lota
Dolly Varden	Salvelinus malma
Grayling	Thymallus arcticus
Rainbow Trout	Salmo gairdneri
Whitefish	Prosopium cylindraceum
	Coregonus nasus
Salmon	
Chum	Oncorhynchus keta
Coho	O. kisutch
King	O. tshawytscha
Pink	O. gorbuscha
Sockeye	O. nerka
BIRDS	
Spruce Grouse	Canachites canadensis
Rock Ptarmigan	Lagopus mutus
Willow Ptarmigan	L. lagopus
White-Tailed Ptarmigan	L. leucurus
(and various migratory waterfowl and seabirds)	

MOOSE (Alces alces) are known to range throughout the project area. The general pattern is for wintering along the shrub-dominated floodplain areas near the major watercourses. During the warmer months, moose tend to move to higher elevations and into the upland spruce-hardwood forests where spring calving can occur in a more protected setting. Moose tend to move individually, although they sometimes gather in the fall in herds of up to more than 30 individuals.

CARIBOU (Rangifer tarandus) are more common to the northern portion of the project area, especially in the higher elevations. Caribou in the project area tend to move in small to moderately-sized groups, and they prefer the mosses and low plant growth of the tundra areas. They can also be found in the more forested regions. For much of the year they tend to travel near the tree line, especially in the spring calving season when trees offer protection to the newborn.

DALL SHEEP (Ovis dalli) today are restricted to the mountainous regions of the Alaska Range. A major lambing area is adjacent to the Parks Highway, on the west side of Sugarloaf Mountain.

MIGRATORY GAME SPECIES move through the study area during the warmer summer months. Various species of ducks, swans, and cranes are known to nest in the project area, where they are attracted to the freshwater marshes and swamps.

SMALL FUR BEARING MAMMALS abound over nearly all of the project area. However, they are especially concentrated near riparian habitats.

AQUATIC RESOURCES most exploited by man include a variety of anadromous Pacific salmon as well as several common riverine fish species. Tables 3 and 3a (CAI 1982:121, 123) include a list of freshwater species common to the project area.

Figure 7 (CAI 1982:85) shows the relationship between selected food resource availability areas and the project area. For a fuller summary of project area habitat, both biological and physical, the reader is directed to an excellent review produced in the Environmental Assessment Report: Anchorage-Fairbanks Transmission Intertie (CAI 1982).

MAN-HABITAT INTERRELATIONSHIPS

It is reasonable to assume that the natural distribution of food resources which were a major part of the diet of aboriginal human populations must have had a major effect on where those human groups lived. Available biological literature establishes the fact that species representing major food resources are intimately linked with specific habitats, and these habitats can be usefully generalized in terms of ecosystems (e.g., JFSLUPC 1973). Available paleopollen data for interior Alaska suggest that modern ecosystems have been in place for approximately the last half of the Holocene period; thus food resource distribution has remained relatively stable for that same period.

Because of limited food resources in the arctic/subarctic, subsistence hunters/fishers must necessarily have focused on certain game species. Key game species include moose, caribou and several varieties of freshwater fish. The range,

TABLE 3

FRESHWATER FISH FOUND IN THE SUSITNA RIVER AND NENANA RIVER BASINS IN THE VICINITY OF THE INTERTIE[1]

Arctic lamprey	Lampetra japonica	S[2]	-
Pacific lamprey	L. tidentata	S	-
Alaska whitefish	Coregonus nelsoni	-	N[3]
Least cisco	C. sardinella	-	N
Pink salmon	Oncorhynchus gorbuscha	S	-
Chum salmon	O. keta	S	N
Coho salmon	O. kisutch	S	N
Sockeye salmon	O. nerka	S	-
Chinook salmon	O. tshawytscha	S	N
Round whitefish	Prosopium cylindraceum	S	N
Inconnu	Stenodus leucichthys	-	N
Rainbow trout	Salmo gairdneri	S	-
Dolly Varden	Salvelinus malma	S	N
Lake trout	S. namaycush	S	N
Arctic grayling	Thymallus arcticus	S	N
Pond smelt	Hypomesus olidus	S	-
Surf smelt	H. pretiosus	S	-
Ealachon	Thaleichthys pacificus	S	-
Northern pike	Esox lucius	S	N
Lake chub	Couesius plumbeus	-	N
Longnose sucker	Catostomus catostomus	S	N
Burbot	Lota lota	S	N
Threespine stickleback	Gasterosteus aculeatus	S	-
Coastrange sculpin	Cottus aleuticus	S	-
Prickly sculpin	C. asper	S	N

[1]Source: Morrow, J. E. 1980. The freshwater fishes of Alaska. Alaska Northwest Publishing Company, Anchorage, Alaska.
McPhail, J. D. and C. C. Lindsey. 1970. Freshwater fishes of northwestern Canada and Alaska. Fisheries Research Board of Canada, Bulletin 173.

[2]S - denotes occurrence in the Susitna River Basin

[3]N - denotes occurrence in the Nenana River Basin

TABLE 3A

KNOWN FISH HABITAT (SPAWNING AND OTHER) FOR THE GENUS <u>ONCORHYNCHUS</u> IN THE INTERTIE PROJECT AREA[1]

	Chinook	Sockeye	Coho	Pink	Chum
Susitna River	*	*	*	*	*S
Willow Creek	*S	*	*	*S	*
Little Willow Creek	*S	*	*S	-	-
Kashwitna River	*	-	*	-	*S
North Fork Kashwitna River	*S	*S	-	-	-
Caswell Creek	*	-	-	-	-
Sheep Creek	*S	-	-	*	*
Goose Creek	*S	-	-	*	-
Montana Creek	*	-	-	*S	*S
Sunshine Creek	-	-	*S	-	-
Question Creek	-	-	*S	-	-
Birch Creek	*	*S	*S	*S	*S
Trapper Creek	*	-	*S	-	-
Rabideux Creek	-	-	*S	-	-
Talkeetna River	*	*	*	*	*S
Chulitna River	-	*	*	-	*
Chunilna Creek	*	-	*	*	*S
Wiskers Creek	*S	-	*S	-	-
Troublesome Creek	*S	-	*S	-	*S
Tokositna River	*	*	-	-	-
McKenzie Creek	-	*S	-	-	-
Spinks Creek	*	*	-	-	-
Byers Creek	*S	*	*S	-	*S
Byers Lake	-	*S	-	-	-
Gold Creek	-	-	-	*	-
Indian River	*S	-	*S	*	*
Salmon Creek	*	-	*	*	*

[1]Source: Alaska Department of Fish and Game. 1978. Alaska's fisheries atlas, volume I. State of Alaska. Juneau, Alaska, USA.

* - denotes an occurrence of fish species in a watercourse

S - denotes use as spawning habitat

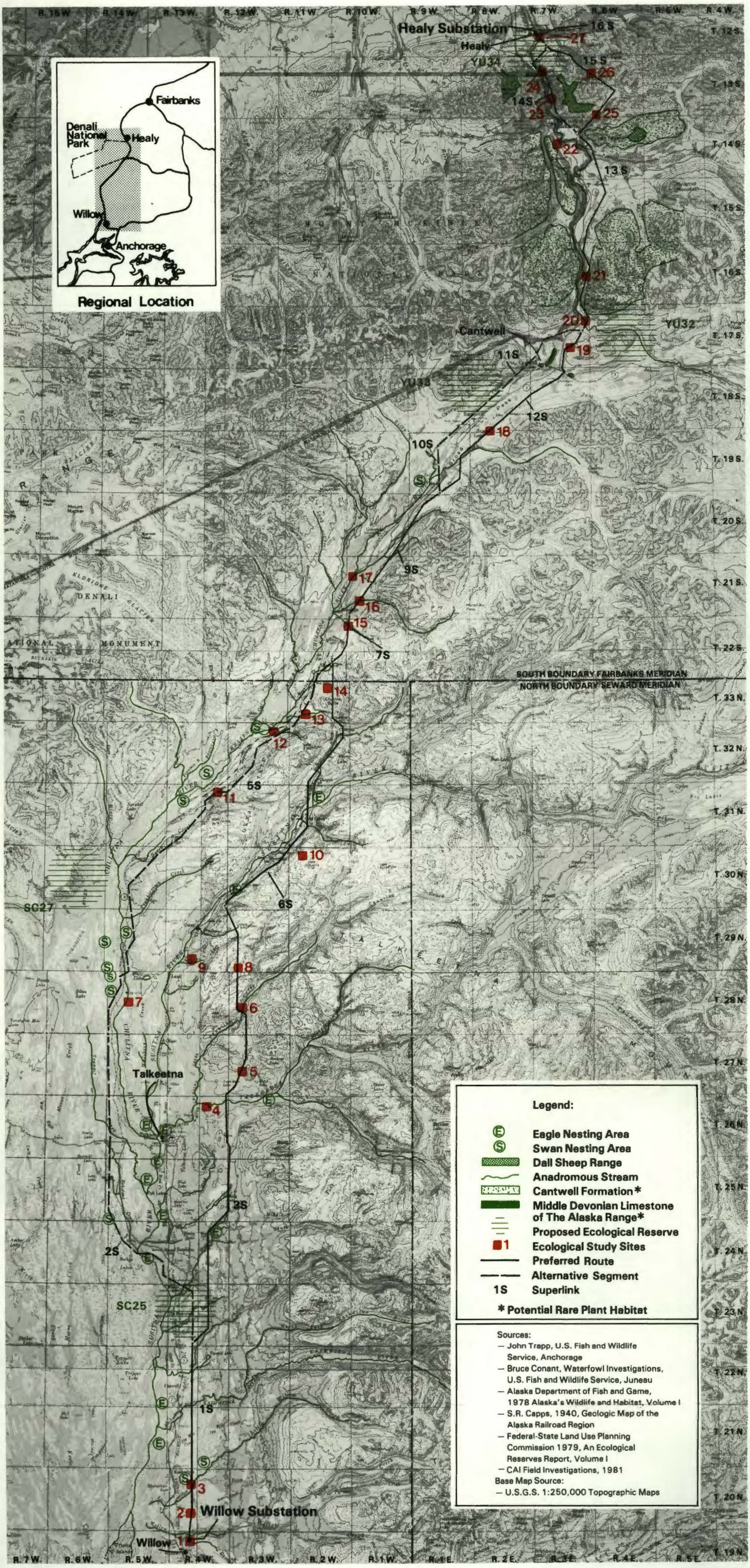


FIGURE 7

Alaska Power Authority **ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE**

Source: CAI 1982

0 10 20 Miles

0 10 20 Kilometers

North

Areas and Species of Concern

Gilbert/Commonwealth

movement, and associated habitat of each of these food resources are predictable from season to season. This allowed people of the ethnographic period, and presumably earlier, to schedule and sequence harvesting activities in a manner designed to insure at least minimum necessary food procurement in every season. This exploitative pattern is supported by an associated settlement pattern in which basic limitations imposed by the lack of sophisticated transportation and food storage systems forced aboriginal human groups to locate settlements near the resource harvest. A way of life emphasizing geographic mobility and light settlement density developed.

As moose and caribou are most easily hunted when in their largest groupings, which occur in the fall, hunting of these game animals tended to be scheduled at that time. Fish runs, which occur during the summer months, were harvested at that time. South-central Alaska, with its heavy snow depth and frozen rivers, provides little opportunity for effective hunting of large animals during the winter months. Thus, it was necessary to store food, such as dried fish and meat, for the winter. These stored foods were augmented by hunting small animals such as rabbits and ptarmigan. Occasional moose and caribou were also isolated and killed.

The seasonality of game distribution, combined with low absolute numbers of game animals, necessitated a low human population density. Settlement patterns were linked to harvest and food storage locations; these were often close together. The result was a pattern which focused on fishing and fish camps during summer months and on hunting and hunting camps in the fall and early winter. In late winter, when stored food resources were exhausted and only small animals could be depended upon for food, groups dispersed to even smaller units, often single families. Fish camps and caribou fences, the latter used in caribou hunting, required the cooperation of extended family units or combinations of family units. These larger groups seldom would have exceeded 100 persons and were more likely in the range of 30 to 40 persons. So important was each aspect of the seasonal harvest schedule that failure of the summer fishing or of the fall hunting could mean starvation for an entire group.

RESEARCH ORIENTATION

Following White (1949), and more recently Steward (1955), the research reported in this document is based on the broad concept of cultural ecology, which focuses on the interaction between human social behavior, material culture and the physical environment. A basic assumption is that material culture applied to the physical environment reflects social behavior, and that, if patterns are observed in the technological record, then corresponding patterns may be inferred in the social behavior of the societies which used the technology.

Ethnology of northern hunting/fishing groups has revealed a clear correlation between the spatial distribution of human predators and their prey (e.g., Boas 1964; Campbell 1969; McKennan 1969; Spencer 1959 and Watanabe 1968). These previous studies suggest that resource exploitation is both social and patterned behavior. Furthermore, it is assumed that exploitative patterns change to reflect shifting availability of food resources.

Those aspects of material culture most closely associated with securing food will be most sensitive to changes in available food resources (Steward 1955). Granting these assumptions, two basic levels of analysis can be pursued through the study of the material leavings of human groups. First, extinct behavior patterns can be revealed through the study of technology as it is preserved as discarded material culture. Secondly, changing patterns reveal behavioral response to changing physical environment conditions.

Cultural ecology studies must necessarily include discussion of cultures present and of the milieu in which they are found. But because baseline archeological and environmental data for south-central Alaska are not yet available in detail, initial discussion must be at a general level. An example of such analysis is Holmes' (1975) discussion of the socioeconomic-territorial aspects of the "Athapaskan Environment System." That approach attempts to define man-habitat interrelationships in terms of general systems theory by defining culture, geological environment and biological environment as three subsystems of a total environmental system.

Cultural behavior has resulted in the creation of archeological sites, each of which is located in a specific environmental setting. It is in the interest of land planners to discover correlations between kinds of environmental settings and archeological sites (if such correlations exist), because then study of environmental settings could result in the prediction of archeological site occurrence. This problem has been approached from a regional perspective in the past (Bacon and Holmes 1980) because environmental data are most uniform at a regional level of synthesis. It is with this regional orientation that the Phase I survey was initiated.

METHODS

FIELD METHODS

Two methods of survey were used in the study: foot traverse and aerial helicopter reconnaissance. Foot traverse, or pedestrian survey, was used for flat or gently rolling terrain (generally less than 20 degree slope) where dense vegetation was not an impediment and where land was relatively well drained. In regions of rugged topographic relief and in poorly drained areas, such as swampy flats, survey was conducted from the air. All areas similar to those known ethnographically to have been utilized were examined on the ground. Such areas included hilltops and overlooks (Fall 1981; Osgood 1937). Survey methods recognized that subsurface investigation should concentrate on areas of (1) highest archeological potential and (2) highest matrix stability, where sites could be preserved.

For purposes of this study, areas of poor or low archeological potential were defined as areas in which one or more of the following conditions prevailed:

1. Areas under standing or running water were considered low in archeological potential for two reasons. First, more modern populations would no doubt have considered such locations unfit for camps. Second, such areas are extremely difficult to sample archeologically using the standard survey techniques employed. In such situations, sites will remain undetected.

2. Areas of steep slope were considered low in archeological potential. In the subartic environment of south-central Alaska, cryoturbation works near surface sediments and displaces them downslope. Significant movement of sediments can occur with as little as a 3 degree slope. Such displacement causes severe damage to archeological sites by obscuring spatial interrelationships of site artifacts and features. Thus, much of the scientific value of a site damaged through cryoturbation is lost. Slopes in the range of approximately 20 degrees or steeper were considered steep enough to cause significant damage to any sites caught in downslope movement caused by frost action.

3. Areas covered by thick vegetation were classed as low in archeological potential, not because such areas are likely devoid of archeological sites, but because currently standard survey techniques fail to detect sites in such settings with any degree of dependability. Currently acceptable survey methodology requires constant evaluation of surface expression of such variables as topography, plant color and type, and erosion features. All these important details are obscured in thick vegetative cover. In such situations, archeological survey becomes limited to chance prospecting using data obtained in test pits. Test pits reveal such a limited amount of potential culture bearing sediment (far less than 0.01 percent) as to be statistically meaningless. As a result, such areas were excluded from concentrated terrestrial survey.

In contrast to the limitations imposed by heavy vegetation on archeological survey for prehistoric sites, such vegetation often does not hinder the search for more recent archeological sites. Historic period cabin remains and even aboriginal village sites have successfully been located using aerial (helicopter) survey techniques (Bacon et al. 1982).

4. Areas disturbed by recent historic period activity were considered as low in potential for yielding significant cultural resources.

Surface inspection for artifacts or other cultural features was inhibited in most places by a heavy vegetation cover which obscured underlying sediments. Particular attention was thus devoted to observing natural exposures such as stream cut banks, animal burrows, frost boils, uprooted tree roots, and a variety of erosional surfaces. In cases where no natural exposure of underlying sediments was present at locations judged to be likely site locations (on the basis of ethnology and/or archeology), subsurface tests were made with a small shovel and trowel. These exploratory tests were excavated usually to a depth where bedrock, frozen ground, or gravel occurred. In areas where surface sediments were too thick to penetrate with a shovel and trowel, tests were arbitrarily terminated before they reached a depth of approximately one meter below the surface.

Site locations were determined using U.S.G.S. topographic maps (scale 1:63,360). Other observations made at sites included a gross estimate of possible site size and a basic characterization of the artifact array revealed in surface exposures and tests.

Small collections of surface and subsurface artifacts were made at selected sites. Photographs were taken to document field conditions, survey methods, and site environmental settings. Curation of photographs, field notes, and artifacts followed accepted professional standards. All collections were cleaned and cataloged, and will be accessioned to the University of Alaska Museum in Fairbanks, Alaska. Site survey cards for each discovered site will be filed in the Alaska Heritage Resources Survey file maintained by the Alaska Division of Parks in Anchorage, Alaska.

SURVEY METHODS

The survey methods employed for the Transmission Intertie archeology project were selected on the basis of their efficiency for locating sites as demonstrated by other archeological projects charged with the responsibility of surveying large areas in Alaska. One of the first decisions to be made was whether to make use of a probabilistic sampling approach. Because of the linear orientation of the corridor, the statistical approach would correspond to some sort of interval transect scheme (Judge, Ebert, and Hitchcock 1975:100-103). Such statistical approaches eliminate investigator bias in the selection of areas to be more intensively investigated (i.e., subjected to test excavation or pedestrian survey in the case of the powerline project), by forcing the field archeologist to examine areas thought to be relatively poor in archeological potential.

The statistical approach was rejected because: (1) the detailed environmental information necessary to stratify the transect into sampling units having some microhabitat integrity was lacking and, (2) the scheduling of the overall powerline evaluation project (and recognized funding constraints) imposed a sampling level of just a few percent of the total project area which could be intensively scrutinized on foot -- a portion which would be insufficient to yield statistically significant coverage of the study area within a probabilistic sampling scheme.

Therefore, it was desired that the survey focus upon different broad types of environmental features using a sliding scale of investigative scrutiny, the scale and ranking of environmental features being based on a combination of ethnographic information, known regional archeological site distribution, immediate logistics, and common sense. The suitability of such an approach, rather than a statistically oriented probabilistic method, is supported by the results of the fixed interval testing exercise implemented in the archeological survey of the proposed Northwest Alaska Gas Pipeline route (Aigner and Shinkwin 1979). That survey collected considerable negative data, but in fact failed to reveal several known sites along the northern portion of the proposed alignment (Gannon, oral communication, 1982).

Areas considered to be of relatively high archeological potential tended to have certain topographic and vegetation qualities. Hilltops, for example, are known both archeologically and ethnographically to have been used for hunter lookout stations. Suitable rock outcrops are also known to have been mined or quarried for material used in the manufacture of stone artifacts. Areas of relatively high archeological potential were further delimited by excluding from consideration those areas which (1) could not be reasonably tested given accepted survey techniques or (2) had been sufficiently disturbed so as to preclude the likelihood of sites surviving intact. An example of areas that can not be reasonably tested includes areas currently under standing or running water. Disturbed areas include those disturbed by modern human activity and those which have suffered natural damage such as through erosion or cryoturbation.

Aerial reconnaissance was used to survey portions of the survey area characterized by steep sidehill slopes. These areas suffer from massive downslope movements of surface and near surface sediments, often due to the effects of frost action. In these areas, opportunities for finding preserved archeological sites are greatly reduced. In addition, such areas are not known archeologically and/or ethnographically to be likely site locations. However, despite the low archeological potential, portions of such areas were surveyed on foot. Above ground features, such as cabin ruins and mining equipment, were visible from the air.

At all times the field survey strategy recognized limitations of precise cross country compass navigation and a lack, in certain locations, of adequate helicopter landing places. Figure 8 summarizes the final Intertie alignment in terms of type of survey conducted. Alternate routes surveyed are depicted on maps in Appendix C. The entire final route was subjected to aerial inspection via helicopter several times. All terrestrial survey was augmented by examination of underlying sediments as exposed in natural erosion features and test pits.

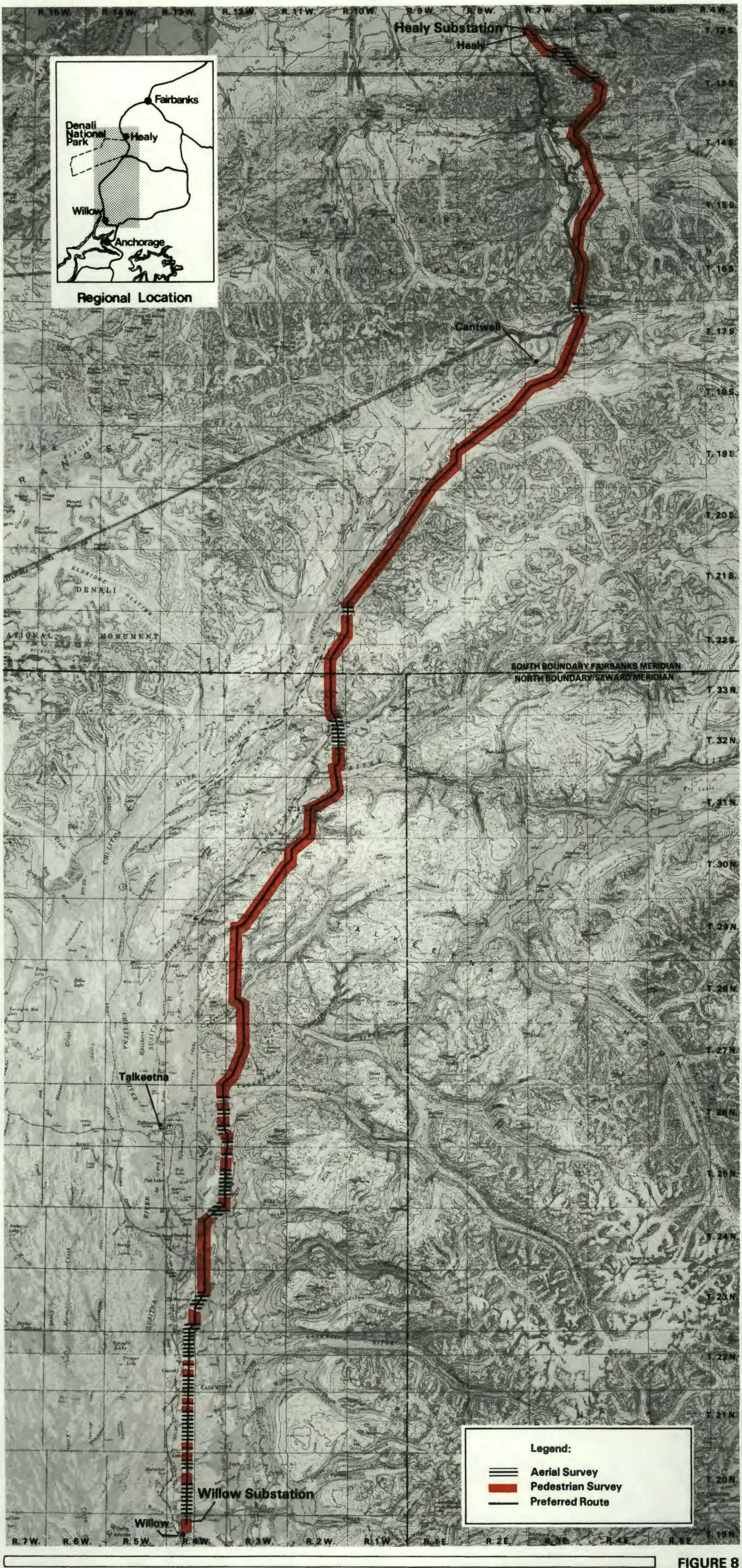


FIGURE 8

Alaska Power Authority | ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Survey Methods

Source: CAI 1982

0 10 20 Miles

0 10 20 Kilometers

North

Gilbert/Commonwealth

FORTUITOUS FINDS

Nearly all of the archeological finds of 1981 and 1982 (both historic and prehistoric) are located outside the project corridor and away from proposed access routes and camp/staging areas. These sites were discovered under a variety of circumstances. Most were located at or near helicopter landing places. Some were located by archeologists who climbed to vantage points in order to gain terrain perspective during survey. All of these sites are recorded here, not because they represent potential project impact problems, but because, in a sense, initiation of the Transmission Intertie archeological survey effort was responsible for or led to their discovery. All finds were assigned AHRS site alpha-numeric designators even though some, such as HEA-225, may prove not to be sites.

SITE DEFINITION

Following Doelle (1977:202), artifact clusters are regarded to constitute a site when the following conditions are met:

1. A site must have definable limits.

2. A site must have an artifact density greater than five artifacts per square meter.

Artifact clusters which fail to meet these criteria are considered as "non-sites," or more properly "find spots."

SUMMARY OF STUDY AREA PREHISTORY AND HISTORY

REGIONAL CONTEXT

One interpretive scheme characterizes the archeology of central Alaska in terms of five major periods: (1) an early Tundra period, ending circa 8,000 years before present (B.P.); (2) an Early Taiga period, circa 8,000 to 4,500 B.P.; (3) a Late Taiga period, circa 4,500 years ago to approximately A.D. 500; (4) an Athapaskan period, from approximately A.D. 500 to about A.D. 1900 and, (5) a Recent period from about A.D. 1900 to the present time (e.g., Bacon 1977) (Figure 9). Dumond (1982:885-895) has recently reviewed the various environmental constructs employed by archeologists in their discussion of post-Pleistocene adaptation in the North American arctic/subarctic. It is clear from his discussion that little is known about conditions and events associated with the early Holocene period.

The Tundra period in Alaska is still poorly understood, but it likely represents a time of early postglacial adaptation. A changeover from steppe (grassland) to shrub tundra must have had dramatic consequences for early man's faunal food resources (see Stanley 1980:663-666). Few archeological sites are known from this early period in Alaska; none are known from south-central Alaska. Direct evidence of the people of the Tundra period comes from four locales in interior Alaska.

Frederick Hadleigh-West has defined an early stone tool complex on the basis of evidence from several small archeological sites in the Tangle Lakes region (1967, 1974, 1975). Hallmarks of the "Denali complex" are stone cores and microblades, characteristic scraper-gravers known as "Donnelly burins", bifacial stone knives and stone endscrapers. West has argued that the locations of many of these archeological sites suggest a primary dependence upon caribou for the people who occupied them. His reasoning takes into account that many of the sites are located on the shores of lakes which are in turn located in the vicinity of one of interior Alaska's major caribou herds (the Nelchina herd), and that interior Alaska ethnographies are filled with accounts of caribou hunted by chasing them into water where they were more easily killed. Recently, West (1981) has considered the possible association between Denali peoples and interior Alaskan bison herds.

The Healy Lake Village site (Cook 1968; Cook and McKennan 1970) contained tools which possibly date to 11,000 years ago. These tools exhibit similarities to tools from the recently discovered Dry Creek archeological site near Healy, Alaska. The Dry Creek archeological site also dates in excess of 10,000 years ago (Holmes 1974). The fourth area from which it is possible to document human occupation of central Alaska during the Tundra period is in the vicinity of Donnelly Dome near Delta Junction, Alaska. Donnelly Ridge, adjacent to Donnelly Dome, has produced stone tools of the Denali Complex (West 1967) and two deep and stratified archeological sites containing Denali Complex material have recently been discovered at nearby Fort Greely (Bacon and Holmes 1980).

It is not yet clear what relationships, if any, existed between the early peoples of interior Alaska and those peoples who are now known to have inhabited the Pacific Gulf Coast of Alaska since at least 10,000 years ago (Fladmark 1979). So far, evidence for early coastal populations is restricted to the Aleutian Island group and to the Alexander Archipelago of southeastern Alaska. However, early man sites along the shores of Cook Inlet cannot be ruled out without further study.

Forests began postglacial invasion of eastern interior Alaska perhaps as early as 10,000 years ago, and by 6,000 years ago spruce forest was present near the Onion Portage archeological site in western interior Alaska (Anderson 1971). During this period a series of boreal adaptations was evident across North America. Many of these adaptations were expressed in technologies which were characterized, in part, by side-notched projectile points.

Presently available evidence indicates that, with the postglacial warming trend, forests replaced the earlier shrub-tundra in central Alaska about 9,000 years ago (Ager 1974; Matthews 1974; Schweger n.d.). However, homogeneity of forest cover cannot be expected. The Tangle Lakes area, which lies in the southern flanks of the Alaska Range, apparently experienced a drastic reduction in the amount of spruce trees present during a period ending about 3,500 years B.P. and beginning sometime after 9,000 years B.P., but before 4,700 years B.P. (Ager and Sims 1981).

Scanty archeological data from the early Holocene period (that period following the last major glaciation, approximately the last 10,000 years) suggest that a series of forest adapted archaic cultures inhabited central Alaska (Anderson 1968; MacNeish 1964). Characteristic of the Northern Archaic Tradition's stone tools were: side-notched projectile points, stone endscrapers, elongated and semilunar bifacially chipped forms, boulder chip artifacts, large unifacially chipped forms, notched pebbles, stone axes, hammerstones, and choppers. These people probably lived primarily on caribou, moose, bison, and fish since these food resources would have been the most abundant.

As the effects of the thermal maximum began to diminish, interior Alaska likely felt the slight retreat of forest margins. More importantly, conditions for the slight expansion of shrub-tundra might have improved. This is a particularly interesting point when considering the margins of the Susitna River basin since much of that area is presently near tree line.

The Late Taiga period saw the development of Arctic Small Tool Tradition, with its emphasis on a microlithic technology, on the western coast of Alaska. During middle Arctic Small Tool times, Boreal Choris, with its large lanceolate projectile point forms and large bifacially chipped forms, continued to be widespread as indicated by the existence of the later(?) Kayuk and Nimiuktuk sites as well as assemblages similar to that found at the Gallagher Flint Station, located north of the Brooks Range. Data are limited for central Alaska, but the Healy Lake and Lake Minchumina (Holmes 1974) and other sites such as Girls Hill (Gall, personal communication) indicate that the late Denali Tradition technology was also widespread (see Bacon 1977).

The Late Taiga period terminated coincident with a surge of influence to Alaska from the region of the Bering Sea. Western Thule, with its emphasis on whaling and sealing, appears as suddenly on the Alaska mainland as did Arctic Small Tool earlier. The appearance of Western Thule, at roughly A.D. 500, is remarkably near in time to the Itkillik "intrusion" in the Onion Portage sequence (Anderson 1970) and also to the finale of the Denali Tradition, which after a brief

	CULTURAL CHRONOLOGY	PERIOD		ASSOCIATED TECHNOLOGY
	Recent	Recent	Expansion of Taiga Forests	
AD 1850	Athapaskan	Athapaskan		Copper implements, stemmed stone projectile points, flaked end scrapers, boulder chip tools
AD 1000				
AD 0	Northern Archaic	Late Taiga		Large bifacially chipped forms, microliths, large lanceolates
4000 BC		Early Taiga (shrub tundra dominates)		Side-notched projectile points, stone end scrapers, elongated stone bifaces, boulder chip scrapers, unifacially chipped forms, notched pebbles, stone axes, hammerstones, choppers
6000 BC	American Paleoarctic	Early Tundra (grassland tundra dominates)		Stone cores and microblades, burins, bifacial stone knives, stone end scrapers
12000 BC	Early Sites?			

FIGURE 9

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Cultural Chronology

Gilbert/Commonwealth

hiatus was replaced by a technology similar to that of the early Alaskan Athapaskans; that technology was characterized by various artifacts including: various copper implements, contracting stemmed projectile points in stone, bone and copper, various stone scrapers including flaked endscrapers, boulder spall scrapers and tabular bifaces, hammerstones, whetstones, and a bone technology characterized by a predominance of unilaterally barbed points. Occurring as these events did, near in time to both the Viking expansion in the North Atlantic and the Polynesian expansion throughout the Pacific, they suggest the possibility of global climatic change at that time.

The earliest evidence of Athapaskan occupation of interior Alaska dates several centuries ago to just prior to A.D. 500. The relationship between these early Athapaskans and the people known to have occupied central Alaska at an even earlier time is still poorly understood (Cook 1975). The data are inconclusive as to whether Athapaskan culture originated in central Alaska (Cook 1968) or elsewhere -- perhaps to the east and south (Bacon 1977). Whatever the case, by A.D. 500 Athapaskan people occupied interior Alaska and utilized a subsistence strategy similar to that hypothesized for the earlier Taiga periods.

STUDY AREA CONTEXT

Few archeological sites are presently known from the study area, and fewer still are dated or contain culturally diagnostic artifacts. Of the major periods outlined in the regional archeology, only aspects of each can be identified in the study area. For example, both side-notched projectile points and core and blade tools have been recovered from the study area; however, these remain undated. No archeological sites have been discovered which contain complete or nearly complete tool assemblages. While several Athapaskan sites are known in the study area, none have been systematically excavated.

An inventory of archeological sites known and in the vicinity of the survey area yields a total of 28 sites. Twelve of these are little more than small lithic flake scatters. Only four of the sites located near the survey area have been excavated: the Teklanika West site (HEA-001), the Dry Creek Archeological site (HEA-005), the Carlo Creek site (HEA-031), and the Nenana Gorge site (HEA-062). These sites vary in age, and represent prehistoric occupation at circa 11,000 B.P. (HEA-005), 8,000 B.P. (HEA-001 and HEA-031), and 350 B.P. (HEA-062).

The American Paleoarctic Tradition is represented at Level 2 at Dry Creek and at the Teklanika West site (West 1981). The assemblage at Carlo Creek is characterized by crudely prepared bifaces, which might represent tool blanks (Bowers 1981). In any event, the proper cultural historical assignment of the Carlo Creek site is problematical. The Nenana Gorge site contained crude pottery similar in type to that found elsewhere in interior Alaska in a late prehistoric context (Plaskett 1977). Several of the surface sites and Level 4 at Dry Creek have yielded side-notched projectile point forms, associated elsewhere with the Northern Archaic Tradition. Also, several of the surface lithic scatters have included core and blade material. Obviously, this is scanty evidence upon which to build a cultural historical framework. Perhaps the most significant finding to date is that none of the finds appear to contradict the cultural historical frameworks which archeologists have formulated for adjacent areas.

It appears that major changes occurred in the study area geomorphology at the close of the last Pleistocene ice age (Dumond 1982; Stanley 1980). Landforms changed and, as they did, so must have area vegetation. With vegetation change, related changes would have occurred in both the survival and distribution of mammals and fishes, which were likely the most important food sources for early man.

During the last great ice advances of the late Wisconsin, the study area may have resembled the contemporaneous Yukon River drainage. Ice-choked mountain passes looked down over steppe (grassland) and shrub tundra dominated by large mammals such as bison, mammoth, mastodon, elk and caribou. High runoff from melting glaciers fed braided and silt-laden rivers and streams. Dust clouded the air above floodplains and settled to nourish lush grasses.

Rivers in the study area were probably as important to late Pleistocene man as they are to people today. Lush grasslands near rivers would have provided excellent hunting grounds for earlier big-game hunters. These same grasslands would no doubt have attracted many animals in winter when winds would have kept the floodplain areas relatively clear of snow. Frozen river transportation probably always has been a major factor in winter settlement patterns, but perhaps more so in earlier times when winter precipitation may have been higher than today (Hamilton, oral communication, 1982). Increased snow depths away from floodplain areas would have greatly reduced winter travel in those areas. Frozen river surfaces could have provided a natural route for early hunters as they moved between hunting grounds and base camps. Summer settlement patterns in the study area were equally likely to have been influenced by these river systems. Alder, enriched by precipitation, would likely have flourished and made overland travel extremely difficult.

As heavy river siltation diminished along with the glaciers, Pacific salmon species probably spawned farther up the major rivers draining southward from the study area. At the same time, Pleistocene megafauna probably persisted longest in the periglacial environment of the higher elevations of the more northerly portion of the study area. Both food sources, fish to the south and large mammals to the north, would have been concentrated near the rivers. In the mountains, the river valleys also represent natural funnels through which terrestrial game passes in greatest numbers. As Pleistocene megafauna diminished in number, early man probably focused more attention on alternative food resources such as fish and smaller mammals, the latter of which now abound throughout the study area.

Little more is known about the prehistoric inhabitants of the study area. It is assumed that the people who lived there must have inherited the hunting tradition from ice-age big game hunters. No doubt the focus of life was on the hunting of the larger mammals, but considerable effort must also have gone toward the harvesting of smaller furry mammals, fishes, and various seasonally available avifauna. Although there are still large gaps in our understanding, the best understood part of the prehistory of the study area is the Protohistoric period. This period has been studied through ethnohistorical research, linguistics, and a limited amount of archeology.

In a recent synthetic work concerning the prehistory of the Upper Cook Inlet region, Reger (1977:16-22) concludes that a prehistoric ethnic territorial use boundary between Athapaskan and Eskimoid peoples existed in the Upper Cook Inlet area. Reger views the existing data as indicating a sequence of interior-oriented (Indian?) occupations of the Upper Cook Inlet region spanning the periods from approximately 4000 B.C. to 1 B.C. and from approximately A.D. 1500 to the present. The period from the beginning of the Christian era to about A.D. 1500 is a period marked by the appearance of maritime Eskimo occupations in the Upper Cook Inlet area.

Linguistic evidence (Bacon, Kari and Cole 1982; Kari n.d.; Krauss 1980) indicates that the study area was most recently occupied by Athapaskan speaking groups. In general, the lower portion of the study area was occupied by Tanaina (Dena'ina), and the upper portion of the study area was occupied by the Ahtna Indians. The origins for both groups are unclear, but it appears that the Ahtna may have been in their area for a considerable time (Workman 1977), while the Tanaina may be fairly recent arrivals to the Upper Cook Inlet area (Osgood 1966; Reger 1981).

Both the Tanaina and the Ahtna appear, on the basis of ethnohistorical data, to have been organized in groups or bands. These bands, each composed of various task groups, represented portions of several larger regional bands. Regional bands were recognized on the basis of similar language dialect, common territory and marriage bonds. While regional bands occupied quite large areas, their populations were apparently small (see Osgood 1966:19-20). Settlements for both the Tanaina and the Ahtna tended to be small, seldom more than a few houses.

The first record of European contact is from the voyage of Captain James Cook, who sailed into the inlet bearing his name. Captain Cook noted in 1778 that the Chugach and the Cook Inlet natives were already in possession of blue glass beads and iron (DeLaguna 1972:Part I:108-207). By 1783, a Russian trader with the Potap Zaikov expedition had established trade links with the Ahtna Indians by trading through the coastal Chugach Eskimos (DeLaguna 1972).

Trading stations established along the coast later became bases from which military and geological survey exploration parties penetrated interior Alaska during the late nineteenth century (e.g., Eldridge 1900; Learnard 1900). These exploration parties, who had been preceded by Malakoff in 1834, continued to map the Susitna River drainage (State of Alaska 1975). By the end of the nineteenth century, gold prospectors were searching over much of the upper Susitna region.

In 1914, Congress authorized construction of the Alaska Railroad. A route was selected which paralleled the Susitna River, and the railroad was completed in 1923 (Fitch 1967). Nearly 50 years later a roadway was also completed and named the George Parks Highway. Both the railroad and the highway link Alaska's two largest communities, Anchorage and Fairbanks. Residents of these communities are now beginning to settle the areas along the two transportation links. Recreational opportunities as well as the potential for hydroelectric power along the upper reaches of the Susitna River will no doubt continue to draw people to the area.

Previously recorded prehistoric, ethnohistoric and historic sites in the study area vicinity are listed in Appendix A.

OVERVIEW OF THE ETHNOHISTORIC PERIOD IN SOUTH-CENTRAL ALASKA

Because interest here is in the survey area defined by the direct impact area of the proposed Anchorage-Fairbanks Transmission Intertie, discussion of the ethnohistoric period will concentrate on what is known of noncoastal area settlement by the Tanaina and Ahtna. These two ethnic groups are identified linguistically and through oral histories as ancestral to the modern Athapaskan groups who inhabit the region today. The summary presented below is abstracted from several sources (e.g., Bacon, Kari and Cole 1982; DeLaguna and McClellan 1981; Fall 1981; Reger 1977, 1982; Townsend 1981, and Workman 1977). Discussion of Ahtna is restricted to the Western Ahtna, who inhabited the Lake Louise - Susitna River drainage, and the Upper Inlet Dena'ina (Tanaina), who inhabited a large area which included most of the Susitna River drainage (Figure 10). The purpose of the following discussion is to reveal aspects of ethnohistoric period settlement patterns which have the potential of being retrieved archeologically.

Tanaina (Dena'ina) Settlement Patterns

Recent research (e.g., Bacon, Kari and Cole 1982; Bacon et al. 1982; Reger 1982) has added to a growing body of data which suggest that Tanaina settlement patterns are much more complex than previously thought (Osgood 1936). It is becoming increasingly clear that the Tanaina were composed of several regional bands, or in the terminology of Townsend (1981) "societies." These bands were largely defined on the basis of traditional subsistence territories.

Much important information on past aboriginal land use for much of south-central Alaska has been gained through analysis of aboriginal place names. Unfortunately, most of this information has been lost for the area of study due to the early demise of the natives of the Talkeetna River, the Mountain People, and the depopulation of the Susitna Basin (Kari 1977; Pete 1975, 1980). Much of what can be said is summarized from what is known about inland Tanaina adaptations elsewhere (e.g., Yentna River drainage) and on the basis of the few known Tanaina sites along the Susitna River drainage.

The socio-territorial relationships of historic and prehistoric Tanaina can be broken down into three segments. The local band was a community body resident in one locale, and structured around family ties. The regional band was oriented toward an extensive exploitative territory with regard to its biotic resources. The sites of these resources and routes of access to the sites determine the stations and movements of various groupings. The task groups were short-term groupings of people specifically created for exploitative activities. Task groups often formed were a male trapping pair or trio, a trapping party of a few families, a moose hunting party or camp, a fish camp, a berry gathering party, or a trading party. It is apparent that the settlement patterns were determined by and changed according to the ecological potential of the locale, combined with the exploitative ability of the Tanaina people.

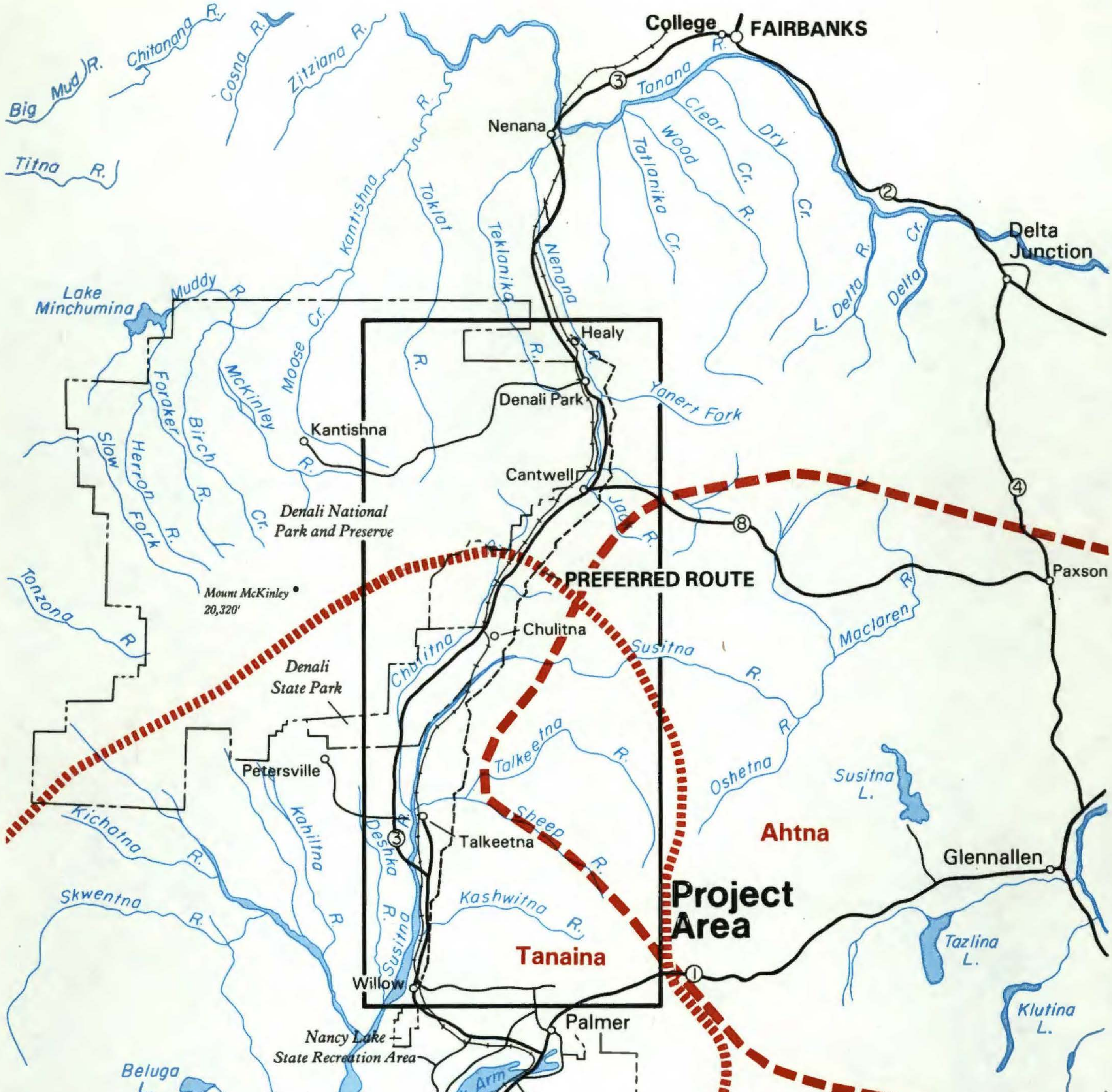


FIGURE 10

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Source: CAI 1982

0 30 60 Miles

0 30 60 Kilometers

North

Dena'ina (Tanaina) and Ahtna Territories

Gilbert/Commonwealth

Western Ahtna Settment Patterns

The study area falls adjacent to the extreme western limit of Ahtna territory (DeLaguna and McClellan 1981:642), near the area utilized extensively by the Tanaina. It is estimated that the total population of Western Ahtna did not exceed 150 persons at the turn of the century (DeLaguna and McClellan 1981: Table 1).

Ahtna settlements were either winter villages, each under the "chief," or hunting and fishing camps. Chiefs were recognized on the basis of individual ability, and were often the head of extended family units. Chiefs tended to head local bands, and these bands, like Tanaina bands, tended to be geographically focused. Generally, four regional bands have been identified for the Ahtna: Lower, Middle, Western, and Upper Ahtna. Every major Ahtna community or group of settlements had its own area for hunting, fishing, and berry picking.

THE POTENTIAL FOR TANAINA AND AHTNA ARCHEOLOGY

In a geographic sense, both the Tanaina and the Ahtna were highly mobile peoples. Thus, little elaborate architecture can be expected to be found in the territory of either group. The most substantial architecture would occur in winter settlements. For both groups, winter settlements consisted of from one to a few big winter houses. For the Ahtna, and many of the Tanaina, these housed as many as six nuclear families. However, the Mountain People, the Tanaina who inhabited the Talkeetna River region, are said to have not used this type of house. Rather, more portable winter dwellings are said to have been used.

These were probably similar to the so-called "moss houses" used by other Tanaina and also the Ahtna. These houses, in contrast to the long-house style log structures (nichiɫ), were constructed of horizontally laid split logs chinked with moss; and they were covered with shed-type roofs of turf and moss.

A variety of smaller shelters were constructed for more temporary needs. These include brush-walled lean-tos, skin covered brush huts, and small birch bark houses. Every living site could be expected to have a sweathouse, pit caches, a variety of platform caches, as well as small enclosures for menstruants and parturients set at a distance.

It is obvious that even the most substantial of the various shelter forms used by the Tanaina and the Ahtna would weather quickly in the moist region of south-central Alaska. Nearly all of the organics could be expected to disappear in a matter of a few centuries. Archeologically, this has been verified. Feature remnants often identified as the remains of former Tanaina and Ahtna settlements include: anomalous areas of vegetation such as grassy areas, pit depressions, and areas where trees have been cut or stripped for bark. These clues to former habitation are nearly impossible to find in areas which have overgrown in alder subsequent to abandonment.

The other major problem in Tanaina and Ahtna archeology reflects the low absolute numbers of aboriginal people. With as few as several dozen people exploiting several hundred square miles, sites are few and far between. Archeological survey strategies must concentrate on areas of likely settlement density for best results. Unfortunately, these areas seem to coincide with areas of geological instability.

Areas commonly selected for settlement, at least based on the observable ethnographic present, were often river and stream deltas, sand bars, stream valley bottoms and other areas which were close to water resources yet devoid of the common alder thickets. Site selection in these areas has not enhanced opportunities for site survival.

HISTORICAL OVERVIEW OF SOUTH-CENTRAL ALASKA

The most important economic activities in south-central Alaska, from the turn of the century to the present, have included mining, trapping, hunting, and trading. The region was never densely populated until recent times, and the major communities have always been located along the railbelt, especially east of the Susitna River. Away from the railroad the most heavily populated areas were the Cache Creek Mining District, about 30 miles west of Talkeetna, and the Fairview Mining District 20 miles farther west.

The Alaska Road Commission built a road to the Cache Creek District in the 1920s to supply the mining camps. This road is still used today. There were other important trails in the region, but many of them have long been forgotten. The trail from Nancy on the Alaska Railroad to Tyonek on Cook Inlet, via Susitna Station, was a major trail in south-central Alaska, but the most famous route through the region was the Iditarod Trail, which ran from Cook Inlet across the Alaska Range through Rainy Pass to the Iditarod gold fields and on to Nome. These trails were regularly used until Alaskans began to abandon their dog teams in favor of airplanes in the 1930s, but the rivers have remained important as highways. As in most parts of Alaska, prospectors and trappers lived throughout the region at isolated spots along the river banks, and the local distribution centers, such as Susitna Station, Talkeetna, and McDougall, were all located on the rivers and supplied by boat during the summer.

These are some of the major activities which will be examined here. From the material gathered here, the major themes in the history of the region can be identified, and the investigations establish a basis for evaluating historical sites in the field.

The Early History of the Study Area

The Russian presence in the study area was limited. By the early 1800s the Russians had long been active in the Cook Inlet region, particularly on the Kenai Peninsula. But it was not until 1834 that a Russian explorer named Malakoff first ascended the Susitna River. This explorer may have made another trip up the Susitna nine years later in 1843, but little is known of his journeys. According to Alfred H. Brooks, one of Alaska's leading geologists in the early years of this century, and the man for whom the Brooks Range is named, the Russians never had a great interest in the Susitna River drainage. "The fur trade of the Susitna River," Brooks wrote, "was never exploited by the Russians except insofar as it reached their posts on Cook Inlet" (Brooks 1973:235). Despite that fact, the Russians did have some experience in the area. Brooks explained that "By 1845, the Russians had a better knowledge of the headwater region of the Susitna than could have been obtained from the crude maps drawn by natives. A Russian map of that year indicated a rough survey was made of the entire Susitna together with the Talkeetna River" (Brooks 1973:235).

Even after the purchase of Alaska, the region was still not widely explored. The first census of Alaska compiled by Ivan Petroff in 1881 noted, "What the country north of Cook's Inlet is like no civilized man can tell, as in all the years of occupation of the coast by the Caucasian race it has remained a sealed book" (Petroff 1884:86). Isolated fur trappers and prospectors were the first to try to open the "sealed book." As a history of fur trading in Cook Inlet by Robert DeArmond, one of Alaska's senior historians, explains, "The Susitna River and its tributaries, draining a vast stretch of country, formed (a) natural highway and carried ....trappers and hunters toward Tyonek where a station was built at an early date, and later to Susitna Station on the Susitna River" (DeArmond 1969:44). As early as 1875, it was reported that the Alaska Commercial Company had a trading post at "Shushitna (sic), on river of same name" (Cambell 1875:135). Tyonek Station was founded about the same time, but the trading post known as Susitna Station, where the native village of Susitna is located, was founded in the mid-1890s by the Alaska Commercial Company.

Susitna Station was the northernmost Alaska Commercial Company trading post in the Cook Inlet region, and was supplied by small boats from Tyonek. "Although the Susitna Station was established about 1895, and was built strictly for the fur business," DeArmond writes, "there being no other activity of consequence in the area at that time, it reached its greatest importance some years later as an outfitting point and transportation center for gold miners" (DeArmond 1969:44).

One of the first recorded instances of a gold miner in the area was probably in the 1870s. A long-time Alaska prospector named George Holt wrote in September, 1876, "I will go up the Suchitna (sic) River in the spring, and should I not succeed, then I am done prospecting for gold in Alaska" (DeArmond 1969a:16). It is not known how successful his trip was, but like many another prospector, George Holt could never give up the chase. In the late 1880s he was the Alaska Commercial Company's trader at the village of Knik, one of the major distribution points for the Upper Cook Inlet, when he was shot and killed by a native after an argument over some tobacco (Reeder 1964:10).

Other prospectors followed in the wake of Holt. According to the 1890 census, a prospecting party had tried to head up the Susitna Valley, but returned very discouraged after three weeks in the wilderness, saying that the area "might contain the most beautiful scenery in the world or the richest mines, but that clouds of mosquitoes obscured their vision and occupied their attention to the exclusion of everything else" (Porter 1893:70).

The first major gold strike in south-central Alaska was made in 1895 on the Kenai Peninsula near Turnagain Arm. It has been estimated that as many as 3,000 prospectors landed at Tyonek a year later in 1896, either headed for the

Turnagain gold fields, or searching for new strikes up the Susitna River. One of the men who joined in the 1896 gold rush to Cook Inlet was William Dickey of Seattle. A former star baseball player with the Seattle Reds, he made one of the first well-documented trips up the Susitna River, and at the same time named the mountain which was later discovered to be the highest in North America, Mount McKinley.

The Naming of Mount McKinley

Dickey and his partner, Allen Monks, arrived at Tyonek in the first week of May, 1896. "Our object in prospecting the Susitna," he wrote, "was the hope of finding placer mines on its upper waters" (Dickey 1897). He estimated that more than 100 parties attempted to prospect the Susitna Valley, but that only five "attained any great distance up the river." Many did not even make it to the Susitna Station. Rowing upriver was not an easy task, and the mosquitoes were a constant bother. The same problems of weather, climate, and distance plagued prospectors always. One would-be sourdough from Boston gave up after he and his partner had been on the river one week and had not yet reached Susitna Station. He said he would not prospect a country "where he was obliged to tie up his head in a gunny sack every night in order to escape the mosquitoes" (Dickey 1897). Dickey and Monks were among the lucky ones who made it to the Susitna Station, where they built small boats to take them up the river.

"A short distance above the Station a great branch comes in from the west," Dickey wrote, referring to the Yentna River. "The Indians say that this branch runs around the head of Cook's Inlet and rises in a high range of mountains which we had seen from Tyonik" (Dickey 1897). In January 1897, Dickey published a long article in the New York Sun describing his expedition up the Susitna Valley and the mountain that he said the Cook Inlet Indians called "Bulshoe," meaning very large. "We named our great peak Mount McKinley," Dickey explained, "after William McKinley of Ohio, who had been nominated for the Presidency, as that fact was the first news we received on our way out of that wonderful wilderness" (Dickey 1897).

Dickey returned to the Susitna Valley one year later in 1897 and made another exploration of the upper Susitna region. Some 40 years later, an employee of the Alaska Railroad discovered that Dickey and his three companions in 1897 had carved their names in a rock on Portage Creek.

The Search for an All-American Route to the Yukon Gold Fields

One of the most important goals of the U. S. government in Alaska at the turn of the century was to find an "All-American" route to the gold fields in the Yukon Valley, which did not have to pass through Canadian territory like the routes over Chilkoot and White Passes, or was not as long as the Yukon River route. The search for the All-American route across the Alaska Range was a major reason for expeditions like Spurr's reconnaissance in 1898, and several others. A geological survey party led by George Eldridge ascended the Susitna River in 1898 and crossed into the drainage of the Nenana River. In 1898 and 1899, under the general command of Captain E. F. Glenn, numerous military exploring parties examined the Susitna - Talkeetna region, including expeditions led by Lieutenant Joseph S.

Herron, Sergeant William Yanert, Lieutenant H. C. Learnard, and Private George Vanschoonoven. As was soon recognized by railroad builders and highway engineers, the Susitna - Upper Chulitna - Nenana route through Broad Pass was an ideal route from tidewater to the interior of Alaska. These early explorations around the turn of the century provided much information about the Susitna Basin, which would become one of the most important transportation corridors in Alaskan history.

The Discovery of Gold on Valdez Creek

The year after Brooks mapped Rainy Pass for the first time, another explorer with a more tarnished reputation landed in Alaska to explore the area around Mount McKinley. Dr. Frederick Cook is recognized today by most historians as one of the great liars in the history of exploration. He claimed in 1906 that he was the first man to climb Mount McKinley, and two years later he told the world that he was the first man to reach the North Pole. Despite a few Cook believers, most authorities today are certain that Cook fabricated both his "first ascent" of Mount McKinley and his "conquest" of the North Pole. However, despite the exaggerations in parts of his travel narratives, the writings of Cook and other members of his Mount McKinley expeditions provide valuable information about the Susitna - Yentna area, which was a staging ground for some of the first attempts at the mountain.

Cook made his first effort to climb Mount McKinley in 1903, and even he had to admit that this expedition was a failure. He landed at Tyonek in June 1903 with a party of five men and fourteen horses. They followed the trail taken by Brooks' party in 1902 from the coast, but were unsuccessful in two attempts at the mountain. One of the men with Cook in 1903 was an experienced woodsman of the Northwest named Robert Dunn, who left an interesting description of Susitna Station in a famous book he wrote after the trip. The book was entitled The Shameless Diary of an Explorer. At the station, Dunn wrote:

> Nearly all the cabins were occupied. Prospectors are coming into this valley for the first time. No strike has been made, no, but it's the last valley in Alaska still untouched. They have spent the late summer boating up their year's supplies from the head of the Inlet. Some have dogs, some hope to get them from somewhere before winter. They are the bedrock Alaskan article, the men to be first on the claims if an Eldorado is struck. They start their stampede the winter before, not in the spring, which is the tenderfoot way. Each had just waked from failure -- in a rush camp, or looking for daily wages in Valdez. Again they take up the old, relentless, dream-trail to riches through the desolate and uncertain North. Human beings, at least, men after my heart! In Arizona, Oregon, South Africa, the Phillippines, each has more than once risked his poor all, and lost, always lost. But now the Eldorado is at hand, in this Sushitna valley, here is the place (Dunn 1907:295).

Dunn's premonition was right. In that same year the first strikes were made on Valdez Creek, a left bank tributary of the upper Susitna River, not far from the source of the river. According to a tabulation made in 1932, the Valdez Creek district was the 30th all-time leading gold placer district in Alaska, with a total production of $475,700 (Smith 1933:96). Because of the difficulty in ascending the Susitna past Devil Canyon, the area was usually supplied directly from Valdez by routes through the Copper River Basin rather than from posts in the Susitna drainage. For that reason the Valdez Creek strike had little effect on the history of the study area, though freight was occasionally carried up the Susitna to Valdez Creek after a trading post was established briefly at Talkeetna in about 1909 (Cole 1979:11).

According to a newspaper report from Cordova in 1909, the Susitna Station trading post of the Alaska Commercial Company would have in stock that year "all the supplies necessary to supply the demands of the prospectors and operators during the winter." But, in addition to their headquarters at Susitna Station, the company also started a post near the mouth of the Talkeetna River and the present-day community of Talkeetna, to supply the upper Susitna miners and those on Valdez Creek. "Another supply station has been established 75 miles up the river," the Cordova Daily Alaskan reported, "where several hundred tons will be stored for the winter, thus assuring ample provisions to supply all demands during the closed season" (Cordova Daily Alaskan, 8/24/09:4).

The trading post near the mouth of the Talkeetna River was probably abandoned in 1911 because it was not found practical to carry on winter freighting on the Susitna River. Talkeetna would have to wait until the construction of the Alaska Railroad before it would become an established trading and commercial center (Moffit 1912:21; Capps 1913:20, 1919:191).

Talkeetna - Cache Creek Road

A 42 mile long sled road and summer trail from Talkeetna to the Cache Creek district was first built by the Alaska Road Commission (ARC) in 1918. The Talkeetna - Cache Creek Road was improved from year to year. By 1922, the route included 9 miles of wagon road and about 31 miles of sled road. The wagon road was graded that year for nine miles, and one mile of corduroy was laid. In addition, a 45 foot long bridge was built over Date Creek. Several other bridges were also constructed over smaller streams. "This road was practically completed to Moose Creek, Mile 10," the Road Commission reported. "It is one of the most important new roads under construction by this Commission and it is the intention to continue work this season" (Report of the ARC 1922:42).

One reason why this road was seen as so important was that the construction of the road from Talkeetna enabled the Road Commission to abandon several of the older trails in the region and provide cheaper transportation to a promising mining region. Because of the "change in the general transportation situation following the construction of the Government railroad," the Commission officially abandoned three trails in the region in 1922, including the 35 mile long trail from Susitna to McDougall along the Yentna River, the 30 mile long trail from McDougall to Cache Creek (including the Kahiltna River Bridge), and the 15 mile long trail from Lakeview Roadhouse on the Iditarod Trail to McDougall (Report of the ARC 1922:38). All of these routes were abandoned in favor of the better route from Talkeetna.

The miners of the Cache Creek region had long pushed for better roads, and as early as March 1917, they petitioned the Road Commission to build a road from the mouth of Sunshine Creek near the Government Railroad to the Cache Creek district. The widely publicized death of a man named Dick Feltham, who was lost in the wilderness between McDougall and Cache Creek in the summer of 1917, illustrated how poor the existing trails were.

Richard Feltham was a merchant in the town of McDougall, and he began to run a pack train from McDougall to Cache Creek that summer to supply the mining camp. On June 19, 1917, he left McDougall on the "soft, difficult trail" that hardly deserved being called a wagon road, heading north to the Kahiltna River Bridge (Mertie 1919:241). The Kahiltna River Bridge was the site of a camp which consisted of at least several buildings owned by the Cache Creek Mining Company. It was known as "Camp Two" and was located at the Kahiltna River Bridge crossing, a few miles above the mouth of Bear Creek. "Camp One" was located halfway between Camp Two and McDougall, and was on the left bank of Lake Creek, near the mouth of Yenlo Creek. Feltham left Camp Two at the Kahiltna River Bridge on June 21. Six days later he had not yet arrived at Cache Creek, so two parties went out in search of him. At an old camp on Hungryman Creek, apparently on the ridge south of Peters Hills, they found his trail. As Charles R. Harris, of the Cache Creek Dredging Company, later wrote to the Anchorage Daily Times:

> In the neighborhood of the old Hungryman camp evidences of the struggles of the man to find the way were pitiful to see. Blazes on the trees running through the swamps in different directions showed plainly the vain efforts made to find a most obscure trail that would lead to Cache Creek. Finally by the faithfulness of his pack horse, that was found standing on the trail with the saddle turned under him, attention was attracted to the man rolled in his blankets about fifty feet off the trail and near Deep Creek. Stimulants aroused in him a recognition of his rescuers, J. B. McAllister and Scotty McLain, but the effect was temporary and he died within a few hours (Harris 1917).

Harris and many other miners in the area, like M. A. Ellis on Falls Creek, the Harpers Brothers on Nugget Creek, N. Bahrenburg and Company on Dollar Creek, Henry Peters on Bird Creek, and Hershel Parker on the Kahiltna River, to name just a few, were all anxious to have a better road to the Yentna district. As Harris put it, "We don't ask for boulevards and parks, but we do want help in the construction of a plain everyday, dirt road that will guarantee to get us home in safety when we want to go home, and won't leave us somewhere to perish as it did Dick Feltham" (Harris 1917).

The miners in the Yentna district got their wish a year later in 1918, when the Road Commission began building the Talkeetna - Cache Creek Road. Though the new road was no boulevard, it was far better than the abandoned trail from McDougall. The Road Commission regularly compiled a traffic census, which counted the number of people who used ARC routes throughout Alaska. According to the traffic census, as early as 1921 two automobiles traveled over a portion of the Talkeetna - Cache Creek Road. A year later in 1922 the station at Moose Creek, 10 miles east of Talkeetna, counted 12 motor vehicles on the road (Report of the ARC 1923:118). The traffic count along the Talkeetna - Cache Creek Road from 1921 to 1931, as shown through available statistics, was as follows:

TABLE 4

TRAFFIC COUNT: TALKEETNA - CACHE CREEK ROAD, 1921 TO 1931

Year	No. of Persons	Autos	Wagons	Sleds	Pack Horses	Tonnage
1921	1866	2	7	1021	171	778
1922	1221	12	69	425	141	356
1923	1459	3	137	596	302	476
1924 (Jan-Oct)	801	6	75	222	152	221
1925 (Jan-May)	409	-	-	193	-	201
1926 (May-Sept)	526	-	186	-	-	82
1929	369	-	11	224	58	46
1930	646	-	23	285	251	99
1931	1053	121	62	440	328	320

SOURCE: Annual Reports of ARC 1922-1932

By the end of the 1920s, the Alaska Road Commission had extended the portion of the road which was suitable for wagon traffic almost 24 miles to Peters Creek. A number of other trails, including one from the end of the wagon road surface to Cache Creek and a 35 mile long trail from Cache Creek to Mills Creek, were also blazed. The Cache Creek - Mills Creek Trail was examined in 1928 by Mr. C. Edmunds, a District Superintendent of the Road Commission. The trail was suitable for foot and pack trail travel" (Edmunds 1928). In the summer of 1926, the traffic census taker at Mills Creek had reported that 26 people walked over the trail between May and August (Report of the ARC 1927:27). On this trail there were four tram cable crossings for foot passengers. The cable tramways were located at Granite Creek "two hundred yards above the end of the glacier, where the stream is in one channel", on the Kahiltna River just below the glacier, on Lake Creek not far from the Chelatna Lake, and on Sunflower Creek. The trams were boatswain's chairs hung on three-quarter inch cables to enable hikers to cross dangerous streams in the summer. The cable tramways were strung up from large trees if possible, or from large "A" frames built on each bank. The tram at the Kahiltna River was 250 feet long, but the biggest of the four cable tramways was 300 feet long (Anderson 1925). The Cache Creek Mills Creek Trail connected the Fairview mining district around Fairview Mountain with the Cache Creek Mines and the road to Talkeetna.

The Alaska Railroad

In 1914, Congress authorized construction of the Alaska Railroad. A route was selected which paralleled the Susitna River, and the railroad was completed in 1923 (Fitch 1967). Historically, the Alaska Railroad has followed the boom and bust cycles characteristic of the rest of Alaska. The free spirit days of the late 1920s were soon followed by the depression of the 1930s. Consequently, the number of passengers carried by the railroad also dropped off dramatically in the 1930s. Another factor, which resulted in fewer rail passengers, was the advent of air travel in Alaska. It was not until the war years of the 1940s, when McKinley National Park (now Denali National Park and Preserve) was designated as a rest and recreation area for soldiers, that passenger traffic along the Alaska Railroad showed improvement.

Aside from the accommodations at McKinley National Park, the most famous place along the railroad was a place called Curry, located at Mile 248. In the 1920s, Curry was considered to have offered the most luxurious surroundings of any place in Alaska. Curry was established as a halfway point stopover on the trip to McKinley Park. This stopover allowed travelers to travel in daylight for the entire trip from the Pacific Gulf Coast to McKinley Park.

> This interesting place is situated at Mile 248 on The Alaska Railroad; it is the "half-way point" between the Coast and Interior Alaska where visitors for a time are part of a great glorious wilderness. Those travelers who arrange a stopover at Curry during their Alaskan trip, are fortunate indeed, for it is situated in a delightfully attractive region, and many forms of outdoor recreation are provided.

The Curry Hotel was described as "a genuine Palace in the Wilderness" (Alaska Railroad Travelogue, n.d.). The Hotel boasted "modern, inviting and comfortable" accommodations and a "cuisine of high order." Nearby recreational opportunities included: hiking, tennis, mountain climbing, kodaking, and fishing. Also available was a 5-mile hike or horseback trip over the "Meadow-Lake Trail" to a place called "Camp Regalvista." Located atop what is now known as Curry Ridge, Camp Regalvista provided a spectacular view of Mt. McKinley, some 25 miles distant. At one time Camp Regalvista also supported a 4-hole golf course. "Here, a mile in the air and within the very shadow of America's matchless mountain, the golfer may drive over a course the 'hazards' of which....plague his mind and test his skill."

By World War II much of the former glory of Curry and Camp Regalvista had vanished. Gone were the tennis courts and trails to fishing spots. Totally abandoned was Camp Regalvista, the only remnant of which was the rope bridge across the Susitna River just behind the Curry Hotel. Yet, even in reduced splendor, the Curry Hotel continued to live up to its reputation as a "Palace in the Wilderness." Several hundred soldiers would stay overnight each day at the Curry Hotel, which still provided luxurious rooms and fine meals.

Today almost nothing remains of Curry. The hotel was deactivated in the late 1940s and burned in the early 1950s. Several other structures, including residences and a powerhouse, were sold as surplus in the 1950s. It is reported that much of this material was later reassembled as part of various structures in Talkeetna. The riverbank at Curry is littered with the remains of large piston generators and rusted steam boiler parts. Local evidence suggests that much of the old community site has been leveled and dozed. However, substantial concrete foundations still remain, although it is not clear just how much in physical remains have survived.

Although Curry was the most spectacular camp built along the Alaska Railroad route, several other types of structures were also constructed. These included station houses, construction camps, and many bridges; some of which still survive.

PREDICTION OF SITE OCCURRENCE IN THE STUDY AREA

ENVIRONMENT AND SITE OCCURRENCE

Historically, in interior Alaska, archeological site distribution projections have concentrated on the associations between known sites and the microenvironments in which they are found (Aigner and Shinkwin 1979; Bacon and Holmes 1980). These environmentally-oriented analyses, while instructive, are limited in several ways: (1) many of the recorded sites studied early on did not have associated environmental data recorded; (2) paleoenvironmental data are lacking for many areas; (3) data that have been recorded are uneven and consequently difficult to discuss in detail over large areas, and (4) most recorded archeological sites remain undated, so their proper place in time and their associated paleoenvironment cannot be ascertained.

Because the data are limited and uneven, the question of archeological site occurrence in the study area is best studied at a regional level. This allows extrapolation between known points. At a regional perspective the effects of microhabitat become diminished. As focus shifts from the weave of the contemporary micro-landscape to the broad pattern of the region, some compensation is gained. Minor shifts in the biological landscape are averaged out in the regional perspective. At a regional level of significance it is possible to utilize the current biological landscape as a model for the greater part of the Holocene. Man has inhabited portions of the study area for at least the past seven or eight thousand years.

By overlaying ethnographically observed exploitative and settlement patterns on the current landscape, it is possible to project those patterns throughout much of the Holocene. The resultant picture of Holocene exploitative and settlement patterns is termed the "ethnographic Holocene." It is important to remember that the ethnographic Holocene is only an analytical construct and it is primarily a reflection of a poor data base. Projections based on the concept of ethnographic Holocene can be expected to be less than precise. The degree of inaccuracy will largely be a function of the lack of detailed understanding of changes in the biological landscape during the period in which man has occupied the study area.

The modern biological landscape exhibits a remarkable variety and uniformity of potential food resources. Several salmon species inhabit the major rivers and streams which flow to the Pacific. The greatest number of these fishes must pass through those riverine areas closest to the coast. Thus, relatively fewer fish are available in the headwater areas. This factor is offset by a greater availability in the headwater areas of large mammals such as caribou, sheep and moose. Where topographic differences are least pronounced, fish are most abundant and vice versa. The net effect is that all parts of the study area have features which would likely have tended to concentrate the exploitative patterns of hunters/fishers and gatherers. The entire study area is rich enough in resources to have attracted settlement during prehistoric times.

Based on these observations and assumptions it is possible to begin delimiting areas most likely to contain the highest density of archeological sites. Some of these would be:

1. Fishing sites along those rivers flowing to the Pacific. These sites occur ethnographically most commonly nearer the confluences of rivers -- particularly at confluences which join clear and muddy watered rivers.

2. Spawning sites in clear water tributaries to the Susitna River.

3. Areas through which large mammals would be naturally funneled as they moved from wintering to summering grounds. Such areas will include numerous lookout and ambush sites such as small points of topographic prominence.

4. Areas near the shores of lakes and ponds. These areas commonly provided fuel and water for camps. Fishes such as trout and grayling are also common as are small furbearers.

5. Areas near the margins of swampy lowlands. These areas support large numbers of small furbearers as well as seasonally large numbers of migratory waterfowl.

6. Areas near tree line at higher elevations provide necessary wood for fuel and construction of winter houses. They also provide access to nearby alpine tundra areas which sometimes supported caribou.

PREDICTION OF SITE TYPE OCCURRENCE

Currently available data suggest that the study area has been occupied by man for at least 11,000 years. The Historic period represents slightly over one percent of this time. Except for the construction of the Alaska Railroad and the Parks Highway, Historic period interest in the study area has generally been transitory in nature and has not led to elaborate settlements. Thus, it can be said that both historic and prehistoric settlements have tended to be small and short lived. The settlements have tended to exist for the exploitation of some particular resource; when the resource was exhausted at that location, people moved on.

Populations in the study area seem always to have been small and mobile. Yet, even small populations will produce an extensive archeological record given enough time. In this instance there has been ample time, over 11,000 years. The archeological record for the study area can be expected to reflect the full range of human activity. We can expect to find archeological sites associated with food procurement, social interaction and religion. We can expect to find semipermanent village sites and one-night camps.

Much useful information about past land use practices is revealed in a study of Dena'ina (Tanaina) place names. Ethnogeographic analysis, currently being conducted by the Alaska Native Language Center, University of Alaska, has produced an extensive list of names, some of which are reproduced in Appendix B. The locations listed were selected because of their proximity to the survey area. No Ahtna place names are listed because those published lie outside the survey area.

Many of the oldest sites must have already have been destroyed by natural forces such as erosion. Some sites have been destroyed by subsequent human activities such as mining and road construction. Of those sites that remain, some may lie beyond the range of detection provided through current archeological methodology. Faced with a similar problem involving prediction of archeological site distribution within a heavily vegetated study area in south-central Alaska, archeologists Frederick Hadleigh-West and William Workman came to the general conclusion that "the majority of sites which may lie on the right-of-way in the area .... will be discovered only when clearing operations have removed the brush and muskeg cover, creating an exposure of the underlying soil" (Hadleigh-West and Workman 1970:10). There is no doubt that these conditions will have some effect on our ability to test some of the hypotheses presented in the foregoing paragraphs.

SURVEY RESULTS

TRANSMISSION CORRIDOR

1981 Field Season

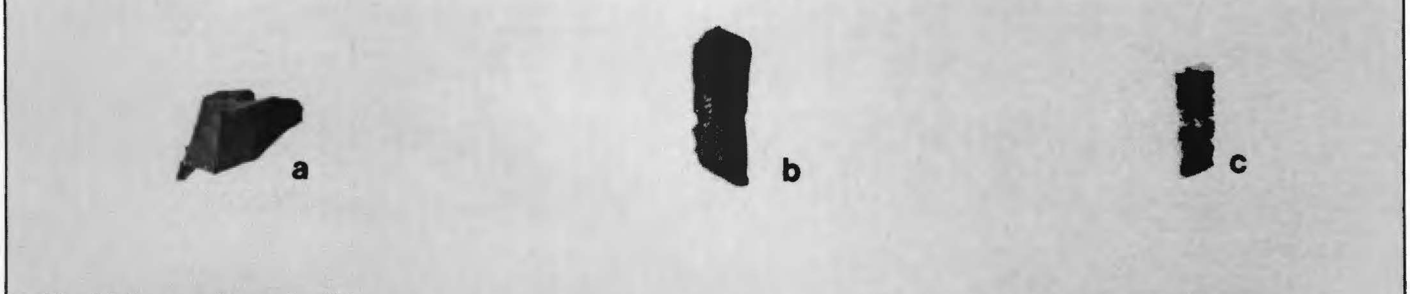
A total of 13 sites were discovered near the proposed right-of-way during the 1981 field season. Eleven of these sites are prehistoric; two are historic in age. Each of the sites appears to be small in spatial extent, but site areas are not known for certain. Phase II testing was not conducted due to the fact that none of these sites is located on the proposed right-of-way, staging areas, or access routes, and hence is not threatened by construction of the proposed Transmission Intertie. A brief summary for each site follows. More detailed information is provided in Appendix C.

Site No. 1
AHRS No. HEA-195
Map: Healy (B-5)
Setting: slightly elevated, irregular moraine feature
Testing: none
Artifacts: one small white chert flake fragment and the basal segment of a beige chert lanceolate biface form were collected (Figure 11)
Recommendations: further site testing

Site No. 2
AHRS No. HEA-196
Map: Healy (B-5)
Setting: low river terrace
Testing: none
Artifacts: one basalt biface fragment was collected (Figure 11); several concentrations of basalt flakes were left on the surface where discovered
Recommendations: further site testing

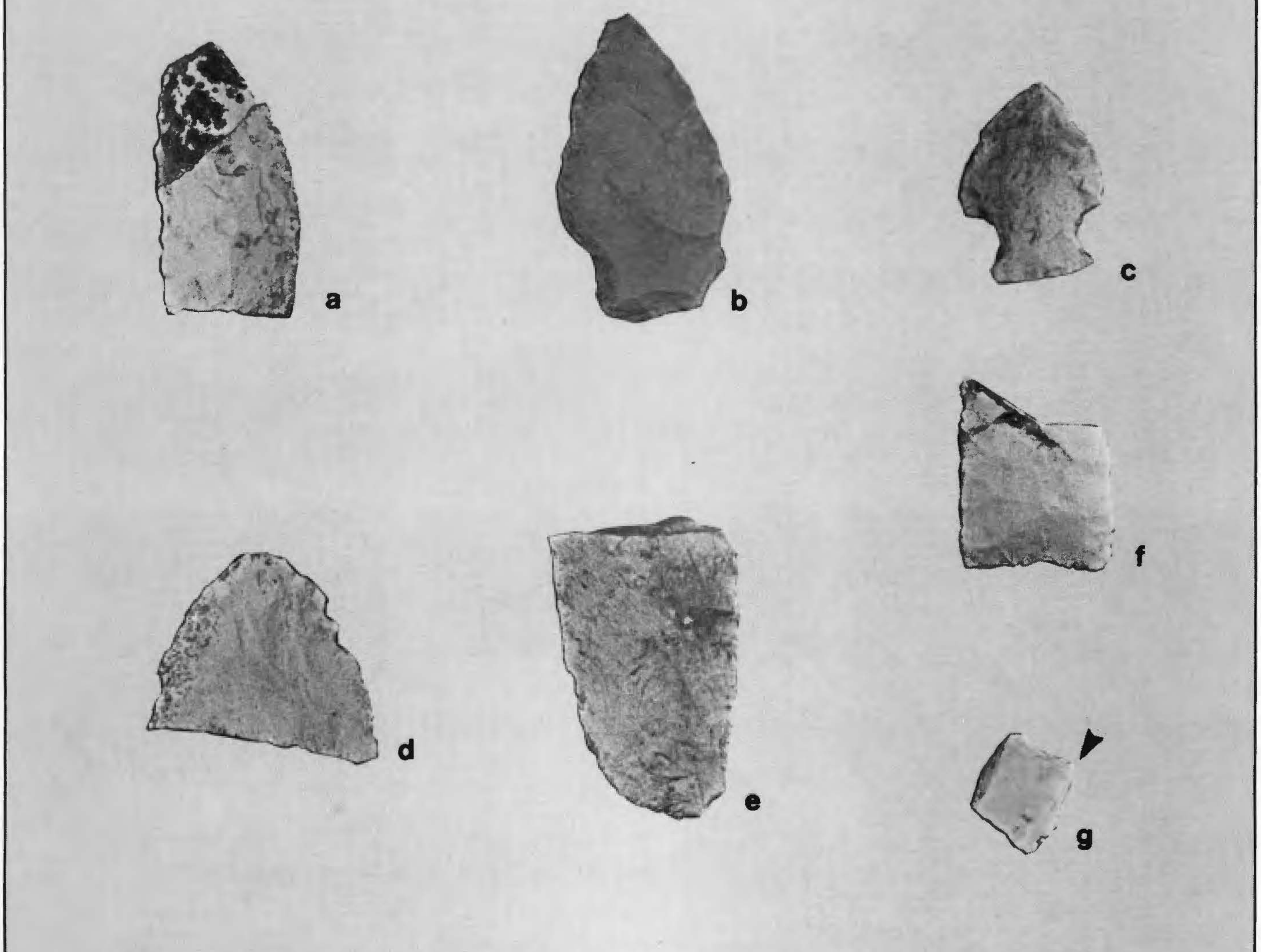
Site No. 3
AHRS No. HEA-197
Map: Healy (D-4)
Setting: edge of bedrock terrace overlooking the confluence of two stream valleys
Testing: none
Artifacts: four chert/rhyolite flake fragments (three fit); none were collected
Recommendations: further site testing

Site No. 4
AHRS No. HEA-198
Map: Healy (C-4)
Setting: morainal knoll at a drainage divide between two stream valleys
Testing: none
Artifacts: numerous lithic surface artifacts noted; 19 rhyolite flakes, one basalt biface (knife?), and one side-notched projectile point (Figures 11 and 12)
Recommendations: further site testing



a Microblade core rejuvenation flake
b-c Microblade segments from sites HEA-201 and 203

11-1



a-f Bifaces from sites HEA-205, 202, 198, 199, 196, and 195
g Flake with burin facet (arrow)

11-2

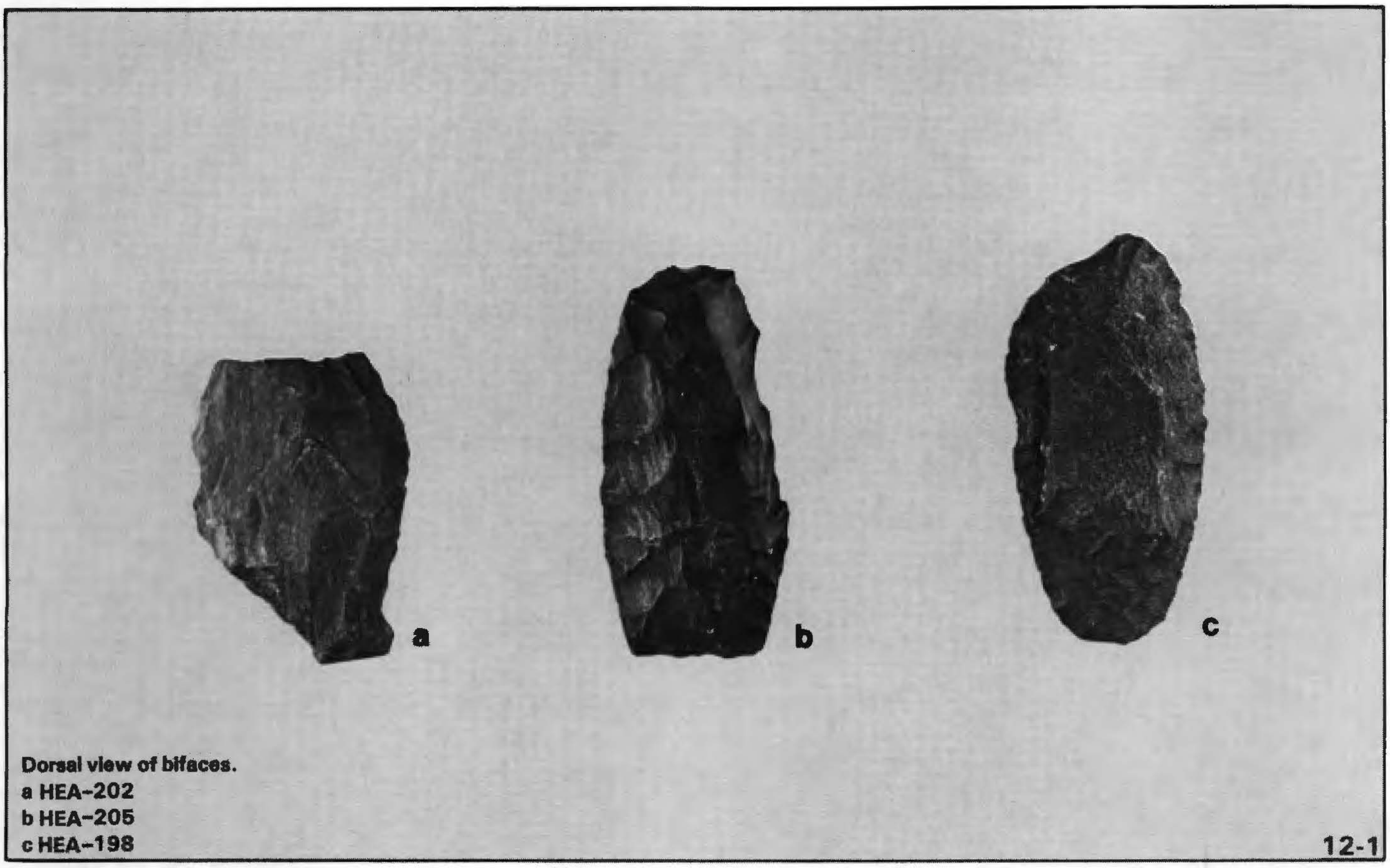
FIGURE 11

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Scale: Actual Size

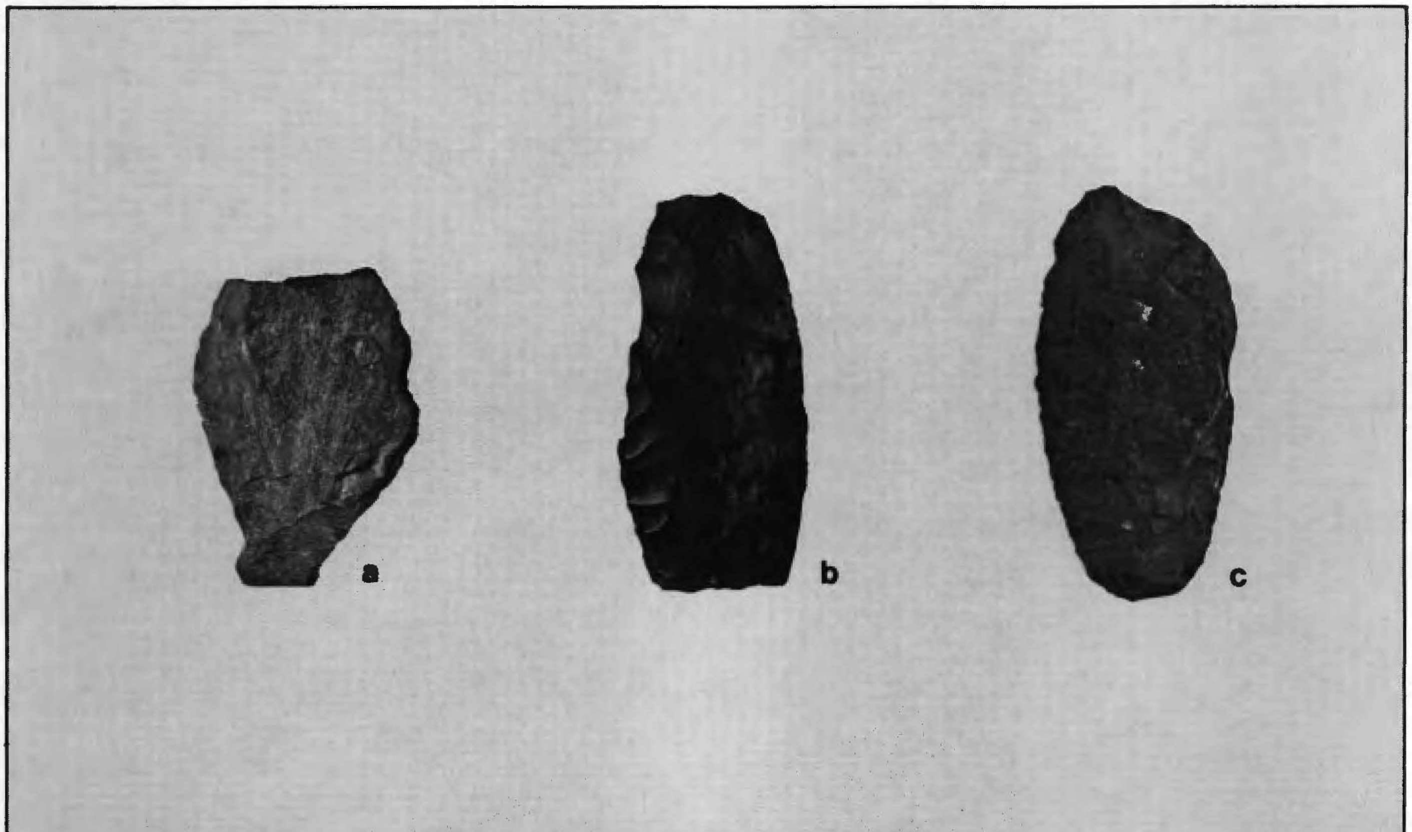
Lithic Artifacts 1981 Survey

Gilbert/Commonwealth



Dorsal view of bifaces.
a HEA-202
b HEA-205
c HEA-198

12-1



Reverse sides of bifaces above

12-2

FIGURE 12

Alaska Power Authority ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE

Scale: Actual Size

Lithic Artifacts 1981 Survey

Gilbert/Commonwealth

Site No. 5
AHRS No. HEA-199
Map: Healy (C-4)
Setting: small hilltop in a broad glacial valley
Testing: none
Artifacts: one rhyolite biface fragment (Figure 11) was collected from the surface
Recommendations: further site testing

Site No. 6
AHRS No. HEA-200
Map: Healy (C-4)
Setting: top of small knoll near stream valley confluence
Testing: one test pit produced cultural material just below the sod
Artifacts: chert and basalt flakes were noted on the surface; one basalt and two chert flakes were found in the test pit and collected
Recommendations: further site testing

Site No. 7
AHRS No. HEA-201
Map: Healy (C-4)
Setting: lateral moraine feature in broad glacial valley
Testing: one test pit produced cultural material just below the sod in a fire altered (possibly cultural) context
Artifacts: numerous surface and subsurface lithic flakes were noted. Ninety-three lithic artifacts, including a medial segment of a chalcedony microblade and 92 flakes of diverse lithology, were found in the test pit and collected.
Recommendations: further site testing

Site No. 8
AHRS No. HEA-202
Map: Healy (C-4)
Setting: lateral moraine feature in a broad glacial valley
Testing: none
Artifacts: numerous lithic artifacts were noted in the context of a surface erosion feature. Two side-notched projectile points (one chert and one rhyolite) were collected (Figures 11 and 12).
Recommendations: further site testing

Site No. 9
AHRS No. HEA-203
Map: Healy (D-4)
Setting: edge of bedrock terrace overlooking confluence of stream valleys
Testing: one test pit revealed subsurface cultural material
Artifacts: lithic scatters were discovered in two loci, approximately 25 meters apart. Locus #1 contained chert and chalcedony flakes, a rhyolite microblade medial-distal segment, and a rhyolite platform rejuvination flake from a microblade core (Figure 12). Locus #2 consisted of a dense scatter of chalcedony flakes. The test pit revealed cultural material (in situ) just beneath the sod. The microblade fragment, core rejuvination flake, and six flakes (from the test pit) were collected.
Recommendations: futher site testing

Site No. 10
AHRS No. HEA-204
Map: Healy (B-4)
Setting: top of small prominence overlooking river
Testing: none
Artifacts: several chert and rhyolite flakes were observed on the surface. Three fit together to form a rhyolite side-scraper. No material was collected.
Recommendations: further site testing

Site No. 11
AHRS No. HEA-205
Map: Healy (B-4)
Setting: top of small hill overlooking river
Testing: test probes revealed in situ subsurface material
Artifacts: a small scatter of surface flakes was observed. A beige chert biface fragment, in two pieces, and a fine-grained black chert projectile point fragment (Figures 11 and 12) were collected.
Recommendations: further site testing

Site No. 12
AHRS No. HEA-206
Map: Healy (B-5)
Setting: edge of recent river terrace
Testing: none
Artifacts: deteriorated log cabin structure
Recommendations: further site testing

Site No. 13
AHRS No. HEA-207
Map: Healy (C-4)
Setting: stream bank
Testing: none
Artifacts: standing log cabin and associated litter, including remnants of plastic windows, a few cans of food
Recommendations: further site investigation

1982 Field Season

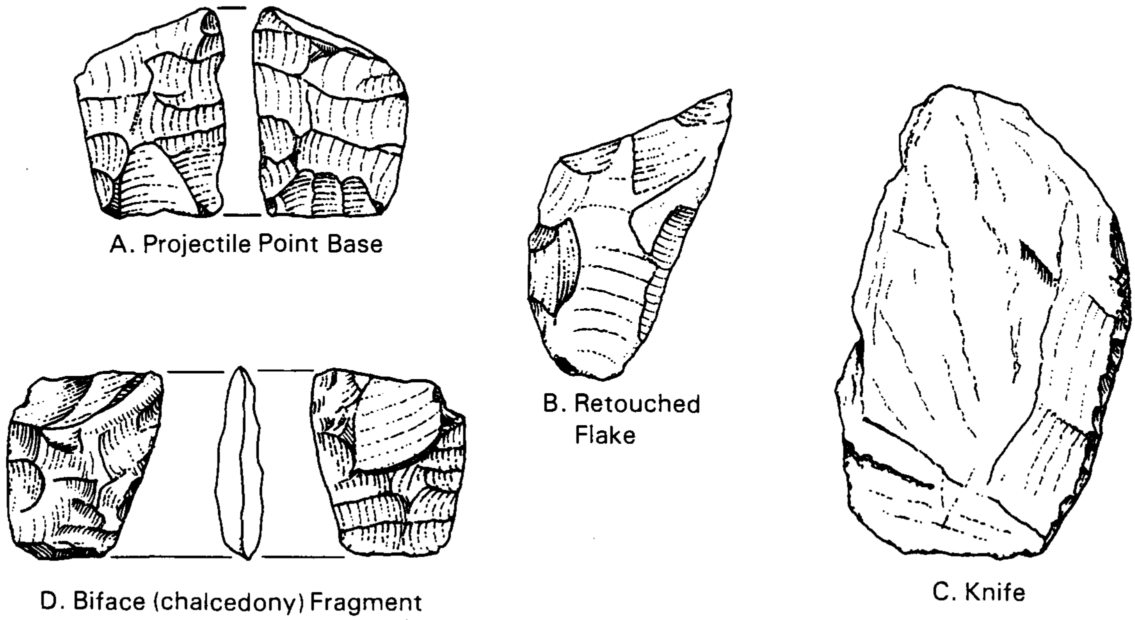
The 1982 archeological survey recorded a total of five sites which includes Curry, a previously identified site. Two of the four sites discovered in 1982 are prehistoric, while the other two date to the historic period. Curry (TAL-004) and HEA-225 are now identified as being within the project impact area. Brief descriptions of each site follow. More detailed information is provided in Appendix C.

Site No. 14
AHRS No. HEA-226
Map: Healy (B-4)
Setting: linear glacial outwash feature (esker)
Testing: testing produced one subsurface artifact
Artifacts: a biface, revealed in a test pit, suggests the likelihood of a buried cultural deposit. A total of three biface fragments, one unifacially retouched lithic specimen (Figure 13), and over 100 lithic flakes were observed. A surface feature consisting of small boulders arranged to form a roughly circular shape approximately two meters in diameter was found approximately 120 meters away from the largest exposed lithic concentration.
Recommendations: further site testing

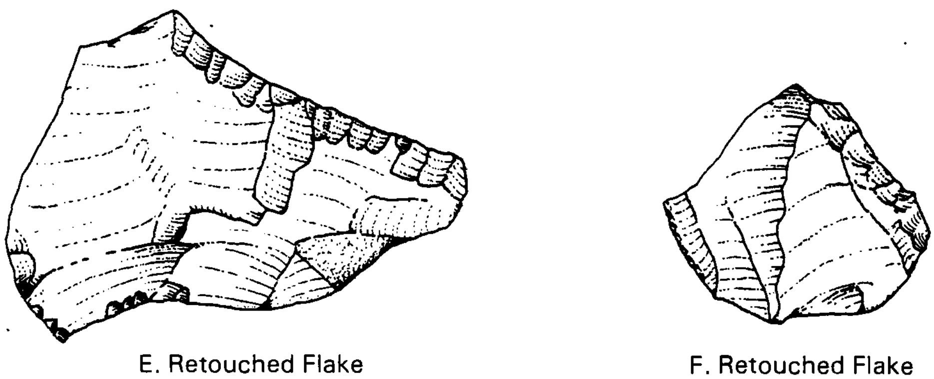
Site No. 15
AHRS No. HEA-225
Map: Healy (D-4)
Setting: bluff-like terrace overlooking confluence of a stream and a river
Testing: numerous test pits produced no evidence of subsurface cultural material
Artifacts: two creamy-tan chert debitage flakes and two regularly retouched dull grey chert flakes (Figure 13) were discovered during three visits to this location. Three of the four artifacts were relocated and collected. The fourth artifact could not be relocated.
Recommendations: no further investigation is recommended for this location. This limited collection of four artifacts does not meet the minimum definition of an archeological site.

Site No. 16
AHRS No. TLM-011
Map: Talkeetna Mountains (C-6)
Setting: high glacial scoured ridge
Testing: several shallow tests revealed no subsurface cultural material
Artifacts: three relatively regular circular arrangements of rocks were noted. Two are about 3.6 meters in diameter, and a third is approximately 2.2 meters in diameter. A fourth, less regular, rock feature is located in association with several wooden poles. The four features are uniformly spaced about 65 meters from each other. U.S. military issue items, including aerosol cans, food containers, and a flare cannister, were associated with the stone features.
Recommendations: no further site investigation is recommended

Site No. 17
AHRS No. HEA-188
Map: Healy (A-5 and B-5)
Setting: small stream valley near coal outcrop
Testing: none
Artifacts: structures including a quonset hut and a small frame building were observed at Locus #2. These were associated with historic period litter. Locus #1 consists of three log cabin ruins and a cache associated with a historic period dump.
Recommendations: futher site investigation, especially at Locus #1



SITE HEA-226 ARTIFACTS



SITE HEA-225 ARTIFACTS

FIGURE 13

Alaska Power Authority **ANCHORAGE FAIRBANKS TRANSMISSION INTERTIE**

Lithic Artifacts

Scale: Actual Size

Gilbert/Commonwealth

Site No. 18
AHRS No. TAL-004
Map: Talkeetna (C-1)
Setting: river bank near the confluence of the river and a small stream
Testing: none
Artifacts: foundations and remains of the town of Curry
Recommendations: this site should be investigated for possible eligibility for inclusion in the National Register of Historic Places. Also, field investigations should review the potential impact of a proposed Transmission Intertie project camp/staging area here.

ACCESS ROUTES AND CAMP/STAGING AREAS

Construction of a project such as the Transmission Intertie requires the assembly of men and materials at the project location. Generally men and materials are brought to the job site after being organized at preselected camps and staging areas. A total of ten such staging centers were identified to project archeologists.

Once assembled, men and materials move to the project via predetermined access routes. In the case of the Transmission Intertie project, a combination of overland and aerial routes are contemplated. Thirty-two overland routes were identified to project archeologists.

A cultural resources survey of proposed access routes and of proposed camp/staging areas indicates that only one significant historical property may be impacted by proposed construction related activities. Significant cultural resources were not found to lie along any of the proposed access routes. The abandoned community of Curry (TAL-004) is the only potentially historically significant property which may be impacted by proposed camp/staging area development. The Alaska State Historic Preservation Office (SHPO) has recommended that additional data collection is necessary before that office can approve the Curry location as a camp/staging area. Curry may be eligible for inclusion in the National Register of Historic Places.

Proposed Access Routes

The following is a summary of results of the cultural resource investigations along the proposed access routes (Table 5). Milepost numbers refer to locations along the recommended Intertie route; Milepost 0 is the Douglas Substation at Willow. Potential refers to the potential for locating preserved archeological sites. All access routes were surveyed by helicopter, some were also surveyed on the ground. Areas of low potential were not ground surveyed.

Areas of low potential, discussed in the Methods section of this report, include areas thought not likely for settlement or for site preservation. In general, areas considered low in archeological potential include: 1) areas under standing or running water, 2) areas steep of slope, and 3) areas where archeological visibility is poor due to extremely heavy vegetation.

TABLE 5

RESULTS OF CULTURAL RESOURCE INVESTIGATIONS
ALONG PROPOSED ACCESS ROUTES

Access Route Name	Mile Post	Condition	Comment	Ground Surveyed Yes	Ground Surveyed No
Hatcher Pass Road	0.0	unimproved, flat, wet	low potential*		x
Kashwitna Winter Trail	7.1	existing winter trail, flat, wet	low potential		x
Caswell Road	15.5	existing road	heavily disturbed		x
Gibson Road	24.2	existing road	heavily disturbed		x
Yoder Road	29.3	existing road	heavily disturbed		x
Barge Drive/Question Lake Road	35.0	existing road	heavily disturbed		x
Talkeetna Access Road	45.0	unimproved, wet, steep, heavy vegetation	low potential		x
Lane Creek Shu-Fly	PI-18	unimproved, steep slopes, heavy vegetation	low potential		x
South Dead Horse Creek Trail	61.0	unimproved existing cat trail, steep slopes	heavily disturbed		x
Gold Creek Access Trail	74.2	existing road	heavily disturbed		x
Susitna Valley Access Trail	79.2	existing road	heavily disturbed		x
Canyon Access	80.3	unimproved, steep slopes, heavy vegetation	low potential		x
Chulitna Access Road	84.5	existing road	heavily disturbed		x
Granite Creek Access	92.0	existing winter trail	low to moderate potential	x	
Hurricane Gulch Shu-Fly	94.0	unimproved	moderate potential	x	
Little Honolulu Creek Shu-Fly	96.0	unimproved, steep slopes, heavy vegetation	low potential		x
Honolulu Creek	97.5	unimproved, steep slopes, heavy vegetation	low potential		x
Antimony Creek Access	101.1	existing road	heavily disturbed		x
Igloo Road	108.8	unimproved, flat, wet	low potential		x

TABLE 5

RESULTS OF CULTURAL RESOURCE INVESTIGATIONS
ALONG PROPOSED ACCESS ROUTES
(Continued)

Access Route Name	Mile Post	Condition	Comment	Ground Surveyed Yes	Ground Surveyed No
Broad Pass Access Road	112.3	existing trail plus flat, wet extension area	existing trail portion is heavily disturbed, extension area is low potential		x
Middle Fork Chulitna River South Access	114.5	existing road	historic structures observed from the aerial survey	x	
Middle Fork Chulitna River North Access	116.0	unimproved	low to moderate potential	x	
Summit Road	125.5	existing trail	low to moderate potential	x	
Jack River Road	128.0	existing road	heavily disturbed		x
Reindeer Hills Trail	129.0	existing trail	low to moderate potential	x	
Nenana River South Access	133.9	unimproved, flooded	low potential		x
Panorama Mountains Trail	135.0	existing trail over flooded boulder field	low potential		x
Slime Creek Trail	138.0	existing road	heavily disturbed		x
PI 105 Access	141.2	unimproved, flat, wet	low potential		x
Carlo Creek Road	142.2	unimproved	low to moderate potential	x	
Deneki Lakes South Access	144.3	unimproved	low to moderate potential	x	
Deneki Lakes North Access	146.1	existing road over flat, wet terrain	heavily disturbed		x

*See definition and discussion of low potential areas beginning on page 45.

Areas of recent disturbance, such as existing roads, were not subjected to terrestrial archeological survey.

Camp/Staging Areas

Ten proposed camp/staging areas were inspected in 1982. All but three were found to be heavily disturbed during prior development as either railroad sidings or gravel pits; consequently, they were considered clear of significant cultural resources. Three exceptions noted were Douglas Substation, Curry, and Gold Creek. A terrestrial survey was conducted over the Douglas Substation site, but no cultural resources were identified. The Gold Creek staging area is located in a flat, moist, featureless floodplain area. Little potential exists for detecting subsurface archeological sites there; and no above-ground structures were noted, although they were visible on adjacent parcels of land. No survey is recommended for Gold Creek. Snow on the ground at Curry prevented adequate evaluation of that proposed camp/staging area. That site visit is now scheduled for June 1983. A summary of camp/staging areas investigated and the results of those investigations is found in Table 6. A camp/staging area at Kashwitna was identified subsequent to the 1982 field season and will be investigated in 1983.

TABLE 6

RESULTS OF CAMP/STAGING AREA INVESTIGATIONS

Proposed Camp/Staging Area	Comment
Douglas Substation	Surveyed, no sites found
Talkeetna Staging Area and Camp	Existing gravel pit; no survey necessary due to prior disturbance
Curry Staging Area and Camp	Location of historically significant community; additional survey and testing recommended
Gold Creek Staging Area	Flat, moist, featureless, floodplain area, no ground survey recommended; decision reached in consultation with SHPO
Chulitna Staging Area and Camp	Disturbed railroad developed area
Granite Creek Staging Area and Camp	Disturbed railroad developed area
Broad Pass Staging Area	Disturbed railroad developed area
Jack River Staging Area and Camp	Existing gravel pit
Deneki Lakes Staging Area and Camp	Existing gravel pit
Healy Power Plant Staging Area and Camp	Disturbed railroad developed area

Procedures and results of both the proposed access routes and camp/staging area surveys were reviewed by the Alaska Historic Preservation Office prior to and following field investigations. The recommendation not to use the proposed Curry site, until after further cultural resource investigations, is made at the suggestion of the SHPO.

CONCLUSIONS

LIMITATIONS OF METHODS

All cultural resource investigations in the project area were conducted in an approved professional manner. However, buried cultural resources often remain undetected by cultural resource surveys. If such remains exist, some may be eligible for inclusion in the National Register of Historic Places. A careful cultural resource survey is no guarantee that all significant archeological and/or historical properties have been identified in the project area. For large area surveys, such as the case with this project, time does not permit sampling more than a tiny fraction (far less than 0.01 percent) of subsurface sediments. All sediments are potentially culture bearing; therefore, it is conceivable that cultural resources may be discovered as a result of construction activities. In the event that construction activities reveal the presence of cultural resources, the State Historic Preservation Office and coordinating federal agency representative should be notified immediately.

Because not all portions of designated Intertie corridors were subjected to terrestrial archeological survey, it is obvious that the survey provided less than 100 percent coverage. Yet, the survey is considered reasonable in view of time and fiscal limitations, and also when compared to recent archeological survey efforts for similar projects. Available archeological and ethnological data, gained over more than 100 years of arctic/subarctic research, allow some insight as to the nature of man-habitat interrelationships in south-central Alaska. These insights lead to certain conclusions as to which portions of proposed alignments and related construction areas should be considered as low, moderate, or high in potential for yielding significant cultural resources.

Approximately 78 percent of all corridor segments examined were considered to be other than low in archeological potential. Criteria for areas of low potential are discussed in this report beginning on page 45. Using the same criteria, approximately 70 percent of the selected Intertie corridor is judged as moderate or high in archeological potential. All areas thought to be either moderate or high in archeological potential were subjected to terrestrial archeological survey. Much of the areas thought to be low in archeological potential were examined from the air, using helicopters, but were not ground surveyed. As a check against our bias, significant portions of areas deemed low potential were also ground surveyed. A sample of between 15 percent and 20 percent of designated low potential areas were also ground surveyed.

A measure of the intensity of the archeological survey discussed in this report is provided by comparing this project to the archeological survey along portions of the proposed Northwest Alaska Gas Pipeline corridor, a corridor which also crosses interior Alaska. Aigner and Shinkwin (1979:99) report that their survey coverage was 87 percent, very close to our estimated 84 percent for the Intertie corridor. Aigner and Shinkwin cite Schiffer and Gummerman (1977:186) as defining intensive survey as survey which requires in excess of ten person-days per square mile. This compares with approximately 13 person-days per square mile on the Intertie project.

While on-the-ground coverage was less than 100 percent for the Intertie archeological survey, the survey was intensive over the project area and a reasonable and professional effort was made. This effort was also consistent with similar recent efforts over generally similar interior Alaskan terrain.

OBSERVATIONS REGARDING COLLECTED DATA

A pre-survey analysis of overall archeological potential of the study area indicated that a low number of sites could be expected to lie within the study area defined as a narrow corridor traversing hillside areas between Willow and Healy. This estimate was based on the results of archeological surveys conducted for the Trans-Alaska oil pipeline and for the Solomon Gulch to Glennallen transmission line, both of which yielded archeological sites in low numbers south of the Alaska Range. In addition, the northern portion of the study area, nearer the Alaska Range, was thought to be the most likely place to detect archeological sites, due to the smaller amount of vegetative cover in many places there. Archeological survey data collected over two field seasons along the proposed Intertie corridor appear to be consistent with these earlier observations. Of seventeen discovered sites, all but one were located in the southern foothills of the Alaska Range.

The 1981 and 1982 field surveys constitute a geographical transect reaching from the Alaska Range nearly to tidewater. A variety of biotic habitats were encountered. Conclusions based on the results of two field seasons of research differ from those reached in a preceding analysis of archeological potential of the study area. The potential of the study area, in terms of locatable in situ sites, was lower than originally thought.

It is not yet clear why this may be so, but it may be possible that geomorphological processes such as water and wind erosion have reduced archeological site survival during the period since deglaciation. This would have the effect of reducing detection rates. Other factors which tend to reduce our effectiveness in site detection are obscuration of sites due to heavy surface vegetation and sites being too deeply buried to be detected using the testing procedures which we used.

The geographic distribution of sites revealed in place name analysis and in ethnology does not appear to correlate well with the geographic distribution of sites revealed during the archeological survey. Nearly half (9 of 19) of the Dena'ina (Tanaina) place names in Appendix B link subsistence activities with bodies of water, either creeks, rivers or lakes. However, a strong majority (11 of 19) of the Dena'ina place names are associated with subsistence activities in upland areas. The bias in favor of site recovery in upland areas is likely due to two circumstances: (1) site visibility is generally greater in upland areas, and (2) opportunities for site preservation are reduced near the banks of rivers and streams where many ethnohistoric sites were located.

None of the sites discovered in 1981 and 1982 have been securely dated; however, all of the lithic scatters appear to date to prehistoric times, earlier than the ethnographic period. This is an unexpected survey result, as more recent sites usually have an advantage in geological preservation. Ordinarily, one would expect to discover a greater percentage of sites from the more recent periods. We conclude that four factors are primarily responsible for the noted discrepancy: (1) site visibility over much of the survey area is extremely limited due to heavy surface vegetation; (2) many sites were originally created in areas of geologic instability, such as on actively eroding stream banks and on river floodplains; (3) archeological survey methods are not designed to inspect more than an insignificant amount of subsurface sediments and, (4) the survey did not often encounter settlement locations favored in the ethnographic period, such as the mouths of major streams or rivers and their confluences with other major streams.

POTENTIAL IMPACT OF CONSTRUCTION ON SITES ELIGIBLE FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES

In order to assess potential project impact on cultural resources, it is necessary to formulate a definition of impact area and impact. Fortunately, some help is provided in existing federal regulation. The area of an undertaking's potential environmental impact is defined (36 CFR 800.2(o)) as a "geographic area within which direct and indirect effects created by the undertaking could reasonably be expected to occur and thus cause change in the historical, archeological, or cultural qualities possessed by a National Register or eligible property."

Some guidance as to the delineation of the study area can be found in the "Criteria of Effect" definition in 36 CFR 800.3(a), which states that an undertaking shall be considered to have an effect "whenever any conditions of the undertaking causes or may cause any change, beneficial or adverse, in the quality of the historical, architectural, archeological, or cultural characteristics that qualify the property to meet the criteria of the National Register."

It is reasonable to state that about the only impact which can harm an archeological site is impact which causes damage to surface or near surface sediments. Thus, secondary impact of construction activities, such as increased noise level, cannot be expected to harm qualities of archeological sites which might make them eligible for inclusion in the National Register of Historic Places. With like reasoning, it is concluded that project direct and indirect impact areas are those areas for which surface disturbing activities can be reasonably expected to take place. Direct impact areas are those which are scheduled for actual construction activities, examples of which are right-of-way clearing, tower erection and powerline rigging. Anticipated clearing and movement of equipment between proposed tower locations can be expected to occur within a narrow corridor. We estimate this corridor to be less than 115 feet wide, 58 feet either side of the centerline. A somewhat larger activity corridor can be defined as the area within 200 feet either side of centerline, 400 feet total, which constitutes the extent of right-of-way required for the Intertie project. This can be considered an estimate of the indirect impact area. Occasional violations of the narrow corridor could occur in the form of increased erosion rates or some other event that is difficult to forecast. Details as to anticipated project impacts are discussed in the project Environmental Assessment Report (Commonwealth 1982).

For overland access routes, a more restrictive corridor can be defined. As the range of construction activities along an access route is much less complex than that along the transmission line corridor, it is reasonable to assume less opportunity for surface disturbing activities beyond construction of the access road itself. Access roads which must be constructed are planned as one lane temporary roadways sufficiently wide to allow passage of heavy equipment. Normally, one could anticipate the need for a road base approximately 10 feet wide. For purposes of this project, we used a more conservative definition of a 20-feet-wide access route corridor.

The total area encompassed in proposed camp/staging areas should be considered as a direct impact area, as the total area is subject to surface disturbing activities. However, indirect impact areas associated with camp/staging areas will be minimal. Boundaries of staging areas set strict limits for construction related activities. Because nearly all of the proposed camp/staging areas fall well within already disturbed areas, a buffer zone of disturbed area will surround most of them. Thus, for most proposed camp/staging areas, likely indirect impact areas will already have been sufficiently disturbed so as to preclude the likelihood of impact to significant cultural resources.

Three of the proposed camp/staging areas may be in exception to the conditions discussed above. The Douglas Substation, Curry, and the Gold Creek staging areas are not located in existing gravel pits or along already improved railroad siding areas where no significant cultural resources have been identified. A terrestrial survey was conducted over the proposed expansion area of the Douglas Substation; this survey included a buffer strip approximately 50 feet wide outside the perimeter of this area. No cultural resources were found during the survey, although it was noted that a large portion of the proposed substation area has already been disturbed as a result of previous substation construction. The proposed Gold Creek staging area lies along the Alaska Railroad in a flat, moist, featureless, floodplain setting. Although historic period development could be readily seen nearby, none could be seen in the proposed Gold Creek staging area when it was examined from the air by helicopter. The setting of this proposed staging area is not consistent with areas identified through archeology and ethnology as having archeological potential. Thus, anticipated direct and indirect project impacts at this location are considered as no threat to significant cultural resources.

Curry is recognized as potentially historically significant. However, a full discussion of potential project direct and indirect impacts is not possible until an on-site inspection, scheduled for June, 1983, is completed. It is suspected, on the basis of available documentation and on the basis of interviews with former residents of Curry, that proposed camp/staging use will not directly impact remains of this former settlement. With the possible exception of Curry, only one archeological site has been identified as within either the direct or indirect project impact zones; that site is HEA-225.

In our opinion HEA-225 is not eligible for inclusion in the National Register of Historic Places, since it fails to meet criteria established for this purpose. Three of the four artifacts at the site were relocated and collected. None of the four artifacts is culturally diagnostic, and neither the artifacts nor their spatial relationships can be demonstrated to be significant. In fact, HEA-225 may not be an archeological site at all, in the technical sense. Rather, it may be chance association of four artifacts deposited at separate times; no one will ever know for certain. The most important scientific data to be obtained from HEA-225 is its location. The site has no further known archeological significance requiring protection. Thus, even if HEA-225, as originally found, were considered for eligibility in the National Register of Historic Places, project impact (tower construction at this location) could not be interpreted as having an adverse effect on the qualities which make HEA-225 important. So, either 1) HEA-225 is not significant or 2) the site is significant, but the qualities which make it so will not be affected by project construction.

On the basis of extended literature and archival research supported by two seasons of archeological field survey, it is concluded that with one exception, Curry, the proposed Transmission Intertie project will not pose a threat to any property now listed in or presumed eligible for inclusion in the National Register of Historic Places.

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APPENDIX A

PREVIOUSLY RECORDED SITES IN THE STUDY AREA

APPENDIX A

PREVIOUSLY RECORDED SITES IN THE STUDY AREA

Site Number	Site Name	Site Type
HEA-001	Teklanika West	Prehistoric
HEA-004	Denali National Park	
HEA-005*	Dry Creek Site	Prehistoric
HEA-006	Otto Lake Site	Prehistoric
HEA-010	Unnamed	Prehistoric
HEA-012	Unnamed	Prehistoric
HEA-013	U.S. Bureau of Mines, Safety Car No. 5	AK Railroad
HEA-014	Coyote Creek Site	Prehistoric
HEA-015	Unnamed	Prehistoric
HEA-018	Unnamed	Prehistoric
HEA-019	Otto Lake Southeast	Prehistoric
HEA-020	Otto Lake Lodge Site	Prehistoric
HEA-025	Unnamed	Prehistoric
HEA-026	Unnamed	Prehistoric
HEA-027	Garner Hill Site	Prehistoric
HEA-028	Dragonfly Creek Site	Prehistoric
HEA-029	Unnamed	Prehistoric
HEA-030	Unnamed	Prehistoric
HEA-031	Carlo Creek Site	Prehistoric
HEA-032	Unnamed	Prehistoric
HEA-052	Moody	ARR Station, 1921
HEA-053	Yanert	ARR Station, 1921
HEA-054	Sullivan's Roadhouse	1930s
HEA-055	Summit Roadhouse	1910s
HEA-056	Cantwell Roadhouse	1940s
HEA-057	Panorama Roadhouse	1920s
HEA-058	Park Gate Roadhouse	1920s

PREVIOUSLY RECORDED SITES IN THE STUDY AREA

Site Number	Site Name	Site Type
HEA-059	Morino Roadhouse	1920s
HEA-061	Broad Pass Roadhouse	1930s
HEA-062	Nenana River Gorge Site	Prehistoric
HEA-063	Hurricane Gulch Bridge	ARR Bridge, 1921
HEA-064	Honolulu	ARR Station, 1921
HEA-065	Colorado	ARR Station, 1921
HEA-066	Broad Pass	ARR Station, 1921
HEA-067	Summit	ARR Station, 1921
HEA-068	Cantwell Station	ARR Station, 1921
HEA-069	Cantwell	ARR Station, 1922
HEA-070	Windy Creek Bridge	ARR Bridge
HEA-071	Windy	ARR Station, 1920
HEA-072	Clear Creek Bridge	ARR Bridge, 1929
HEA-073	Carlo	ARR Station, 1920
HEA-074	Riley Creek Bridge	ARR Bridge, 1922
HEA-075	Mt. McKinley Park Station	ARR Station, 1921
HEA-076	Moody Tunnel	ARR Tunnel, 1920
HEA-077	Tunnel No. 9	ARR Tunnel, 1921
HEA-078	Garner Railroad Camp	ARR Camp, 1920
HEA-079	Garner Tunnel	ARR Tunnel, 1921
HEA-080	Healy Station	ARR Station, 1920
HEA-082	Suntrana	ARR Station, 1922
HEA-083	Nenana River Bridge	ARR Bridge, 1926
HEA-084	Sheep Creek Bridge	ARR Bridge, 1944
HEA-096	Jack River Bluff Site	Prehistoric
HEA-109	Bison Gulch Bluff Site	Prehistoric
HEA-110	Wick Rockshelter	Prehistoric
HEA-121	Bison Gulch No. 2	Prehistoric
HEA-147	Mt. McKinley Park Bldgs.	1926 to 1939
TAL-001	Curry Lookout	Ethnohistoric, Historic

PREVIOUSLY RECORDED SITES IN THE STUDY AREA

Site Number	Site Name	Site Type
TAL-003	Chase Station	ARR Station, 1919
TAL-004	Curry	ARR Station, 1919
TAL-005	Montana	ARR Station
TAL-006*	Fairview Inn	1930s
TAL-008	Talkeetna Roadhouse	1917
TAL-009	Deadhorse Hill Roadhouse	1920s
TAL-011	Montana Creek Bridge	ARR Bridge, 1926
TAL-012	Sunshine	ARR Station, 1918
TAL-013	Fish Lake	ARR Station, 1918
TAL-014	Talkeetna Station	ARR Station, 1916
TAL-015	Talkeetna River Bridge	ARR Bridge, 1926
TAL-017	Unnamed	Talk. Hist. Dist.
TAL-018	Bucket-of-Blood Saloon	Talk. Hist. Dist.
TAL-019	Harry Robb Cabin	Talk. Hist. Dist.
TAL-020	Dahl Cabin	Talk. Hist. Dist.
TAL-023	Jenkin's House	Talk. Hist. Dist.
TAL-024	Leatherworks	Talk. Hist. Dist.
TAL-025	Little Red Schoolhouse	Talk. Hist. Dist.
TAL-026	First High School	Talk. Hist. Dist.
TAL-027	Dahl Cabin No. 2	Talk. Hist. Dist.
TAL-028	Nagley Home	Talk. Hist. Dist.
TAL-029	Denali Store	Talk. Hist. Dist.
TLM-001	Canyon Station	ARR Station, 1920
TLM-002	Chulitna Station	ARR Station, 1920
TLM-003	Mile 281 Roadhouse	1910s
TLM-004	Sherman Station	ARR Station, 1920
TLM-005	Gold Creek	ARR Station, 1920
TLM-006	Susitna River Bridge	ARR Bridge, 1920
TLM-008	Hurricane Station	ARR Station, 1920
ANLC-001	Suk' Qayeh alt. Tsu Qayeh	Village Site

PREVIOUSLY RECORDED SITES IN THE STUDY AREA

Site Number	Site Name	Site Type
TYO-014	Unnamed	Protohistoric
TYO-024	Kashwitna Village	Protohistoric
TYO-025	Willow	ARR Station, 1917
TYO-026	Little Willow Creek Bridge	ARR Bridge, 1927
		TYO-027Willow Creek BridgeARR Bridge, 1927
TYO-028	Kashwitna	ARR Station, 1917
TYO-029	Caswell	ARR Station, 1917
TYO-031	Sheep Creek Bridge	ARR Bridge, 1927
PC-001	Unnamed	Protohistoric
PC-002	Unnamed	Prehistoric
CI-165	Montana Creek Cemetery No. 1	Protohistoric
CI-166	Montana Creek Cemetery No. 2	Protohistoric
CI-167	Sunshine Cemetery	Protohistoric
CI-168	Talkeetna Cemetery	Protohistoric
CI-169	Talkeetna Cemetery	Historic
U.S.G.S Trail	Route of Eldridge in 1898	

NOTE: Sites followed by an "*" are listed in the National Register of Historic Places.

References:

Those sites designated by three letters followed by three digits (e.g., HEA-005) are sites listed in the Alaska Heritage Resource Survey File maintained by the Alaska Division of Parks, 619 Warehouse Drive, Anchorage, Alaska, 99501.

Those sites designated by the letters "PC" represent sites reported through oral communication to Glenn Bacon, Alaska Heritage Research Group, Inc., P.O. Box 397, Fairbanks, Alaska, 99707.

Those sites designated by the letters "CI" represent sites reported in the Cook Inlet Region Inventory of Native Historic Sites and Cemeteries, Cook Inlet Native Association, 1975. This report was prepared in response to section 14(h) of the Alaska Native Claims Settlement Act.

Information concerning the U.S.G.S. trail was derived from the 20th Annual Report of the U.S. Geological Survey, U.S. Government Printing Office, 1900. See Part VII, Map No. 3, for locations of camps along the route.

The sites designated by the letters "ANLC" were reported in a place names discussion in Bacon, Kari and Cole (1982). Although Tanaina (Dena'ina) knowledge of portions of the study area is quite detailed, indicating extensive ethnohistoric period use of the area, many of the place names are not instructive concerning specific activities at specific locations; thus, they are not reproduced here.

APPENDIX B

DENA'INA PLACE NAMES IN THE STUDY AREA

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DENA'INA PLACE NAMES IN THE STUDY AREA

The Alaska Native Language Center, University of Alaska, has produced an extensive list of place names, some of which are reproduced below. The locations listed below were selected because they are all near the survey area. No Ahtna place names are listed because those published lie outside the survey area.

The following areas have been identified as important Tanaina land use sites or areas in the past:

1. Kilbitnu Tl'u — upper Kashwitna River area
"-?- river -"

The Kroto Creek village people used the mountain country on the upper Kashwitna to hunt ground squirrels, caribou, and beaver in the autumn.

2. Baqay Nilyashtnu — Sheep Creek
"canoes are left creek"

The name refers to the practice of leaving canoes here while on caribou hunting excursions in the Talkeetna Mountains to the east of here.

3. Bak'nin'uy — place in the mountains up above Sheep Creek
"caribou fence"

This name may refer to the mountain pass between peak "Sunshine" and peak "Wolverine." This is the site of an ancient caribou fence. People hunted here annually for caribou until late in the nineteenth century.

4. Qiduk'ggat — Montana Creek and village site
"overflows and freezes"

This is the site of the modern Montana Creek village, where descendents of the last of the Mountain People live. Oral history indicates that this has been a village site for at least a hundred years.

5. Nultani — series of mountains east of Montana Creek
"animal that is lying down"

This is reportedly a major traditional hunting territory of the Montana Creek people.

6. K't'usq'a Kaq' — site at the mouth of Sunshine Creek
"fish cutting hole - mouth"

DENA'INA PLACE NAMES IN THE STUDY AREA

7.	K't'usq'atnu "fish cutting hole - creek"	Sunshine Creek

Tanaina used to camp and put up fish here. This is also the location of a fishing site used by the Mountain People.

8.	Ch'atem Bena "freezes out - lake"	Fish Lake

This was a fishing site used by one of the last of the Mountain People into the late 1930s.

9.	Ts'estalki "flat rock point"	peak "Lane", east of Chase

This was a caribou hunting area for the Mountain People.

10.	Quht'anagga Betnu K'ilani "creek that belongs to the little people" (i.e., rock concretions)	Gold Creek

Shem Pete recalls caribou hunting in this area in 1914 with Talkeetna Alec and Wasillie Tukda. This was the hunting country of the Mountain People.

11.	Dghelisha "little mountain"	mountain at the head of Gold Creek, peak "Clear"

This was a caribou hunting area.

12.	Chuqitnu Tustes "beaver lodge creek - pass"	Chulitna Pass

This was a caribou and bear hunting area.

13.	K'dalkitnu "food is stored - river"	Talkeetna River

The name refers to food being cached here. The Talkeetna River is said to have been the home area of the Mountain People. These people are said to have had no nichiɫ, large winter houses common on the coast. Instead these people are said to have lived nomadically throughout their area. Many of these people died in the influenza epidemic of 1918.

DENA'INA PLACE NAMES IN THE STUDY AREA

14. Ch'anilkaq' — site at Chunilna Creek outlet
"flows out - mouth"

This was a fishing site of the Mountain People.

15. Batnaghalnigi — Larsen Lake
"that which has a body in it"

This location is reportedly a stopping place for tea when on the trip up into the mountains to hunt.

16. Ts'ilutnu — Chulitna River
"-?- river"

This was an important caribou hunting area, especially for the Mountain People of the Talkeetna area.

17. K'esugi — Curry Ridge
"the ancient one"

It is told that every summer people would stay here waiting for caribou. Then they would make a skin boat and go back to Kroto (village).

18. K'esugiken — regional name for the general area around K'esugi
"base of the ancient one"

This was a bear and caribou hunting area for all of the Susitna people. People are said to have lighted signal fires when they spotted game.

19. Nelnikda Ey'unt — Troublesome Creek
"where a shabby steambath is located"

The name indicates that an old camp was located here.

20. Denyiht'u — Broad Pass area
"enclosed canyon"

The Tanaina Indians are said to have used a trail to Cook Inlet which went through Broad Pass and along the Chulitna River.