

Environmental Assessment

for

Construction of a Communications Facility
at
Snowy Peak, Alaska

**354th Fighter Wing
Eielson AFB, Alaska
April 2004**

Report Documentation Page

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Finding Of No Significant Impact (FONSI)
for the
Installation of a Communications Facility at Snowy Peak, Alaska

The host unit at Eielson Air Force Base (Eielson AFB), the 354th Fighter Wing (FW), operates F-16 Fighting Falcon and A/OA-10 Thunderbolt aircraft. The 354 FW's mission is to train and equip personnel for close air support of ground troops in an arctic environment. The complex combat scenario training requirements and advanced capabilities of the aircraft require large parcels of airspace to train. In Alaska, the Military Operating Areas (MOAs) that are used by these aircraft cover large areas. Military, as well as civilian and commercial aircraft jointly use this airspace. It is imperative that adequate radar and radio coverage for these areas exist to ensure aircraft safety.

There are currently areas within this airspace where radio and radar coverage is not adequate. Complete radar sensor coverage of the entire Pacific Alaska Range Complex airspace at all altitudes is not economically feasible due to the mountainous terrain. However, it is the goal of the USAF to achieve 70 percent coverage at 2,000 feet above ground level (AGL), and 90 percent coverage at 5,000 feet AGL within each MOA. It is also the goal of the USAF to provide ground-to-air radio coverage over at least 90 percent of the Military Operating Areas at 2,000 feet AGL. The USAF considers this to be an operationally acceptable and realistic goal and constructing a communications facility at Snowy Peak will help achieving this standard.

Proposed Action

The proposed action would result in the installation of a communications site on the summit of Snowy Peak. The developed site would consist of three distinct areas including a gravel helicopter pad, a sheltered area containing equipment and three 60-foot towers, and a power generation area containing a wind and propane generator and five 200-gallon propane storage tanks.

Alternatives to the Proposed Action

In addition to the proposed site on Snowy Peak, one other nearby alternative site, NR 1 was considered for analysis in the environmental assessment (EA). NR 1 is an elevated mountaintop that would have similar potential for achieving the line-of-sight radio communications required for proper function of the proposed system improvements. Use of NR-1 as the communication site would, however, require additional repeater antennas to be placed to the east of the mountain to achieve full communication coverage in the eastern and northern MOAs.

No Action Alternative

Under the no action alternative, existing ground-to-air coverage would not be expanded and no additional communications equipment would be installed. This would result in no improvement to air traffic safety in the eastern and northern MOAs that are currently deficient in radio coverage.

Anticipated Environmental Effects

Snowy Peak is an elevated mountaintop that has rocky/gravelly soils that support sparse scrub/shrub and moss/lichen vegetative communities. Facility construction would result in impacts to less than 0.6 acres and would result in some loss of vegetation and minor compaction of soils.

Threatened or Endangered Species

There are no threatened or endangered species in the project area. The project area is not suitable habitat for any of the threatened or endangered species occurring in the Alaskan interior.

Historical and Cultural Resources

No cultural or historic resources are known to exist on Snowy Peak.

Air Quality

The proposed action may result in minor air quality impacts during construction due to fugitive dust and machinery and helicopter exhaust. Such impacts will be highly localized and temporary in nature.

Mitigation

No mitigation was required by state and federal agencies for any aspect of the proposed work.

Public Comment

No public comment was received from the public noticing of the Draft EA/FONSI.

Findings

Pursuant to the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) implementing regulations for NEPA (40 CFR Part 1500-1508), and Air Force Instruction (AFI) 32-7061 *Environmental Impact Analysis Process* (32 CFR Part 989), the Air Force has conducted an EA for the construction of a new communication facility on Snowy Peak. This FONSI has been developed pursuant to information provided in the accompanying EA.

Finding Of No Significant Impact: Based on this EA, which was conducted in accordance with the requirements of NEPA, CEQ, and Air Force Instructions, I conclude the construction of a new radio communications facility on Snowy Peak will not result in significant impacts to the environment. I also find that the preparation of an environmental impact statement is not warranted.



BENNETT M. BITLER
Colonel, USAF
Vice Commander

15 MAY 04

Date

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Installation of a Communications Facility at Snowy Peak, Alaska Environmental Assessment

1.0 Purpose and Need for Action

Section 1.0 provides a description of the purpose and need for the proposed action.

1.1 Background and Objectives for the Proposed Action

1.1.1 The United States Air Force (USAF) is proposing to install a communications facility on Snowy Peak (**Figure 1**) that would provide expanded communication capabilities in Alaska's eastern airspace. The area of coverage would include the following Military Operating Areas (MOAs) Yukon 2, Yukon 4, and Yukon 5 (**Figure 2**). The communications facility would provide improved ground-to-air transmit and receive (GATR) VHF/UHF radio capability within the eastern Pacific Alaska Range Complex (PARC).

1.1.2 The ground-to-air radio system is used to transmit voice and keying signals for both military and civilian aircraft in or near MOAs. This type of communication is extremely important during normal flying conditions, but it is critical during Major Flying Exercises (MFE) when large numbers of military aircraft are flying in interior Alaska airspace as part of the Cope Thunder Exercises.

1.1.3 The Special Use Airspace Information Service (SUAIS) was established by the USAF to enhance the real time awareness of both military and civilian pilots operating in MOAs. Both civilian and military pilots may contact Eielson Range Control and obtain general information about operations of military aircraft in the vicinity and the status of the Special Use Airspace in the region. This service is limited to providing basic information pertaining to the status of operations in an area and is not intended to provide air traffic control services, flight plan filing, or weather information.

1.1.4 The USAF currently has five radar sensor and communication sites that provide Long-Range Radar coverage and communication links within the Pacific Alaska Range Complex airspace as shown in **Table 1**.

Table 1 - Existing Long-Range Radar Sites in the Pacific Alaska Range Complex

	Site	Latitude	Longitude	Radar Nomenclature	Site Operator
1	Hill 3265	64:40:24	146:10:54	TPS-63(V5)	PARC
2	Donnelly Dome	63:47:10	145:51:55	TPS-63(V5)	PARC
3	Murphy Dome	64:57:07	148:21:24	FPS-117	AF/FAA *
4	Ft. Yukon	66:33:39	145:12:34	FPS-117	AF/FAA *

* AF – Air Force FAA – Federal Aviation Administration

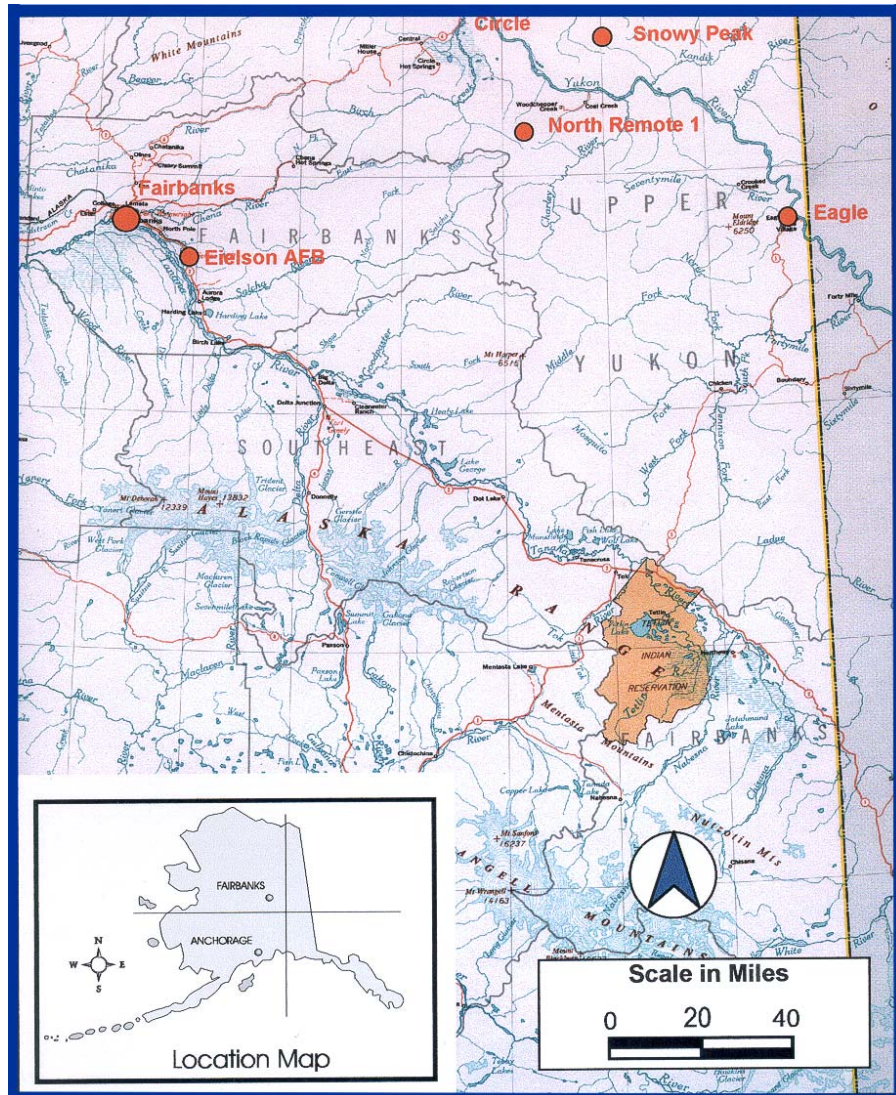


Figure 1 – Project Vicinity Map

1.1.5 The Donnelly Dome and Hill 3265 radar installations (classified as TPS-63s) are used for ground control intercept during military training and by Eielson Range Control for advising both military and civilian aircraft flying in the PARC airspace. The facility at Hill 3265 is scheduled to be upgraded this summer to a TPS-77, which will provide expanded coverage in the eastern interior MOAs.

1.1.6 The radar systems at Murphy Dome and Ft. Yukon (known as FPS-117s) are certified by the FAA for air traffic control, and jointly serve both North American Aerospace Defense and Command and FAA missions. These FPS-117 systems are operated from Elmendorf Air Force Base, and are maintained through a maintenance contract managed by the 611th Air Control Squadron. Data feeds from the FPS-117s are remotely sent from Elmendorf to Eielson via commercial communication lines and are used by Eielson Range Control to support the Special Use Airspace Information Service.

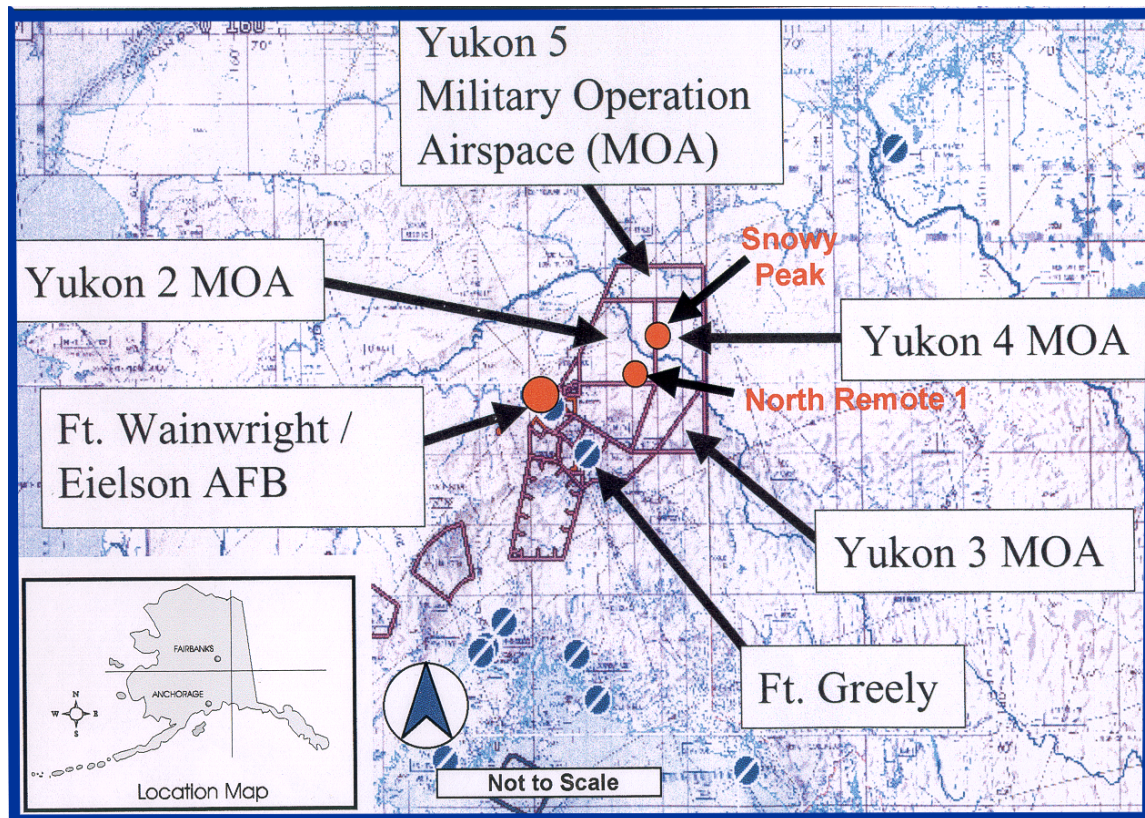


Figure 2 – Military Operating Areas In Vicinity Of Project

1.1.7 Complete radar sensor coverage of the entire Pacific Alaska Range Complex airspace at all altitudes is not economically feasible due to the mountainous terrain. However, it is the goal of the USAF to achieve 70 percent coverage at 2,000 feet above ground level (AGL), and 90 percent coverage at 5,000 feet AGL within each Military Operating Area. It is also the goal of the USAF to provide ground-to-air radio coverage over at least 90 percent of the Military Operating Areas at 2,000 feet AGL. The USAF considers this to be an operationally acceptable and realistic goal. Locating a communication facility link at Snowy Peak will provide significantly improved radio communications in the eastern interior MOAs. **Figure 4** illustrates the coverage deficiencies in the current radio communications systems.

1.1.8 The proposed Snowy Peak communications site would provide ground-to-air communications between Eielson Range Control and aviators flying in the Yukon 2, 4, and 5 MOAs. Presently, Eielson Range Control has limited long-range radar coverage and no ground-to-air radio capability within that portion of the Pacific Alaska Range Complex. The scheduled upgrade of the radar facility at Hill 3265 will greatly enhance radar coverage in these MOAs and siting a communications facility at Snowy Peak will enhance the ground-to-air radio communications for the same areas.

1.1.9 Coverage provided from additional radar and ground-to-air communications systems would also allow the USAF to expand the functional area within the Pacific Alaska Range Complex that is available for training and exercises. Presently, the majority of training and

exercises occurring within the PARC is done in the central airspace (Yukon 1, 2, and the restricted ranges) where there is sufficient radar and radio coverage to track exercise participants. Expanding radar and radio coverage further into the range allows control of more airspace. It is the goal of the USAF to gain FAA approval for Eielson Air Traffic Control of PARC airspace during exercises. Additional radar systems certifiable by the FAA for Eielson Air Traffic Control are required to support this objective. A long-range radar system certified under FAA for air traffic control purposes could also be used to enhance FAA operations.

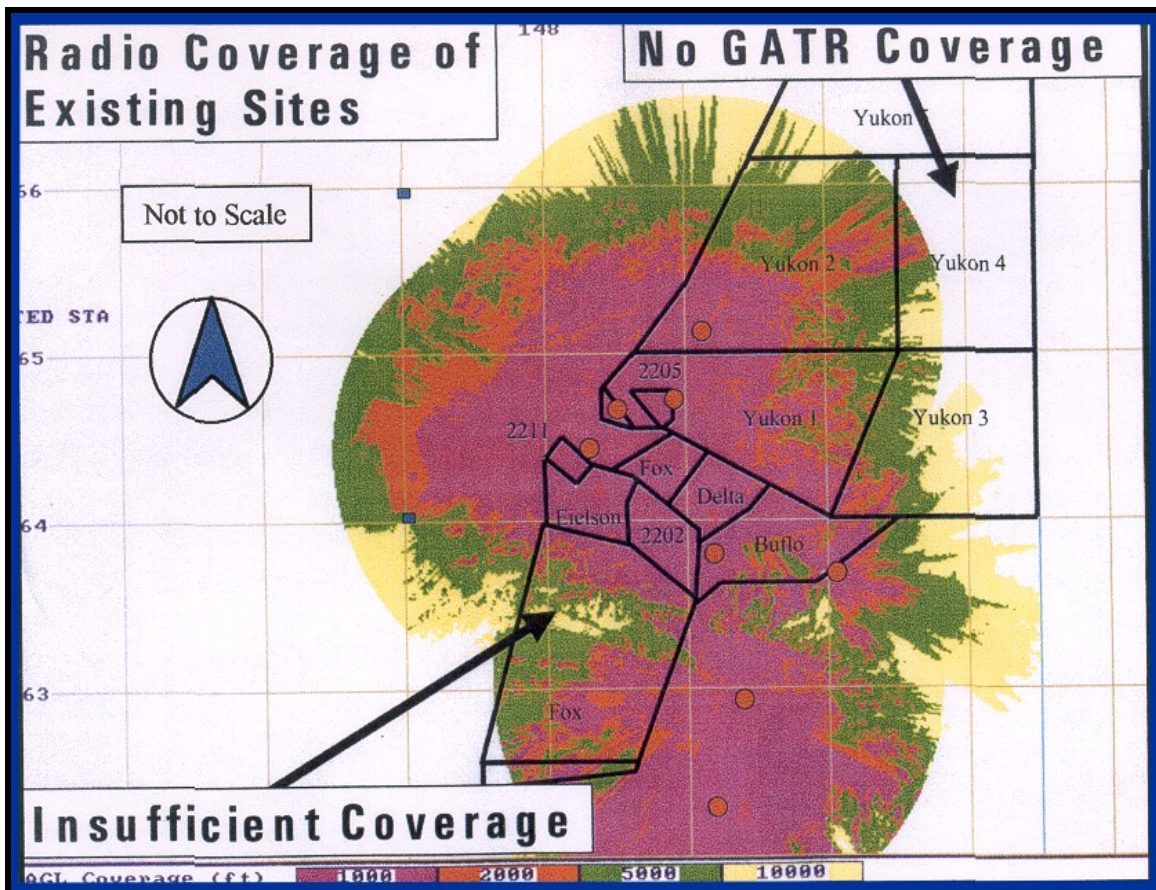


Figure 4 – Existing Radio Coverage

1.2 Location of the Proposed Action

1.2.1 Snowy Peak is located 50 nautical miles east of Circle, Alaska, 20 miles north of the Yukon River, and approximately 144 miles northeast of Eielson AFB (Figure 1). The proposed communications site would be located on the summit of Snowy Peak, which lies 4,273 feet above sea level (Figure 6).



Figure 6 – Location Of Proposed Project

1.3 Alternatives to the Proposed Action

In addition to the proposed action, the following alternatives, including the no action alternative, are considered for analysis in this Environmental Assessment (EA).

1.3.1 Alternative 1 – Installation of a Communication Site at North Remote 1

1.3.1.1 This alternative would install a communications installation on a site referred to by the USAF as North Remote 1 (NR 1). Located eight miles west of Mt. Kathryn, NR 1 is approximately 20 miles south of the Yukon River within the Steese National Conservation Area in the southwest quarter of Section 2, Township 4 North, Range 19 East, Fairbanks Meridian. NR1 is situated near to the border of the Yukon-Charley Rivers National Preserve. In addition to the main communication facility, two additional repeater antennas would need to be placed on

mountain tops to the east of NR 1 to achieve the same coverage in the eastern and northern MOAs as a facility on Snowy Peak.

1.3.2 No Action Alternative

1.3.2.1 Under the no action alternative, ground-to-air radio communications coverage would not be expanded.

1.4 Decision to be Made

1.4.1 As required by Air Force Instruction 32-7061 *The Environmental Impact Analyses Process (EIAP)*, an EIAP must be completed to evaluate potential environmental consequences of the proposed installation of the Snowy Peak communications site. The completion of this EA is intended to satisfy these requirements. The proposed action and all alternatives listed in Section 1.3 are addressed in detail in Chapter 2.0 of this document. A description of the resources located at each of the alternative sites is described in Chapter 3.0 and the impacts that could result from each one are discussed in Chapter 4.0.

1.4.2 Based on the information presented in this analysis, a decision must be made whether or not to implement the proposed action. A Finding Of No Significant Impact (FONSI) will be published if there is a finding of no significant environmental impacts for the proposed action. If it is determined that the proposed action will have significant environmental impacts, another alternative will be chosen for which impacts will not reach the threshold of significance.

1.5 National Environmental Policy Act (NEPA) Actions That Influence This Assessment

Alaska Military Operations Areas-Environmental Impact Statement (EIS) 11th Air Force, 1995. This EIS was prepared to address the environmental impacts of restructuring the Air Force Special Use Airspace in Alaska. This document assesses several issues, including airspace management, biological resources, recreational resources, subsistence, land use, air quality, and noise as they relate to operation of military aircraft.

1.6 Project Scoping/Significant Issues

1.6.1 This section provides a summary of all the issues raised during the scoping process. The scoping process identifies relevant issues and establishes the limits of the environmental analysis.

1.6.2 A scoping meeting was held on September 29, 2000 to discuss the proposed action and the various alternatives. A site visit to Snowy Peak was conducted on October 19, 2000. The meeting and site visit involved Air Force and agency personnel. As part of the scoping process, interested parties, nearby communities and tribal groups were contacted regarding the proposed project. However, the USAF received no responses concerning the proposed action. Section 5 of this document lists the individuals and groups that participated in the scoping process. The topics listed below were issues identified as relevant to the analysis process and will be addressed in detail in this document in Chapters 2, 3, and 4.

1.6.3 *Hazardous Material Releases*: Propane thermo-electric and wind generators would power the proposed communication site. Proposed power systems would be designed to reduce the risk of a hazardous materials release (propane, oil, and antifreeze) associated with operation of generators.

1.6.4 *Air Quality*: Propane and wind generators would operate on a continuous basis and these types of systems do not impact air quality.

1.6.5 *Aesthetics*: Installation of antennas could impact the scenic quality of the project area.

1.6.6 *Wildlife*: Potential impacts include alteration or loss of habitat and unintentional taking of wildlife. Actions such as the installation of antenna towers have the potential to result in avian mortality due to bird strikes on towers.

1.6.7 *Safety*: The USAF expressed concern about the safety of military and civilian aircraft operating in MOAs without adequate long range ground-to-air communications coverage.

1.7 Federal and State Permits or Licenses Needed to Implement the Project

1.7.1. Selection of the proposed action or alternative 1 would result in placement of structures on Bureau of Land Management (BLM) owned lands. Eielson AFB's Real Estate Management Office would be responsible for procuring the necessary land use permit from the BLM to support the selected action.

1.7.2 The USAF would be responsible for procuring the necessary land use permits from appropriate landowners for sites selected as temporary staging areas.

1.7.3 A recent Executive Order (EO) entitled "Responsibilities of Federal Agencies to Protect Migratory Birds" was issued on January 10, 2001. This EO requires federal agencies to develop a Memorandum of Understanding with the U.S. Fish and Wildlife Service (USFWS) and to take certain actions to further implement the Migratory Bird Treaty Act. Actions to be taken under this EO are to include:

- Integration of bird conservation principles, measures, and practices into agency activities by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions.
- Identification of actions where unintentional take is likely to have a measurable negative effect on migratory bird populations.
- Development and use of principles, standards, and practices that will lessen the amount of unintentional take of migratory birds.

2.0 Description of the Proposed Action and Alternatives

Section 2.0 provides a description of alternatives considered to achieve the purpose and need described in Section 1.0. The proposed action, alternative 1, and the no action alternative will be addressed.

2.1 Minimum Requirements Used to Select Proposed Project and Alternatives

The selection of a communications site must meet the following criteria in order to meet USAF operational objectives:

- The site must be reasonably accessible.
- The terrain must be capable of supporting the necessary equipment and have a summit conducive for installation of a communications facility.
- It must have line-of-sight capability to existing radio communications networks.

2.2 Proposed Action – Installation of a Communications Site on Snowy Peak

2.2.1 Installation of the communications site would require the development of a 0.6-acre site located on the summit of Snowy Peak. The actual footprint of facilities would require a total of 0.23 acres. The developed site would consist of three distinct areas with the following components:

- A 1,100-square-foot gravel helicopter pad.
- A shelter deployment area containing one octagonal type equipment shelter housing communication equipment. Building height would be 19 feet and the octagon 18 feet across.
- A 6 Kw Ropatec vertical axis wind turbine and a thermo-electric (propane) generator. Generators would be in shelter and noise levels would be minimal.
- Three, un-guyed, 60-foot antenna towers. Total footprint of approximately 275 square feet.
- A 900-square-foot power fuel storage area containing five 200-gallon above ground propane fuel storage tanks, power distribution equipment, and a generator shelter.

2.2.2 Snowy Peak would be considered a fly-in only site. During the construction period, a secured staging area would be located in Circle, Alaska and all equipment, material, and personnel would be ferried to site via helicopters (CH-47 and Bell 212). The site would be developed as an unmanned communications site and would require maintenance personnel and fuel to be flown in as required, approximately 6 times a year.

2.2.3 Installation of the communication system would consist of five phases:

- System transport
- Site survey and preparation
- Site construction
- Integration of site communications

- System testing

2.3 Alternative 1 – Installation of Communications Site on NR1

Located eight miles west of Mt. Kathryn, NR 1 is approximately 20 miles south of the Yukon River within the Steese National Conservation Area. Site development and system installation methods would be very similar to the proposed action and vary only slightly as site characteristics such as soil depth and terrain variations might dictate.

2.4 Site Development Tasks for the Proposed Action and Alternative 1

Site development and associated tasks for both the proposed action and alternative 1 are presented in **Table 2**. Both sites are remote mountaintops with similar topography and development of the sites would involve similar scenarios, except that NR 1 would need two additional repeater antennas to be placed on ridge tops to the east of the mountain to achieve the same coverage as a facility on Snowy Peak.

Table 2 –Site Development Tasks

System Transport
<ul style="list-style-type: none"> • Haul all equipment, construction materials, and system components via flatbed trucks from Eielson AFB to a secured staging area located in Circle, Alaska. Equipment and construction materials would then be transported to the site via CH-47 Chinook helicopter. A commercial carrier would transport all personnel via a Bell 212 helicopter. • Transport equipment and construction materials from Circle staging area to Snowy Peak. Material transport from the Circle staging area to Snowy Peak is estimated to require 15 round trips using a CH-47 Chinook helicopter over 6 days. An additional 3 days would be required to transport gravel from a material stockpile staging area in Circle. A Bell 212 helicopter support would be required for transporting personnel during the estimated 8 weeks necessary for site prep, construction, integration, and system testing. Helicopter trips for transporting personnel would require approximately 2 round trips daily between Circle and the two sites being considered.
Site Survey and Preparation
<ul style="list-style-type: none"> • Conduct a site survey for layout of facilities. • Take electrical resistance meter readings to measure ground resistance and to determine number of grounding rods to be installed. • Construct 40-foot by 40-foot by 1-foot thick gravel helicopter pad. Gravel would be leveled with loader/backhoe. • Install grounding system. The grounding system would consist of draping on the ground up to 3/8-inch diameter insulated copper cables in a radial fashion. The cables would vary in length depending on soil conditions and the resulting grounding capacities. At the end of each cable, an 8-foot grounding rod would be attached and would be driven into the ground using a pneumatic hammer. All grounding rods

Table 2 –Site Development Tasks

<p>would be attached by a common 3/8-inch diameter insulated copper cable in a ring-type manner to complete the grounding system.</p> <ul style="list-style-type: none"> • Construct structure foundations for facilities on top of the existing ground surface. Ground would be leveled with equipment brought in by helicopter. Structures would be placed on concrete slabs poured in place.
Site Construction
<ul style="list-style-type: none"> • Construct a 275-square-foot instrument shelter to house communication equipment. Five 200-gallon aboveground propane fuel tanks would be placed on concrete slabs with secondary containment area. • Install wind generator, thermo-electric generator, and erect three 60-foot antenna towers.
Integration of Site Communications
<ul style="list-style-type: none"> • Integrate each component, communications equipment, and power distribution into a functioning system. • Establish a data-link on the summit to transmit information back to Eielson. • For use of NR 1 as a facility site, two additional repeater antennas would be placed on selected ridge tops to the east. These antennas would be approximately 20 feet in height and their location would be determined once the main facility was in place and after communication tests were conducted to assess signal strength.

2.4 No Action Alternative

2.3.1 Under the no action alternative, existing communications coverage would not be expanded and would not result in the installation of a communications site.

3.0 Affected Environment

Chapter 3 describes the existing environment and resource components that would be impacted by the proposed project and the alternatives. The resources discussed in this section are presented as a baseline for comparisons of environmental consequences. Unless otherwise specified, resource descriptions in Chapter 3 are regional descriptions that encompass the proposed action and all alternative actions. Resources discussed in the section are as follows:

- Physical Resources, which includes general site location, topography, geology, soils and permafrost, climate and air quality, ground and surface water, wetlands, and infrastructure improvements.
- Biological Resources, which includes vegetation, wildlife, fish, threatened or endangered species.
- Cultural Resources including Archeological or Historical Resources.
- Recreational Resources.
- Socioeconomic Factors.

3.1 Physical Resources

3.1.1 General Site Location

3.1.1.1 The proposed action and alternative 1 are located north and south of the Yukon River respectfully and are within a 50-mile radius of Circle Alaska. Site-specific locations are detailed in Section 1.2 and 1.3 (**Figure 1**).

3.1.2 Topography

3.1.2.1 The proposed action and alternative 1 lie within the central portion of the Upper Yukon physiographic province. This region covers approximately 60,000 square miles in the northwest part of the state. The subregion is drained by the upper Yukon River and its tributaries from the Canadian border west to Rampart, Alaska and includes Hess Creek, Birch Creek, Beaver Creek, Charley River, Porcupine River, Chandalar River, and the upper portion of the Yukon River. The northern boundary of this subregion is the continental divide on the crest of the Brooks Range and the southern boundary is marked by the Tanana River-Yukon River divide. Rounded ridges with gentle slopes characterize the topography to the south with some domes rising to 5,800 feet above adjacent valley floors. Rugged ridges with alluvial outwash fans are common along the northern boundary. The main physiographic features in the central portion are the Porcupine Plateau and the Yukon Flats. The Yukon Flats cover a broad area and consist of marshy, lake-dotted flats rising from 300 feet in altitude on the west to 600 to 900 feet on the north and east. The major topographical features of the sites for the proposed action and alternative 1 are listed in Table 3.

Table 3 - Topographical Features of Alternative Sites

Action	Site Location	Elevation (Feet)	Nearby Drainages
Proposed Action	Snowy Peak	4,273	Three-mile Creek/ Little Black River
Alternative 1	NR1	5,580	Alder Creek/ Yukon Fork South Fork Birch Creek

3.1.3 Geology, Soils, and Permafrost

3.1.3.1 The bedded rocks underlying the Porcupine Plateau are mainly Paleozoic and Mesozoic clastic, carbonate, and volcanic rocks. Some of the sedimentary rocks date to the Precambrian, and some of the youngest volcanic rocks date to the Tertiary period. Near the boundary between the Brooks Range and the Yukon Flats, many of the rocks have been regionally metamorphosed to schist and phyllite. In the eastern part, carboniferous granitic plutons intrude Paleozoic rocks. The Yukon Flats are underlain by alluvial fans, terrace deposits, and lake sediments. The uplands south of the Yukon River are underlain Precambrian to Tertiary metamorphic, sedimentary, and volcanic rocks intruded by granitic plutons. Coal-bearing rocks containing sub bituminous coal can be found in the southern part of the region. Coal beds up to 4 feet thick are present along the Seventymile River. Oil shale occurs in thin deposits on both sides of the Yukon River near the mouth of the Nation River. Geophysical data suggests the area has a low to moderate potential for oil. Both the Chandalar and Circle Mining Districts have known occurrences of gold, iron, titanium, barium, garnet, tin, mercury, tungsten, thorium, silver, lead, copper, zinc, and antimony.

3.1.3.2 Water deposited sands and gravels are found in the flood plain and terraces along the Yukon River valley. Wind blown silts cover low plains and terraces surrounding the flats. Moderate to steep slopes of the highlands, and long slopes south of the Brooks Range, are covered with coarse and fine grained materials. Course rubble deposits and bedrock occupy steep mountain slopes throughout the area. Predominant soil type along the Yukon River consists of well-drained sandy to silty loams. Poorly drained silt loam with thick organic mat and permafrost occupy depressions both north and south of the Yukon River. Poorly drained gravelly, stony, and loamy soils with an organic mat and permafrost can be found on north-facing slopes and many valley bottoms throughout the region. Variations in terrain, vegetation, and climate can affect the presence and thickness of permafrost.

3.1.3.3 Soils on the summit of Snowy Peak (Proposed Action) consist of rock and stony rubble with small isolated pockets of gravelly loam less than 1 inch in depth. Soil found in the vicinity of NR1 (alternative 1) is well-drained shallow silt loam overlying very gravelly loam.

3.1.4 Climate and Air Quality

3.1.4.1 From the Canadian border west to the area surrounding the proposed project, the Upper-Yukon physiographic province is classified as having a continental Subarctic climate. This

climate is characterized by a wide range of extreme temperature changes from summer to winter, large mean annual/diurnal temperature changes, and extreme seasonal contrasts in sunlight duration. The region typically has clear skies and cold temperatures (lows of -60° F, highs of +40° F) in winter and hot (lows of +30° F, highs of +90° F), dry summers. This results in a low relative humidity and a high evaporation rate of surface waters and a high sublimation rate of ice and snow. Annual precipitation averages slightly more than 12 inches. Northwest winds prevail in the Snowy Peak region year-round, channeled along the direction of the Yukon River Valley. The frost-free period is generally from the third week in May until the end of August.

3.1.4.2 The proposed project and alternative 1 sites fall outside the boundaries of any Air Quality Control Region. Existing conditions in the area are assumed to be in attainment with National Ambient Air Quality Standards.

3.1.5 Ground and Surface Water

3.1.5.1 Potential groundwater supply is greatest in the floodplain alluvium along riverbeds and drainages throughout the region. Detailed groundwater data for the region is not available. The major source of groundwater recharge for aquifers is from influent seepage of glacier-fed streams and snowmelt.

3.1.5.2 The entire region is in the Yukon River drainage basin with streams flowing both south and north to the Yukon River. Most streams in the area freeze solid during the winter months and reach their peak flows during June and July. Major tributaries to the Yukon in this region are the Porcupine River, which drains 46,200 square miles, and the Chandalar River, which drains 8,200 square miles. The upper Yukon region has three rivers designated as Wild and Scenic Rivers; the Charley River, Beaver Creek, and Birch Creek. The proximity of Wild and Scenic rivers and Yukon Flats National Wildlife Refuge to sites under consideration is shown in **Table 4**.

3.1.6 Wetlands

3.1.6.1 Wetlands are a predominating physical feature found within the Upper Yukon region. The presence of extensive areas of permafrost has created perched water conditions in many areas, resulting in seasonally persistent moist or saturated soil conditions.

Table 4 – Proximity of Wild and Scenic Rivers/National Wildlife Refuges

Site	National Wild and Scenic Rivers/National Wildlife Refuges	Distance (miles)
Proposed Action- Snowy Peak	Charley River	18
	Beaver Creek	113
	Birch Creek	47
	Yukon Flats Refuge	24
Alternative 1-NR1	Charley River	17
	Beaver Creek	94
	Birch Creek	17
	Yukon Flats Refuge	50

3.1.6.2 The proposed action and alternative 1 are located in uplands. Wetlands are present in the surrounding valley floors.

3.1.7 Existing Infrastructure

3.1.7.1 Proposed Action

The USAF does not currently have any facilities or improvements located on Snowy Peak (**Photo 1**). The site does, however, have a repeater shelter that was utilized by BLM and by the USFWS. The repeater is no longer in service and all communication and electronic equipment has been removed (**Photo 2**).



Photo 1 – Summit of Snowy Peak From The Northwest



Photo 2 – Abandoned BLM Communication Equipment

3.1.7.2 Alternative 1

3.1.7.2.1 The USAF is currently utilizing NR 1 as a repeater site and has an equipment shelter with solar panels, a 30-foot communications tower, and two, 250-gallon propane tanks. The site is owned by BLM.

3.2 Biological Resources

3.2.1 Vegetation

3.2.1.1 The Upper Yukon-Canada region supports a variety of plant communities. Due to the variations in the surrounding terrain, the plant communities vary in relation to slope orientation, changes in elevation, and fire history. Changes in vegetation are also influenced by spatial differences in soil temperature, moisture content, soil fertility, and presence of permafrost. The major plant community types include upland mixed spruce-broadleaf forests; white and black spruce coniferous forests; herbaceous wetlands, and alpine tundra plant communities.

3.2.1.2 Upland mixed spruce-broadleaf forest tends to occur on well-drained sites with little permafrost. This forest type is commonly found on south-facing slopes. Tree species include white spruce, paper birch, quaking aspen, and balsam poplar. Willows, alder, wild rose, blueberry, and high-bush cranberry are common shrubs. Ridge tops with higher elevations usually consist of a tall shrub community characterized by dwarf birch and herbaceous species with widely scattered black spruce.

3.2.1.3 White and black spruce coniferous forests are common throughout interior Alaska. White spruce can be found on well-drained upland and flood plain sites, especially where permafrost is lacking, and on low-elevation slopes with south, west, or east aspects. Black spruce forest tends to occur on poorly drained sites underlain by permafrost. Black spruce forest is common in low-lying areas, drainage basins, and north-facing slopes. Black spruce occurs in closed canopy stands and as scrubby open stands of dwarf trees. Other species commonly occurring in white and black spruce forest type include tamarack, blueberry, low-bush cranberry, Labrador-tea, and feather moss.

3.2.1.4 Herbaceous wetland plant communities occur in poorly drained soils and are typically found where permafrost is present. Low-growing shrubs such as willow and bog blueberry may be present, while some herbaceous wetlands consist primarily of graminoids and sedges.

3.2.1.5 Alpine tundra includes barren lands and is usually found on mountains, ridges, dry river terraces, alluvial fans, or on rubble slopes where bedrock is close to the surface. Characteristic shrubs include resin birch, dwarf arctic birch, crowberry, Labrador-tea, and mountain heath. Herbs present may consist of mountain avens, dryas, lousewort, and fleabane. Graminoids such as bluejoint, Siberian fescue, and sweetgrass may be found along with lichens and mosses.

3.2.1.6 Proposed Action

3.2.1.6.1 Vegetation on the summit of Snowy Peak is sparse with approximately less than 10 percent of the summit covered with vegetation. Vegetation consists of small isolated patches of graminoids, herbs, prostrate shrubs, and lichens (**Photo 4**).



Photo 4 – Vegetation On Snowy Peak Summit

3.2.1.7 Alternative 1

3.2.1.7.1 Vegetation on the summit of NR1 is sparse with approximately less than 10 percent of the summit covered with vegetation. Vegetation consists of graminoids, herbs, and lichens.

3.2.2 Wildlife

3.2.2.1 Large mammals that are likely to be found in nearby habitat include moose, grizzly bear, sheep, black bear, and Barren ground caribou. The 130,000+ Porcupine caribou herd utilizes the Porcupine River drainage and surrounding area as its principle winter range. The 40,000+ Fortymile caribou herd utilizes the area south of the Yukon River. Other furbearers present include wolves, coyote, fox, lynx, arctic snowshoe hare, red squirrel, marten, beaver, mink, and short-tailed weasel. According to the U.S. Fish and Wildlife Service, a resident Dall sheep population is found along the ridgeline and summit of alternate site NR 1, however, Dall sheep are not typically found on Snowy Peak.

3.2.2.2 The Yukon Flats is the most important waterfowl production area in the subregion and encompasses the federal refuge known as the Yukon Flats Wildlife National Refuge. This area of approximately 10,000 square miles is Alaska's largest area of productive habitat and produces an average fall flight of approximately 2.1 million ducks and geese. The numerous lakes and ponds, warm summer temperatures, and periodic drying and flooding of ponds account for this area's high waterfowl productivity. Waterfowl includes American widgeon, lesser scaup, pintail, green-winged teal, white-winged scoters, northern shovelers, canvasbacks, geese, sandhill cranes, arctic loons, grebes, and trumpeter swans. Other migratory birds common to Interior Alaska including gulls, swallows, thrushes, sparrows, warblers, plovers, snipe, and sandpipers can be found in the area. Non-migratory birds include ravens, jays, chickadees, woodpeckers, grouse, and ptarmigan. Raptors include bald and golden eagles, hawks, kestrels, owls, and gyrfalcons (usually above 2,500 feet in elevation). High bluffs overlooking the Yukon River and upper Porcupine and Charley Rivers provide important habitat area for peregrine falcon and other raptors.

3.2.2.3 According to Yukon Charley Rivers National Preserve wildlife biologists, there are no known peregrine nesting sites within one half mile of the summits of Snowy Peak or NR 1. Summits with higher elevations are generally not favored by raptors because of unfavorable weather conditions and lingering snow cover on the summits during hatching time.

3.2.3 Fish

3.2.3.1 The Yukon River is used by king, silver, and chum salmon that migrate upstream to spawning grounds. Important spawning tributaries in the region include the Porcupine, Kandik, Nation, Chandalar, Hodzana, and Charley Rivers, as well as Beaver Creek. The Yukon Flats contain a number of lakes and provide excellent habitat for whitefish and northern pike. Grayling, northern pike, and whitefish are found throughout the main drainage of the Yukon River.

3.2.4 Threatened or Endangered Species

3.2.4.1 There are no known threatened or endangered species within the region or the proposed project area. However, the proposed project site is within the range of the American peregrine falcon (*Falco peregrinus anatum*), which was removed from the list of threatened and endangered species in 1999. Peregrine falcon nests have been located along the high bluffs of the Yukon River approximately 14 miles south of Snowy Peak and 17 miles northwest of NR1 on the Yukon River.

3.2.4.2 Due to its recent recovery from endangered status, the USFWS will monitor the American peregrine falcon on a regular basis for the next decade. If survey data indicate a reversal in recovery, the American peregrine falcon could be emergency listed at any time. Therefore, the USFWS recommends agencies avoid impacts to peregrine falcons to assure a healthy long-term population.

3.2.4.3 No Federal or State listed threatened or endangered plant species have been listed as occurring within the region.

3.3 Cultural Resources

3.3.1 Archeological and Historical Resources

3.3.1.1 Proposed Action and Alternative 1

According to BLM archeologists, there are no known cultural resources within the vicinity of Snowy Peak or NR1.

3.3.1.2 Historical Resources Common to all Alternatives

Numerous rustic cabins and historical remains related to the discovery of gold during the 1880's are present in the area. These occur primarily in the Circle mining district and along the Yukon River and tributaries including Woodchopper Creek located 14 miles northwest of NR1.

3.4 Recreational Resources

3.4.1 Wild and Scenic Rivers

The only Wild and Scenic River in the area of the proposed action is the Charley River designated as wild. Snowy Peak may be visible from the Charley River but from a distance of 18 miles (Seldom Seen Zone) the proposed action would not attract the attention of the casual observer, and thus would not effect the primitive qualities of the wild river designation. Alternative 1 would be visible from both the Charley River (17 miles away) and Birch Creek (17 miles away), both designated as wild rivers under the Wild and Scenic Rivers Act. At that distance (Seldom Seen Zone) however, this alternative would be at such a distance as to not attract the attention of the casual observer, and thus would not effect the primitive qualities of the wild river designation.

3.4.2 Recreational Use

Although there is no data on the number of people who use lands in the surrounding area for outdoor recreation, it is clear that the most popular forms of recreation include canoeing, rafting, hiking, wildlife viewing, photography, snowmobile use, recreational placer gold mining, hunting, trapping, and fishing. Air tour guides also operate throughout the area. Recreational and subsistence hunting of big game species includes moose, caribou, sheep and bear. Hunting of small game includes arctic snowshoe hare, grouse, and ptarmigan.

3.5 Subsistence Resources

There is considerable evidence that areas in the vicinity of both the proposed project and alternative 1 have been used by local native populations for subsistence use. Hunting for moose and caribou and trapping of furbearing animals occurs primarily along river drainages throughout the area. Subsistence use focuses on the summer fish harvest and fall moose, caribou, and black bear hunts.

3.6 Socioeconomic Factors

The proposed communications installation is not located near any population centers that are disproportionately inhabited by minorities or low-income groups. Few population centers exist within the region. The largest community is located in Circle, Alaska and has a year-round population of 90.

4.0 Environmental Consequences

Chapter 4 is organized by resources, with the environmental consequences evaluated for each alternative. This discussion provides a scientific and analytic basis for the comparisons of the alternatives and describes the probable consequences (impacts and effects) of each alternative on selected environmental resources. The effects of each alternative upon each resource are discussed in the same order that they were presented in Chapter 3, beginning with the proposed action. Impacts that are common to all alternatives are stated as such and are addressed in the appropriate sections.

4.1 Physical Resources

4.1.1 Geology, Soils, and Permafrost

4.1.1.1 Impacts Common to the Proposed Action and Alternative 1

4.1.1.1.1 The primary disturbance to soils would result from the installation of the grounding system and placement of gravel pads over soils for the construction of communication facilities. Construction would require three separate gravel pads totaling 2,175 square feet. Gravel pads would be constructed above grade and would not require excavation. All sites under consideration are located in uplands.

4.1.1.1.2 The summits of Snowy Peak and NR 1 consist primarily of rock rubble with small, widely scattered pockets of soil. Installation of grounding rods would be accomplished with pneumatic hammers and would have negligible impact on soils. Construction of gravel pads would disturb relatively small amounts of soil with primary disturbance being compaction.

4.1.1.1.3 As with any activity that involves machinery, there is a chance of fuel and other hazardous materials discharge. During construction of the facility, there will be refueling of construction equipment and handling of lubricants. These materials will be transported by helicopter and handled using procedures that are designed to minimize the risk of spills. In the event of a discharge, spill clean-up equipment will be on-site at all times and a discharge would be cleaned up immediately. If soil were contaminated, it would be removed from the site for cleanup. Once the facility is operational, the risk of discharges will be reduced significantly since the equipment will be powered by propane and a wind generator.

4.1.1.2 No Action Alternative

There would be no disturbance to soils under this alternative.

4.1.2 Climate and Air Quality

4.1.2.1 Impacts Common to the Proposed Action and Alternative 1

4.1.2.1.1 The proposed communication site would be powered by a propane and wind generators. No impacts to air quality would result from these power sources.

4.1.2.1.2 Air quality may be temporarily diminished during construction due to emissions produced by construction equipment and aircraft. Airborne particulate matter in the form of dust emissions may also increase if the construction occurs during dry summer months.

4.1.2.2 No Action Alternative

There would be no changes to the existing air quality under this alternative.

4.1.3 Ground and Surface Water

4.1.3.1 Impacts Common to the Proposed Action and Alternative 1

Other than minor changes to surface runoff patterns, there would be no direct impact to ground or surface waters with the implementation of the proposed action or alternative 1.

4.1.3.2 No Action Alternative

There would be no impact to ground or surface waters with the selection of the no action Alternative.

4.1.4. Wetlands

4.1.4.1 Impacts Common to all Alternatives

Both the proposed action and alternative 1 sites are located in uplands and would not result in impacts to wetlands.

4.1.5 Infrastructure Improvements

4.1.5.1 Impacts Common to the Proposed Action and Alternative 1

The proposed communications installation would meet the USAF objectives and requirements for ground-to-air radio communication coverage and would provide additional training opportunities as a result of increased coverage.

4.1.5.2 Proposed Action

4.1.5.2.1 The proposed communication facility on Snowy Peak would provide radio communications further north within the Yukon 5 MOA than would Alternative 1. Snowy Peak also has the advantage of being a solitary physiographic feature, thus the shadowing effect would be minimized resulting in increased radio coverage.

4.1.5.2.2 Under the proposed action the structures installed on the summit would be visible from the surrounding terrain and to aircraft that operate in the area. The installation of larger structures such as antennas and equipment shelters could impact the scenic quality of the area

and slightly diminish the aesthetics of the surrounding area for recreational users. Snowy Peak is not however, located near any designated Wild and Scenic Rivers or navigable waterways that would attract a higher number of recreational users.

4.1.5.3 Alternative 1 – Installation of a Communications Site on NR 1

4.1.5.3.1 Although the NR 1 site is currently being utilized as a repeater site by the USAF, the installation of a communications facility would require additional equipment and/or upgrading or replacing of existing equipment. However, there may be some components such as the communications shelter that could be utilized and are already in place.

4.1.5.3.2 Structures installed on the summit of NR 1 would be visible from the surrounding terrain and to aircraft that operate in the area. The installation of larger structures such as antennas and equipment shelters could impact the scenic quality of the area and slightly diminish the aesthetics of the surrounding area for recreational users. NR 1 is located within the Steese National Conservation Area, close to the border of the Yukon-Charley Rivers National Preserve. To minimize the visual impact, buildings will be painted a color that will blend, to the extent possible, with the surrounding natural colors.

4.1.5.4 No Action Alternative

This alternative would have no associated costs. However, use of airspace by military and civilian aircraft would continue to pose a safety hazard. The lack of adequate ground-to-air radio coverage would also limit future USAF training opportunities in the northern and eastern portion of the PARC airspace.

4.2 Biological Resources

4.2.1 Vegetation

4.2.1.1 Impacts Common to the Proposed Action and Alternative 1

The summits of Snowy Peak and NR 1 consist primarily of rocky rubble with an estimated 10 percent vegetation cover. Based on this estimate, approximately 0.02 acres of vegetation containing various graminoids and herbs would be lost with the installation of the communications facility. Due to the abundance of similar vegetation types found throughout the area, loss of vegetation would be minimal.

4.2.1.2 No Action Alternative

There would be no loss of vegetation with this alternative.

4.2.2 Wildlife

4.2.2.1 Impacts Common to the Proposed Action and Alternative 1

4.2.2.1.1 Mountain summits are used sporadically by wildlife in the area. Due to lack of adequate forage and other food sources, most species would only occupy these areas on a transitory basis. Due to the minimal site disturbance and the availability of large areas of similar habitat nearby, no direct impacts to wildlife are anticipated with the proposed installation of the communication site. Alteration of migration patterns for species such as caribou is not expected to occur. However, installation of a communications site would require multiple helicopter trips to transport equipment and personnel and could result in temporary disruptions to wildlife movement as typically found during the construction phase of projects.

4.2.2.1.2 Possible impacts to birds could occur with proposed installation of a communication site. Bird collisions with communication towers may result in avian mortality. Violations of the Migratory Bird Treaty Act or the Endangered Species Act, or both, could result if fatalities occurred to protected species. The USFWS has presented evidence that higher mortality rates occur at towers greater than 200 feet aboveground and at towers that are lit with navigational warning lights. The tower used in the action alternatives would be approximately 60 feet high and would likely have minimal interactions with birds due to its location on a mountain peak. As discussed previously, migration corridors for birds and waterfowl are generally at lower elevations.

4.2.2.1.3 The USFWS in cooperation with various support agencies have established recommendations to mitigate avian mortality. Recommendations that are potentially applicable to the proposed action and alternatives are as follows:

- Users should employ and assess radar, acoustic, and ground survey techniques that could be used to determine major migratory corridors or routes (not necessarily flyway-oriented) to avoid siting towers in these areas.
- Local meteorological conditions should be reviewed, and areas with an especially high incidence of fog, mist, and low cloud ceilings should be avoided, especially during spring and fall migrations.
- Avoid siting towers in or near wetlands, near other known bird concentration areas (e.g., National Wildlife Refuges), or in habitat of threatened or endangered species known to be impacted by towers.

The USAF will work closely with the USFWS to determine which recommendations would be appropriate to implement at the Snowy Peak site or its alternative project location.

4.2.2.1.4 The Yukon Flats Wildlife Refuge is located approximately 24 miles northwest from Snowy Peak and 50 miles north of NR 1. Given the site distance from Snowy Peak and NR 1 to the Yukon Flats, impacts to waterfowl habitat are not anticipated. Migration of waterfowl through the area is generally concentrated along the riparian corridor of the Yukon River located approximately 20 miles distant from both sites.

4.2.2.1.2 No Action Alternative

Implementation of this alternative would not result in any loss of wildlife habitat. No changes in wildlife habitat or movement would be expected under this alternative.

4.2.3 Fish

4.2.3.1 Impacts Common to all Alternatives

Implementation of the various alternatives would have no impact on fish habitat. The potential for increased stream sedimentation due to construction activities is low because no fish streams are located in close proximity to the summit areas.

4.2.6 Threatened or Endangered Species

4.2.6.1 Impacts Common to all Alternatives

No known threatened or endangered species inhabit the area, therefore these species would not be impacted by the selection of the proposed action, alternative 1, or the no action alternative. According to Yukon Charley Rivers National Preserve wildlife biologists, there are no known peregrine nesting sites within 4 miles of the summits of Snowy Peak or NR1.

4.3 Cultural and Historic Resources

4.3.1 Impacts Common to the Proposed Action and Alternative 1

According to BLM archeologists there are no known cultural resources within the vicinity of the proposed action and alternative 1 sites; therefore no impacts to cultural resources are anticipated. If during construction there is any finding of archeological evidence, a qualified archeologist would evaluate the site prior to any further disturbance.

4.4 Recreational Resources

Data such as harvest reports, frequency and numbers of recreational users for the area is not available. It is anticipated that recreational use of the area is highest along navigable waterways with summer and fall months having the highest number of recreational users. Implementation of the proposed action or alternative 1 would result in construction of structures that may diminish the scenic quality in the area. Except for limited hunting opportunities, the summits in the area are not considered high use areas; therefore, impacts to recreational users are expected to be minimal.

4.5 Subsistence Resources

Most subsistence activities occur in association with river drainages. Some caribou hunting occurs at higher elevations, but generally short of mountain peaks such as Snowy Peak and NR 1. It is unlikely that any significant impacts would occur to subsistence activities if communication facilities were constructed on either Snowy Peak or NR 1. Occasional helicopter flights to the site of the facility could cause some avoidance by large game such as caribou.

4.6 Socioeconomic Factors

4.6.1 Impacts Common to Proposed Action and Alternative 1

The project area is unpopulated with Circle Alaska being the nearest residential area located 50 miles away. Installation of a communication site may result in short-term economic benefits during the construction phase for some local suppliers, food service, and lodging businesses located in Circle. No other socioeconomic changes are anticipated.

4.6.2 No Action Alternative

No socioeconomic changes are anticipated with this alternative.

4.7 Environmental Justice

4.7.1 Environmental justice, as it pertains to the NEPA process, requires federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. To accomplish these requirements the Air Force must conduct an environmental justice analysis of all potential impacts that may result from the proposed actions.

4.7.2 The closest residential area to this site is Circle located approximately 50 miles to the northwest. No significant environmental or human health issues are expected to affect this community. Based on the environmental impacts identified in this EA and on a corresponding environmental justice analysis, it is felt that no disproportionate impacts to minority or low-income populations would occur from implementation of this project.

4.8 Cumulative Impacts

4.8.1 Cumulative impact is the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Individual actions may result in minor impacts but collectively may result in significant actions taking place over a period of time.

4.8.2 The construction and operation of a communications site is proposed as an improvement to existing communications coverage in Military Operating Areas of the Pacific Alaska Range Complex. Use of the Military Operating Areas for training activities is described in *Environmental Assessment of Major Flying Activities in Alaska* (USAF, 1993) and *Alaska Military Operations Areas-EIS* (U.S. Air Force 1995). Impacts due to construction and operation of a communications site will be cumulative with other impacts caused by the use of the MOAs for training activities.

4.8.3 Cumulative impacts associated with the construction and expansion of various military facilities has been addressed in previous environmental documents. These documents include *Alaska Military Operations Areas-EIS* (U.S. Air Force 1995), *Alaska Army Lands Withdrawal Renewal-Final Legislative EIS, U.S. Army 1998, Ft. Greely, Proposed Resource Management Plan and Final EIS, U.S.D.I., Bureau of Land Management, 1989, Ft. Greely Integrated Natural Resources Management Plan and Environmental Assessment 1998-2002, U.S. Army Alaska, 1999, Fort Wainwright Resource Management Plan and Final EIS, U.S.D.I., Bureau of Land Management, 1989 and Integrated Natural Resources Management Plan 1998-2002, U.S. Army Alaska Volume 3 Fort Wainwright*, and *Integrated Natural Resources Management Plan, Eielson Air Force Base, 1998*. Due to the large land areas involved with the placement military facilities in Alaska, it is felt that no significant cumulative impacts have resulted from these facilities. The current proposed action and alternative 1 would not change this situation.

4.8.4 The Bureau of Land Management has been designated by Congress to be co-land managers with the U.S. Army for lands withdrawn under the Military Lands Withdrawal Act of 1986, which includes the Fort Wainwright Yukon Training Area, and Fort Greely West and East Training Areas. The combined areas contain a substantial portion of Alaska's military facilities. The USARAK and BLM have the joint responsibility of monitoring and documenting land use effects on these lands and to develop Resource Management Plans (RMP). The 1999 RMP's for Fort Greely and Fort Wainwright provide comprehensive discussions of cumulative impacts. These discussions arrive at the conclusion that significant cumulative impacts from military activities have not occurred. Though the proposed project is not located within the Military Lands Withdraw area, similar communications facilities are located in those areas under which determination has been made that significant cumulative impacts have not occurred.

4.8.5 The proposed communications facility would require the development of a 0.6-acre site on the summit of Snowy Peak or NR1. This amount of acreage, when combined with other acreage that has been impacted by comparable activities throughout the eastern Alaska region, is very small. There are other facilities of this type located on other mountain summits, but they are widely scattered and their cumulative effect is not considered significant.

4.9 Unavoidable Adverse Impacts

The unavoidable impacts for implementation of the proposed action or alternative 1 is the loss of 0.02 acres of vegetation. Alteration of the landscape with the addition of communication structures would exist for as long as they were in operation.

4.10 Relationship of Short-Term Uses and Long-Term Productivity

The short-term uses and benefits of the installation of a communication system is that the USAF would receive ground-to-air radio communications capabilities, which presently do not exist in these portions of the Military Operating Areas. This would provide an increase in safety for pilots flying in the area and would enable the USAF to expand the training area that could be used safely. If the facility were no longer needed, the facilities could be removed and the area would eventually be restored. No impacts to long-term productivity would be anticipated.

4.11 Irreversible and Irretrievable Commitments of Resources

Irreversible commitments are those that cannot be reversed, except perhaps in the extreme long term. Irretrievable commitments are those that are lost for a period of time. There are no identifiable irreversible commitments of resources associated with the proposed action or alternative 1. The only irretrievable commitments may be the loss of existing vegetative growth for the installation of the communication site.

4.12 Mitigation

The proposed project would incorporate standard management practices that are designed to mitigate impacts to the environment, and where applicable implement those recommendations by the USFWS to mitigate avian mortality would be appropriate based on project circumstances. Otherwise, no specific mitigation is proposed or required by any state or federal resource agency.

5.0 List of Preparers

5.1 Writers

Lyle D. Gresehover and James Nolke wrote all sections of this Environmental Assessment.

5.2 List of Agencies and Persons Consulted

Person	Agency	Information
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6.0 Bibliography, Glossary, and Attachments

6.1 Bibliography

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6.2 Glossary

Attenuation – The decrease in magnitude of current, voltage, or power of a signal in transmission between two points. This may be expressed in decibels.

Electromagnetic Interference – Any induced, radiated, or conducted electrical transmission, disturbance, or transient that causes undesirable responses, degradation in performance, or malfunctions of any electrical or electronic equipment, device, or system. Also synonymously referred to as radio frequency interference.

Erosion – The wearing away of soil or organic matter by flowing water or wind.

Footprint – The maximum area required for the firing of weapons or detonation of munitions.

High-Frequency Active Auroral Research Program (HAARP) – The HAARP is a congressionally initiated program jointly managed by the U.S. Air Force and U.S. Navy. The program's purpose is to provide a research facility for conducting ionospheric phenomena. The data obtained from the research is used to analyze basic ionospheric properties and to assess the potential for developing ionospheric enhancement technology for communications and surveillance purposes.

Loess – Unstratified deposits of silt and loam that are primarily deposited by the wind.

Mitigate – To reduce or negate the effects of an environmental disturbance.

NORAD – A binational command involving the United States and Canada which provides warning of missile and air attack against both of its member nations, safeguards the air sovereignty of North America, and provides air defense forces for defense against an air attack.

Permafrost – Permanently frozen subsoil.

Physiographic – A region containing the same general natural characteristics.

Recharge – Surface water which percolates through porous soils to become part of the ground water.

Upland – The higher parts of a region or tract of land.

Wetlands – Areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support vegetation typically adapted for life in saturated soils conditions.

7.0 Public Notice

**USAF ANNOUNCES
an
ENVIRONMENTAL ASSESSMENT**

In accordance with the National Environmental Policy Act (NEPA), and Air Force Regulations, Eielson Air Force Base has completed a Draft environmental assessment (EA) and Finding of No Significant Impact (FONSI) to evaluate the consequences of the following stated proposed action:

Construct a radio communications facility on the summit of Snowy Peak, Alaska. The site would be accessible by helicopter only and consist of 3 distinct areas, including a helicopter pad, a communication equipment shelter, and a power generating system. The power system would consist of a wind generator and a backup propane fired generator.

PUBLIC COMMENT WELCOME

To review the draft EA and FONSI, copies are available at the Noel Wien Library in Fairbanks. The public is invited to review these documents and make comments during the 30-day comment period from now until June 8, 2004. To get a copy of the EA, to comment, or for more information contact Maj. Valerie Trefts, 354 FW/Public Affairs, at (907) 377-2116, 354th Broadway Street, Suite 15A, Eielson AFB, AK 99702-1830.