

**FINDING OF NO SIGNIFICANT IMPACT (FONSI)**  
**And**  
**FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)**  
**for the**  
**Expansion of Mullins Pit**

**Introduction**

Each year a significant amount of construction occurs on Eielson Air Force Base (Eielson AFB) as new facilities are built and existing ones are repaired or improved. To meet the construction material demands of these projects, Eielson AFB has made available gravel material sources on its lands. They provide a ready source of classified material for project construction, saving the Air Force hundreds of thousands of dollars annually in construction costs. To further support this program Eielson AFB is proposing to expand the existing Mullins Pit gravel mine to provide additional gravel material for scheduled projects.

**Description of the Proposed Action**

The proposed action will develop an additional 98.64 acres of black spruce wetlands for the purpose of providing gravel, topsoil, and unclassified fill material for base construction projects. This would constitute a major expansion of the existing Mullins Pit gravel facility and would generate approximately 657,424 cubic yards of gravel, 79,570 cubic yards of topsoil, and 397,894 cubic yards of unclassified fill that could be used for construction purposes on base.

**Alternatives to the Proposed Action**

Two other alternatives were identified for this project. Alternative 1, would utilize the newly opened Cathers Lake Pit for all future base gravel, topsoil, and unclassified material needs. This pit is on the north end of the base and would result in haul distances that would be at least twice the distance from Mullins Pit for projects on the south end of the base. Alternative 2 would require that the base purchase gravel from off base for all construction projects. The closest source is in Moose Creek, approximately 3 miles north of the base gate.

**No action alternative**

The no action alternative would result in no additional expansion of Mullins Pit. Currently there is available approximately a 2-year supply of previously mined gravel available at Mullins Pit and Cathers Lake combined.

**Environmental Impacts of the Proposed Action**

**Wetlands**

The proposed project will result in the loss of 98.64 acres of black spruce wetlands. These wetlands provide moderate to low value habitat for several species of wildlife. Due to the preponderance of this type of wetlands in the area, wildlife currently using the wetlands will, in most cases, be displaced to adjacent habitat, likely resulting in population level impacts to a limited number of small mammal species such as voles and shrews.

**Biological Resources**

# Report Documentation Page

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Impacts to biological resources from the proposed project are expected to result mainly from the loss of wetland vegetation in the 98.64-acre footprint of the project. This vegetation provides habitat for a variety of small mammals and birds. Several species of passerine birds use this habitat for nesting and brood rearing. In most cases, the birds will be displaced to similar adjacent habitat.

As Mullins Pit is excavated and portions of the pit are rehabilitated in accordance with guidelines developed in conjunction with interested resource agencies, habitat values will be reestablished in the area that will likely exceed those that existed prior to pit development. Habitat types include deep-water fish over wintering habitat, shallow lacustrine areas with submergent and emergent aquatic vegetation, and riparian tall shrub habitat.

### **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 or Cultural Resources**

Most archeological sites on Eielson AFB lands have been identified and mapped. The Proposed Project is not associated with any known sites. In the event that historic or cultural sites are discovered during project construction, activities will be halted and a professional archeologist will evaluate the find.

### **Air Quality**

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

### **Mitigation**

Mitigation was required by federal agencies and has been incorporated into the overall project design.

### **Public Comment**

No public comment was received from the public noticing of the EA/FONSI/FONPA or the Corps of Engineers Permit for this project.

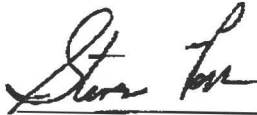
### **Findings**

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 32-7061, *Environmental Impact Analysis Process (EIAP)* (32 CFR Part 989), the Air Force has conducted an EA for the Mullins Pit gravel mine. This FONSI/FONPA has been developed pursuant to information provided in the accompanying EA.

**Finding Of No Practicable Alternative:** Eielson AFB is an Air Force facility that operates, maintains, and trains combat forces in close air support of military operations worldwide. Eielson AFB must have adequate sources of construction materials to build and maintain base facilities.

Taking all the environmental, economic, and other pertinent factors into account, pursuant to Executive Order 11990, the authority delegated by SAFO 780-1, and taking into consideration the submitted information, I find that there is no practicable alternative to this action and the Proposed action includes all practical measures to minimize harm to the environment.

**Finding Of No Significant Impact:** Based on this environmental assessment, which was conducted in accordance with the requirements of NEPA, CEQ, and Air Force Instructions, I conclude the expansion of Mullins Pit will not result in significant impacts to the environment. I also find that the preparation of an environmental impact statement is not warranted.



\_\_\_\_\_  
Vice Commander, Pacific Air Forces

*28 May 2003*

\_\_\_\_\_  
Date

*Environmental Assessment*

for the

**Expansion of Mullins Pit**  
**Eielson Air Force Base, Alaska**

**354th Fighter Wing**  
**April 2003**



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WILLIAM M. CORSON, Colonel, USAF  
Director, Installations and Mission Support

\_\_\_\_\_  
Date

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## 1.0 Purpose and Need for Action

Section 1 provides a description of the purpose of and need for the proposed action.

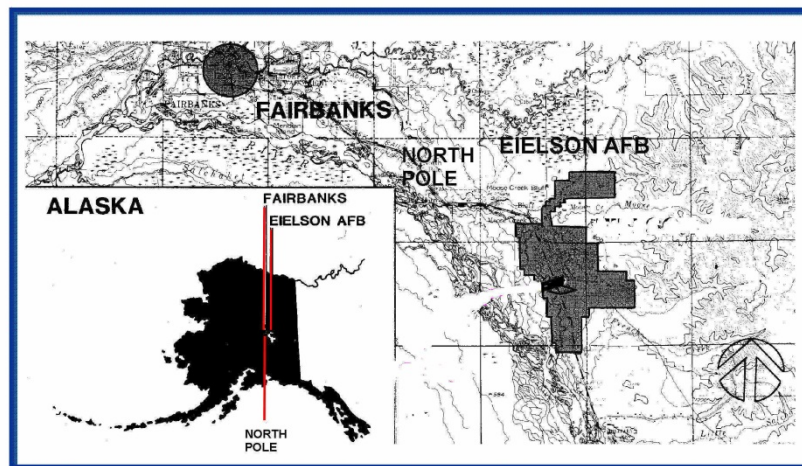
### 1.1 Objectives for the Proposed Action

1.1.1 The host unit at Eielson AFB, the 354th Fighter Wing (FW), operates F-16 Fighting Falcon aircraft and A/OA-10 Thunderbolts. The 168th Air Refueling Wing (ARW) is also based at Eielson AFB and currently flies KC-135 aircraft.

1.1.2 Eielson AFB was established in 1944 and is currently part of the Pacific Air Forces (PACAF) Command. The 354 FW operates, maintains, and trains combat forces in close air support and interdiction missions in support of the war plans in three operational theaters. The 354 FW's mission is to train and equip personnel for close air support of ground troops in an arctic environment. The 168 ARW is the primary tanker unit of the Pacific Rim, annually transferring over 17 million pounds of fuel in flight to predominantly active duty aircraft.

1.1.3 The developed portion of Eielson AFB is primarily an area filled by gravel to elevate potential building sites above the 100-year floodplain of nearby watersheds. In addition, more than 90 percent of lands that constitute Eielson AFB lands were at one time wetlands. Gravel was also placed to provide a non-frost susceptible substrate for facility construction on wetland soils. During the 2002 construction season, base projects required more than 125,000 cubic

#### REGIONAL AND BASE LOCATION MAPS



**Figure 1-1 – Location Map**

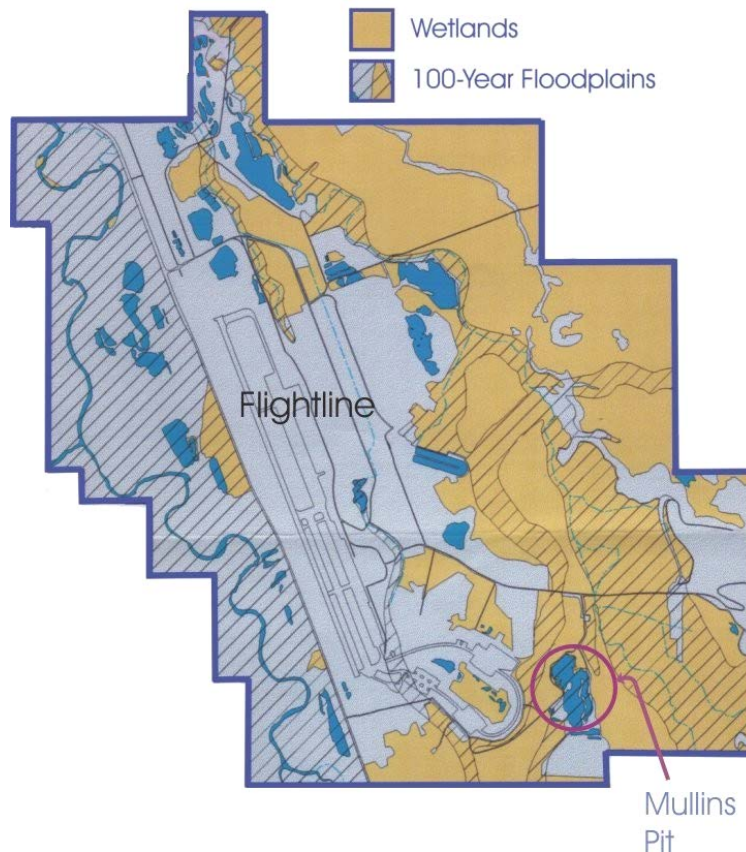
yards of gravel. This gravel is mined from on-base gravel pits, saving Eielson AFB millions of dollars annually in construction costs. Currently, there are two gravel pits supplying construction material on Eielson AFB. Mullins Pit located on the south end of the base and

Cathers Lake, a pit on the north end of the base. Cathers Lake was opened up in 1998. An EA/FONSI/FONPA for this project entitled *Development of a Gravel Pit on the North End of Eielson Air Force Base (1997)*.

1.1.4 Gravel is transported from these pits to construction sites by trucks. The farther the trucks must travel, the more expensive the gravel costs for construction becomes. To avoid excessive gravel costs, gravel sources were developed on both ends of the base, reducing travel distance to a minimum. The projected gravel needs for this years construction will be in excess of 150,000 cubic yards.

## 1.2 Location and Background of the Proposed Action

1.2.1 Eielson AFB is located within the Fairbanks North Star Borough, approximately 120 miles south of the Arctic Circle and 23 miles southeast of Fairbanks (**Figure 1-1**). Eielson AFB is located in the Tanana River Valley on a low, relatively flat, floodplain terrace that is approximately 2 miles north of the active river channel. Other communities near Eielson AFB include Moose Creek to the north, and the Salcha area to the south of the base.



**Figure 1-2 – Project Location and Adjacent Wetlands**

1.2.2 Base lands include 19,790 contiguous acres bounded on the west by the Richardson Highway and on the north and east by Army lands (Yukon Training Area). To the south, the community of Salcha borders Eielson AFB. Of the total base acreage, over 60 percent are designated as wetlands. Of the remaining undeveloped portions of the base, 79 percent are wetlands (see **Figure 1-2**). As a consequence, planning and utilization of Eielson AFB lands becomes very difficult if one is to entirely avoid siting facilities and conducting activities in wetlands and 100-year floodplains.

1.2.3 The proposed Mullins Pit project is located in the southern portion of the main base, immediately east of the Loop Taxiway. In the early 1970's, a pit was dug for the purpose of extracting gravel for construction of base projects. This was prior to the implementation of Clean Water Act, Section 404 wetlands regulations, and no wetlands permit was required. In 1989, it was proposed to expand the pit to provide for more construction material. A Section 404 wetlands permit was obtained and an environmental assessment (EA) was written. A Finding Of No Practicable Alternative (FONPA) was not prepared for the project, however, as it was not yet required by Air Force regulations.

1.2.4 Currently, there is a need to expand the pit by increasing the area permitted for gravel extraction by an additional 98.64 acres. A wetlands permit is needed for this proposed expansion. In addition, a new EA and FONPA are being prepared for this proposed project since one has not been done for previously completed work associated with this facility.

### **1.3 Proposed Action**

The Proposed action would result in the development of an additional 98.64 acres of black spruce wetlands for the purpose of providing gravel, topsoil, and unclassified fill material for base construction projects. This would constitute a major expansion of the existing Mullins Pit gravel facility. Expansion of the pit would generate approximately 657,424 cubic yards of gravel, 79,570 cubic yards of topsoil, and 397,894 cubic yards of unclassified fill that could be used for construction purposes on base. In addition to the extraction of construction material, the pit would be reclaimed and turned into a recreational and wildlife facility that would provide habitat for fish and other wildlife species. Specific design enhancements would be incorporated into the rehabilitation process, including shallow littoral zones, irregular shorelines, islands, and peninsulas.

### **1.4 Alternatives to the Proposed Action**

#### **1.4.1 Alternative 1 - Use Cathers Lake as a source for all base construction material.**

This alternative would utilize the newly opened Cathers Lake for all future base gravel, topsoil, and unclassified material needs. This pit is on the north end of the base and would result in haul distances that would be at least twice the distance from Mullins Pit. Since truck haul distances are a major factor in determining material costs, it is likely that if material were obtained from Cathers Lake for projects in the south half of the base, the cost would double.

### **1.4.2 Alternative 2 – Obtain gravel, topsoil, and unclassified material from an off-base source.**

This alternative would require the purchase and transport of gravel, topsoil, and unclassified material from gravel mining operations in the Moose Creek or North Pole area. This would result in transport distances that would exceed those from on-base gravel sources. In addition, the material would have to be purchased, whereas on-base material has no cost except for the mining process and the hauling cost.

### **1.4.3 No action alternative**

The No action alternative would result in no additional mining occurring at Mullins Pit other than that which has been authorized under previous wetland permits.

## **1.5 Decision to be Made**

1.5.1 As required by Air Force Instruction 32-7061, an *Environmental Impact Analysis Process* must be completed to determine what are the environmental consequences of the proposed expansion of gravel mining operations at Mullins Pit. The completion of this EA is intended to satisfy these requirements. The proposed action and all alternatives listed in Sections 1.3 and 1.4 will be addressed in detail in Chapter 2.0 of this document. A description of the resources associated with the areas affected by all alternatives will be provided in Chapter 3.0 and the impacts that could result from each one are discussed in Chapter 4.0.

1.5.2 Based on the evaluation of impacts in the EA, 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.

1.5.3 The EA, a draft FONSI (if applicable), and all other appropriate planning documents will be provided to the Pacific Air Forces (PACAF) Vice Commander, the decision maker, for review and consideration. If, based on a review by the decision maker of all pertinent information, a FONSI is proposed, a notice of intent (NOI) will be published in accordance with 40 CFR 1506.6. All interested parties will have 30 days to comment on the decision to the Air Force. If, at the end of the 30-day public comment period, no substantive comments are received, the decision maker will sign the FONSI.

1.5.4 Two Executive Orders (EOs), 11988 and 11990, require the heads of federal agencies to find that there is no practicable alternative before the agency takes certain actions impacting wetlands or floodplains. The proposed action would potentially impact both types of resources. To address this requirement, the Secretary of the Air Force's designated agent, HQ PACAF/CV will sign a document that addresses the issues of wetlands and floodplains that may be associated with actions the Air Force proposes to take. This document, known as a FONPA, will state which alternative, the proposed action, one of the two action alternatives, or the no action

alternative, will be selected as the appropriate course of action. The FONPA will be combined with the FONSI into one document. It will contain documentation that there are no practicable measures to minimize harm to wetlands and/or floodplains, and that all appropriate mitigation will be incorporated into the project design or otherwise authorized.

### **1.6 Project Scoping/Significant Issues**

This section provides a summary of all issues raised during the scoping process considered significant enough to be addressed in the EA. The scoping process typically involves meeting with potentially interested parties, including state and federal regulatory agencies that have oversight authority, and base groups that have responsibility for overseeing the development and operation of gravel pits on base. As a result of soliciting input from agencies, several meetings were held to discuss issues associated with the project. The agenda and attendees are found in **Appendix A**. The following were issues identified as part of the scoping process:

1) *A new gravel source needs to be expanded for construction projects at the south end of the base.* The cost of hauling gravel is significant. Hauling distance is an important factor in the cost of a construction project and locating gravel sources strategically at both the north and south end of the base is important. If Mullins Pit is not expanded now, gravel for future projects will not be available in the south portion of the base.

2) *Mitigation for the loss of nearly 100 acres of black spruce wetlands is required by resource agencies.* The US Fish and Wildlife Service considers the losses to be significant enough that some mitigation is required. In the past, wetland losses have been offset by reclamation of the gravel pit upon completion of the gravel mining operation. This will again be the mitigation proposed by Eielson AFB however, there were extensive discussions as to what form this pit reclamation would take.

### **1.7 Federal, State, and Local Permits Needed for Project Implementation**

The proposed action would require an Army Corps of Engineers 404 wetlands permit.

## 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, two action alternatives, and the no action alternative are addressed.

**2.1 Criteria Used to Develop Alternatives and Project Design.** There are criteria that must be considered for an action alternative to be included for analysis in this EA.

**2.1.1 *Flight/Pilot Safety:*** Gravel operations in the vicinity of the flight line must consider the impact it might have on flight safety due to the attraction by birds to open water areas. The single most important factor to consider in this respect, is the affect the borrow pit and subsequent lake would have on bird movement. Bird/aircraft strikes can be very serious, resulting in significant damage to aircraft, and worst of all, cause crashes and loss of life. Geese have been identified as having the potential to have the most serious consequence to pilot safety. This is due to the large size of the bird and, especially during the fall migration, the great number of geese on and around Eielson AFB.

**2.1.2 *Fish and Wildlife Habitat:*** Gravel borrow pit operations change habitat. Although a change is unavoidable, generally the habitat created as a result of borrow pit operations is a matter of design and can generally result in a net gain in habitat value.

**2.1.3 *Wetlands and Floodplains:*** Much of the area surrounding Eielson AFB is wetlands and/or 100-year floodplains. The issue becomes, if the wetlands and/or floodplains cannot be avoided, what measures can be taken to minimize the impacts to those wetlands that are affected?

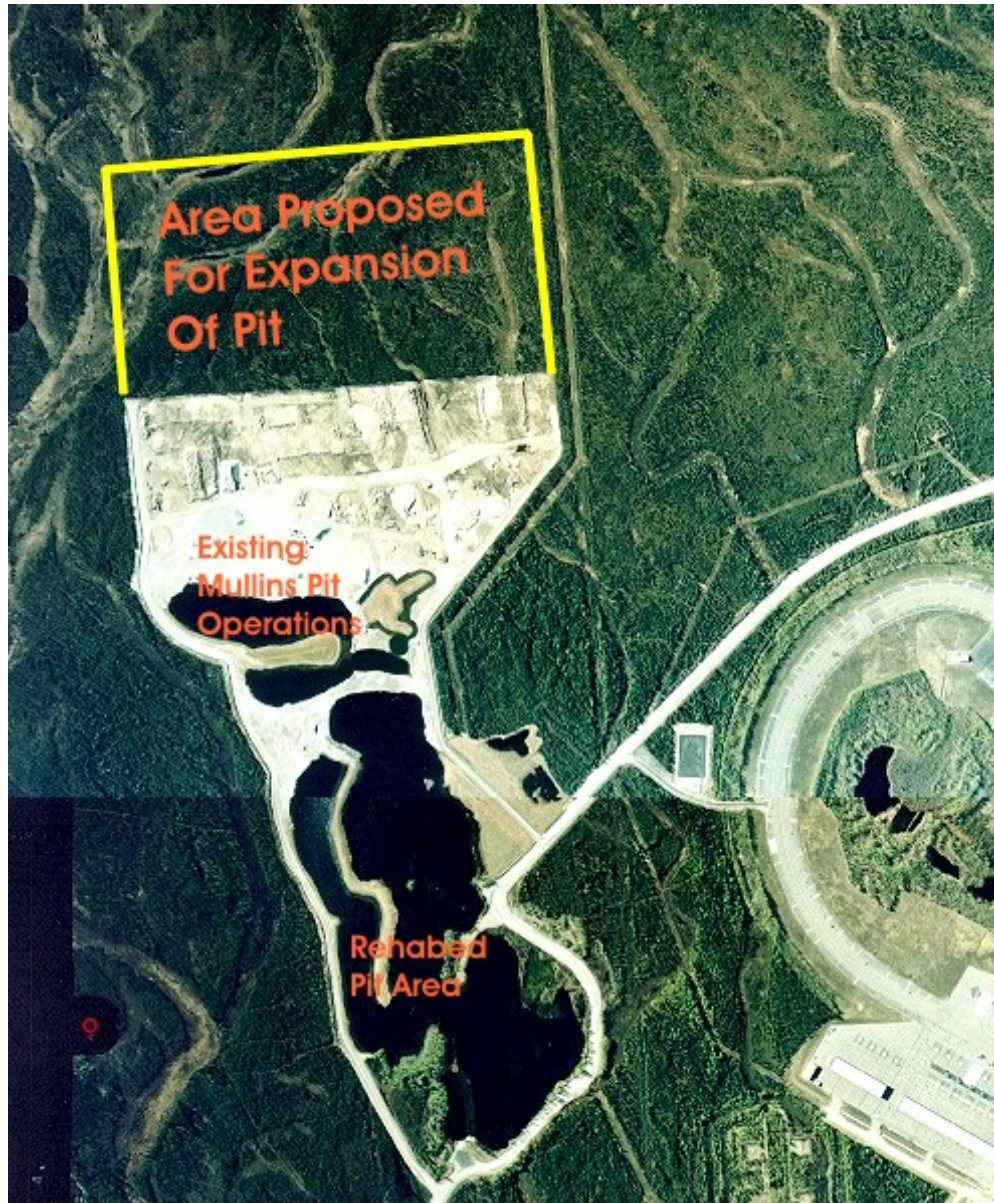
**2.1.4 *Economics:*** Although not an environmental issue, the cost of producing construction material for base projects is an important factor in determining which alternatives can be considered.

## 2.2 Proposed Action

2.2.1 The proposed action would result in the following work being undertaken at Mullins Pit:

- Hydro-axe all vegetation on the 98.64-acre site. Collect and stockpile all vegetation for use in creating islands and peninsulas in the rehabilitated pit area. Hydro-axed vegetation used in this manner would be covered with soil to encourage revegetation of filled areas.
- Shorelines created during gravel removal operations will be irregular in shape, with points and coves, deep-water areas, and wide shallow water areas adjacent to the shoreline.
- The gravel pit will be excavated in a manner that will create at least one deep basin that will have a minimum depth of 30 feet. The perimeter shelves of the pit will, upon

completion of the gravel mining and subsequent rehabilitation work, be a minimum of 20-foot-wide and not exceed a slope of 7:1.



**Figure 2-1 – Proposed Mullins Pit Expansion**

- As the pit area is developed, overburden will be segregated and stockpiled for use as a construction material. A minimum of 50 percent of the material will be used for spreading into the littoral zone of the reclaimed pit during the pit rehabilitation process. The overburden layer placed in the littoral zone will be approximately 6 inches thick.

- Development of the newly authorized pit expansion area will be developed and reclaimed in cells. The cell size will be determined by project specific needs as developed in conjunction with base construction plans and schedules. Cells will be mined so that a minimum depth of 30 feet would be achieved. Cell development will be programmed in accordance with demonstrated material requirements based on anticipated base project needs.
- A minimum of 10 acres of tall shrub habitat would be established adjacent to the reclaimed pit area. This habitat would be at least 80 feet wide.

### **2.3 Alternative 1 – Use Cathers Lake as a gravel source for all base construction.**

2.3.1 Cathers Lake is an existing gravel pit located on the north end of the base off Transmitter Road. At the present time areas of the pit that have been developed and could provide gravel for all base projects. Based on annual base gravel requirements of 150,000 cubic yards the pit could provide material for 2 years. Beyond that amount, the pit would have to be expanded in a manner similar to that, which is proposed for Mullins Pit.

2.3.2 The reason that two base gravel pits are operating at the same time is the result of the cost efficiency that is achieved by reducing the travel distance required to haul gravel for a given project. Projects closer to the north end of the base are supplied by the Cathers Lake pit and those in the south end of the base are supplied by Mullins Pit. If only one pit were available to supply all projects, project costs for gravel would increase significantly for many projects as a result of the increased haul distances.

### **2.4 Alternative 2 – Obtain project gravel material from off-base sources.**

2.4.1 Eielson AFB is located in the floodplain of the Tanana River and as a result alluvial gravels near the surface are relatively common. Under this alternative, the base would purchase gravel material from a commercial gravel operation near the base. At the present time, the closest operating gravel mine is in Moose Creek, about three miles by road from the base gate.

2.4.2 As previously pointed out, the further gravel must be hauled for use, the more expensive the material becomes. This is primarily a function of truck hauling and its associated costs. However, in addition to the haul cost associated with off-base gravel purchase, there is the cost of the gravel itself. Gravel material mined on base has no cost except to haul it to the project site. Gravel obtained off base has a minimum cost of \$1 per cubic yard.

### **2.5 No action alternative**

This alternative would result in no additional expansion of Mullins Pit. Currently, there is about a 2 year supply of gravel available from the combined previously developed portions of Mullins Pit and Cathers Lake. Once this gravel is exhausted, Eielson AFB would have to purchase gravel from an off-base source or expand Mullins Pit and/or Cathers Lake gravel pits.

### **3.0 Affected Environment**

This section describes relevant resource components of the existing environment that might be impacted by the proposed project and its alternatives. Only environmental components relevant to the issues and objectives of this EA are described.

#### **3.1 Physical Environment**

Eielson AFB encompasses approximately 19,790 acres and is isolated from major urban areas. The portion of Eielson AFB that contains the project areas associated with the proposed action and alternative 1 lies on the abandoned floodplain of the Tanana River, with elevations ranging from 525 to 550 feet above Mean Sea Level (MSL). The surface of the floodplain is relatively smooth and slopes gently downward to the northwest at a gradient of about 6 feet per mile.

##### **3.1.1 Geology**

The area in the vicinity of Eielson AFB was not glaciated during the last ice age. The majority of the subsurface geologic formations of the central plateau of Alaska are primarily from the Permian and Devonian periods of the Paleozoic era. The hills to the northeast of the base are composed of Precambrian and Paleozoic-age schists, micaceous quartzites, and subordinate phyllite and marble. These formations have been locally intruded by a series of Cretaceous lower tertiary intrusions.

##### **3.1.2 Soils**

Soils in the Tanana River Valley consist of unconsolidated silty sands and gravels, organic and sandy silts, and clays. Floodplain soils nearest the active channels are sandy with a thin silt loam layer on the surface. On higher terraces, the soils become predominately silt from the Salchaket series. Along older river terraces, silt loam soils, which contain significant organic components, often dominate. These soils tend to be cold and wet and are generally underlain by permafrost. Approximately two-thirds of Eielson AFB is covered with soils containing discontinuous permafrost. This preponderance of permafrost soils contributes to the large percentage of vegetated wetlands occurring on undeveloped base lands.

##### **3.1.3 Groundwater**

Eielson AFB is located over a shallow unconfined aquifer. The aquifer is approximately 250 feet thick, extends to bedrock, and has a regional gradient of about 5 feet per mile flowing to the north-northwest. The water table varies from the surface in adjacent wetlands to 10 feet below ground level in developed areas. The base uses the local aquifer for its drinking water and monitors groundwater quality in a number of locations as part of its Installation Restoration Program. Localized contamination of the aquifer has been identified in the industrial area of the base, but the overall quality of groundwater at Eielson AFB is good.

### 3.1.4 Surface Water

3.1.4.1 Aquatic bodies on Eielson AFB include streams, wetlands, and lakes. There are approximately 28 miles of streams; 10,133 acres of wetlands; 12 lakes (Lilly Lake is natural and the remaining 11 are man-made); 80 ponds (10 naturally-occurring and 70 man-made) totaling 560 acres; and 6,770 acres of floodplains on the main base. The man-made lakes and ponds were created during the excavation of gravel deposits for use as fill material for construction projects on base. Surface drainage on Eielson AFB is generally in a north-northwest direction and parallel to the Tanana River. Five streams flow through the base and discharge into the Tanana River via Piledriver Slough.

3.1.4.2 Approximately 51 percent, or 10,133 acres, of Eielson AFB is classified as wetlands, with 9,391 acres being vegetated wetlands and the remainder being lakes, ponds, and streams. Wetlands and low gradient alluvial streams comprise most of the surface water resources on Eielson AFB, with wetlands dominating the low-lying areas within and surrounding the installation. Most wetland areas were created as a result of surface waters becoming trapped in the thawed layer over the permanently frozen subsurface (permafrost). Flood periods tend to occur during spring snowmelt and during the middle to late summer, when heavy rains or warm air quickly brings glacier fed mountain streams to flood capacity. Several lakes and extensive wetlands surround the airfield in the cantonment area. Among these are Bear, Polaris, Moose, Hidden, Pike, Rainbow, Scout, Grayling, and Tar Kettle lakes. Creeks that can be found in the vicinity of the airfield include French and Moose creeks.

3.1.4.3 Piledriver and Garrison sloughs are the two largest streams in the vicinity of the airfield. Piledriver Slough, which discharges into the Tanana River, is located along the western edge of Eielson AFB and approximately 4,000 feet west of the airfield and parallel to the runways. Approximately 12 miles of Piledriver Slough occurs on Eielson AFB. The slough receives no runoff from the urban developed area of the base and has good water quality.

### 3.1.5 Noise

Aircraft generate by far the most noise on Eielson AFB. Noise levels associated with aircraft during flying hours can exceed 80 decibels (dB) in the vicinity of the flight line; however, the decibel level drops off to a maximum of 70-dB in the closest residential area, Moose Creek, just north of the base. A 65-dB level is not recommended for housing areas by EPA standards (Noise Effects Handbook, US EPA, 1981). Construction noise is potentially another source of noise, but it is not considered to be a concern due to its temporary nature and relatively low dB level. **Figure 3-1** is a chart that provides a scale of noise levels associated with typical daily activities.

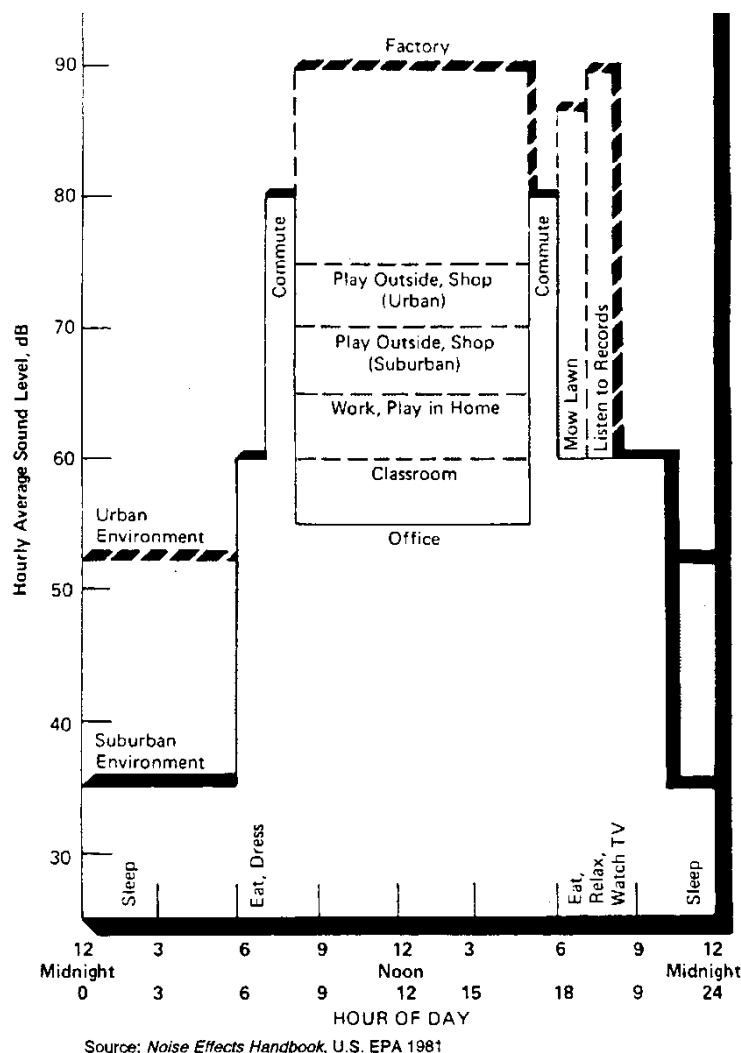


Figure 3-1 - Noise Levels

### 3.1.6 Air Quality

Air quality is generally good at Eielson AFB. Although portions of the North Star Borough, of which Eielson AFB is also a part, are in non-attainment for carbon monoxide (Fairbanks and North Pole), Eielson AFB is far enough south to not be included or affected. The Clean Air Act designates areas as attainment, non-attainment, maintenance, or unclassified with respect to their compliance with National Ambient Air Quality Standards (NAAQS). Non-attainment and maintenance areas are locales that have recently violated one or more of the NAAQS and must satisfy the requirements of State or Federal Implementation Plans (SIPs or FIPs) to bring them back into conformity with the applicable air quality standards. Eielson AFB is located in an *unclassified* area, and therefore activities that generate emissions do not need to satisfy the requirements of the EPA ruling *Determining Conformity of General Federal Actions to the State or Federal Implementation Plans*.

### 3.1.7 Cultural Resources

In 1994, Eielson AFB contracted for the preparation of a predictive model for the discovery of prehistoric cultural resources on base lands. The predictive model was then used to conduct an evaluation of cultural resources on Eielson AFB as required by Section 110 of the National Historic Preservation Act. The areas associated with the proposed action and alternatives 1 and 2 have been determined to not contain cultural or archeological resources. In the event that during project excavation/construction any cultural resources were encountered, activities would cease until the resources were evaluated.

## 3.2 Biological Resources

### 3.2.1 Vegetation

The vegetation of the Tanana River Valley in the vicinity of Eielson AFB is typical of boreal forest or taiga habitats. The boreal forests of Eielson AFB are predominantly evergreen forests dominated by black spruce and white spruce (*Picea glauca*), but also include extensive stands of deciduous forests containing paper birch (*Betula papyrifera*), quaking aspen (*Populus tremuloides*), and balsam poplar (*P. balsamifera*). Extensive areas of shrub and herbaceous vegetation are found in wetlands, lowland areas, and the active floodplain, and are dominated by willows and other shrubs, sedges, and grasses. Bog areas are dominated by black spruce stands intermixed with peat moss (*Sphagnum* spp.) and cottongrass (*Eriophorum vaginatum*).

### 3.2.2 Aquatic/Fishery Resources

3.2.2.1 Lakes and streams on Eielson AFB contain both native fish and fish stocked by the Alaska Department of Fish and Game. Native fish found in the Tanana River drainage include chinook salmon (*Oncorhynchus tshawytscha*), chum salmon (*O. keta*), silver salmon (*Oncorhynchus kisutch*), burbot (*Lota lota*), arctic grayling (*Thymallus arcticus*), northern pike (*Esox lucius*), chub (*Semotilus* spp.), several species of whitefish (*Coregonus* spp.), sheefish (*Stenodus leucichthys nelma*), rainbow trout (*Oncorhynchus mykiss*), and arctic char (*Salvelinus alpinus*).

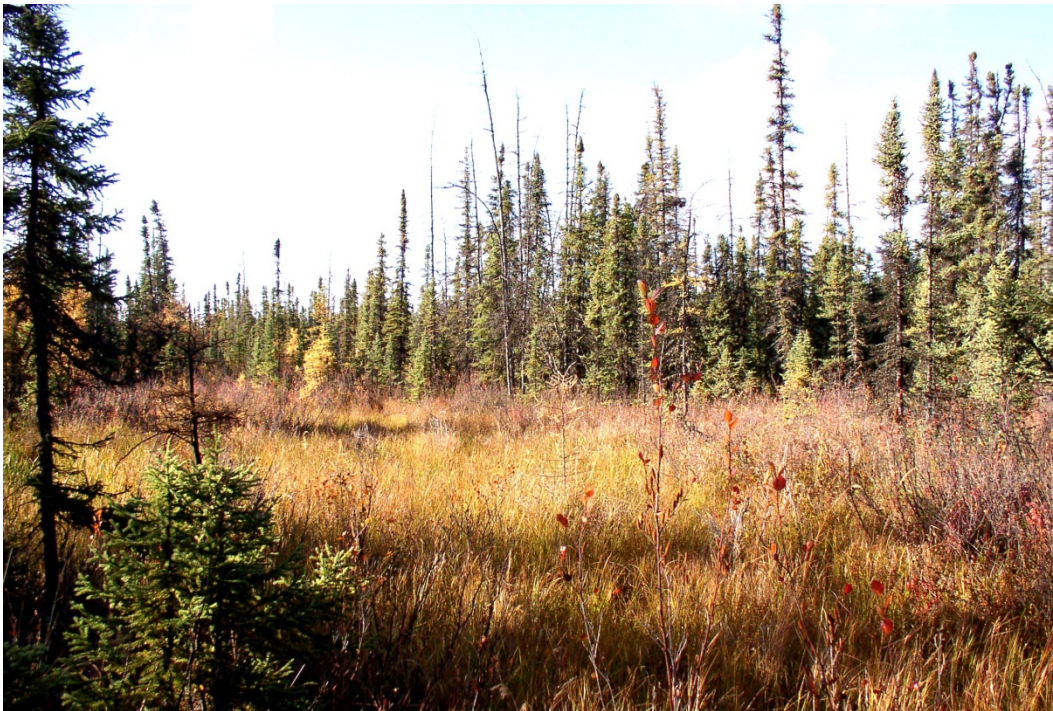
3.2.2.2 The Alaska Department of Fish and Game stocks five lakes and one stream on Eielson AFB: Grayling Lake, Hidden Lake, Polaris Lake, 28 Mile Pit, Moose Lake, and Piledriver Slough. Fish stocked by the Alaska Department of Fish and Game includes rainbow trout, arctic grayling, arctic char, silver salmon, chinook salmon, chum salmon, and northern pike. There are no known federally listed threatened or endangered fish species, fish species proposed for listing, or critical fish habitats on Eielson AFB.

### 3.2.3 Wildlife Resources

3.2.3.1 The surrounding Tanana Valley provides breeding habitat for a wide variety of migratory bird species. Bird species found on Eielson AFB include spruce grouse (*Dendragapus*

*canadensis*), ruffed grouse (*Bonasa umbellus*), northern goshawk (*Accipiter gentilis*), sharp-shinned hawk (*A. striatus*), great horned owl (*Bubo virginianus*), red-tailed hawk (*Buteo jamaicensis*), and American kestrel (*Falco sparverius*). During winter, willow ptarmigan (*Lagopus lagopus*) and rock ptarmigan (*L. mutus*) are common on Eielson AFB. Over 20 species of waterfowl, including geese, ducks, loons, grebes, and scoters use aquatic habitats on the installation.

3.2.3.2 There are 32 species of mammals found on Eielson AFB. Common species include moose (*Alces alces*), black bear (*Ursus americanus*), grizzly bear (*U. arctos*), snowshoe hare (*Lepus americanus*), marten (*Martes americana*), red squirrel (*Tamiasciurus hudsonicus*), beaver (*Castor canadensis*), muskrat (*Ondatra zibethicus*), mink (*Mustela vison*), meadow vole (*Microtus pennsylvanicus*), red-back vole (*Clethrionomys rutilus*), and meadow jumping mice (*Zapus hudsonius*).



**Figure 3-2 – Wetlands in the Vicinity of the Proposed Project Area**

### 3.2.4 Habitat Value

This section provides a summary of the existing habitat quality and function for each of the areas associated with the proposed project and alternatives.

3.2.4.1 *Proposed Project:* The proposed project area is a continuous black spruce bog area that contains stands of small to medium sized black spruce trees (see **Figure 3-2**). Black spruce stands are typically interspersed with small amounts of paper birch and tamarack, as well as,

open areas dominated by scrub/shrub stands of dwarf arctic birch and bog rosemary. Understory in most areas includes Labrador tea, lowbush cranberry, and blueberry. Red squirrels use the spruce cones for food and mosses for nests. Marten use the spruce for cover. Spruce grouse use the cranberries in the fall and spruce needles in the winter for food. Black bear forage on freshly sprouted grasses in the spring and lowbush cranberries in the late summer and fall. Because of the lack of browse in black spruce wetlands, moose are in the area only when passing from one food or shelter source to another. Occasionally the black spruce wetlands are interspersed with wet meadows that support emergent aquatic vegetation (sedges, grasses) in conjunction with seasonally persistent shallow open water areas. This habitat is used in spring and fall by migrating waterfowl and shorebirds for resting and feeding, and for nesting by resident birds on water bodies that have stable water levels. Moose forage on the grasses associated with the ponds.

3.2.4.2 *Alternative 1*: Habitat value of the Cathers Lake area has been reduced due to development of the area for extraction of gravel. Originally, the area exhibited similar habitat value to that found at Mullins Pit, mixed black spruce woodlands and scrub/shrub wetlands. The area has been stripped of its vegetation, topsoil, and mineral soil to expose the gravel layers. These areas have little or no habitat value.

### **3.2.5 Threatened and Endangered Species**

No threatened or endangered species, as designated by the US Fish and Wildlife Service, typically occur in any of the project areas included in the two action alternatives. This was the conclusion of an Eielson AFB contract study entitled *Biological Survey, Final Report 1994*, that addressed the potential for the presence of endangered species on base lands. Recent observations and avian surveys continue to support this likelihood.

## **4.0 Environmental Consequences**

This section discusses the probable impacts for each alternative described in Section 2.0. This section is organized according to resources and a discussion of each alternative action is provided relative to resources identified as relevant in Section 3.

### **4.1 Physical Environment**

#### **4.1.1 Geology/Soils**

*4.1.1.1 Proposed Action:* Construction of the project at the proposed location would alter the physical environment mainly by the excavation of surface and mineral soils and the extraction of alluvial gravels to a depth of approximately 30 feet. Materials would initially be excavated and stockpiled on-site until needed. These gravels and soils would then be used for construction material at various project sites throughout the south half of the base. Total volume of material excavated would be approximately 633,000 cubic yards from an approximate 100-acre site.

*4.1.1.2 Alternative 1:* Alternative 1 would result in excavation of gravels from Cathers Lake in a manner similar to the proposed project at Mullins Pit. Similar impacts to those indicated for Mullins Pit would occur at Cathers Lake with respect to the removal of native soils and gravels. No accurate estimate of gravels available at this pit has been developed.

*4.1.1.3 Alternative 2:* Since Alternative 2 would require that gravel materials be obtained from off-base, there would still be a need for a gravel mining operation to occur. Since the only source of gravel in Interior Alaska is to excavate alluvial gravels in old floodplains, impacts similar to those previously discussed in 4.1.1.2, would likely occur at another location.

*4.1.1.4 No Action Alternative:* Since the no action alternative would continue the use of the previously permitted and developed portions of both Mullins Pit and Cathers Lake until those gravels are exhausted, similar impacts as described for the proposed action and alternative 1.

#### **4.1.2 Groundwater**

*4.1.2.1 Proposed Action:* The excavation of gravel in the floodplain of a major river as occurs on Eielson AFB lands, has the potential for impacts to groundwater. Typically groundwater is 6 to 10 feet below ground level and since the gravel pits are a minimum of 25 to 30 feet in depth, groundwater is invariably reached during excavation. If activities associated with mining operations are conducted in a careful manner, such as keeping fuels and other hazardous materials used by equipment away from areas that surface runoff could drain into the pit area, then little or no impacts should occur. Fueling of equipment is done in areas well away from the pit areas. Also, if spills do occur, operators at the pit are required to have cleanup equipment on-site for immediate cleanup.

4.1.2.2 *Alternative 1*: Since operations at Cathers Lake pit would be very similar to those at Mullins Pit, impacts associated with this alternative would be expected to be similar to those described above for the proposed action.

4.1.2.3 *Alternative 2*: Since alternative 2 would require that gravel materials be obtained from off-base, there would still be a need for a gravel mining operation to occur. Since the only source of gravel in Interior Alaska is to excavate alluvial gravels in old floodplains, impacts similar to those previously discussed in 4.1.2.1, would likely occur at another location.

4.1.2.4 *No Action Alternative*: The no action alternative would potentially result in the continued use Mullins Pit and Cathers Lake and would therefore, likely have similar impacts as described for the proposed action and alternative 1.

### **4.1.3 Surface Water**

4.1.3.1 *Proposed Action*: Surface waters in the form of natural lakes or streams are not found within the proposed project area and it is not anticipated that there would be impacts to surface water resources from this alternative. The existing Mullins Pit is a man-made body of water and the gravel operations and subsequent pit rehabilitation will result in enhanced lake habitat values existing at the site.

4.1.3.2 *Alternative 1*: Similar circumstances exist at Cathers Lake and it is expected that resource values will increase as the project progresses and habitat creation/enhancement is completed at the site.

4.1.3.3 *Alternative 2*: This alternative would require the purchase of gravel from an off-base gravel pit. It could not be determined in advance which facility this would be and therefore any impacts to surface water would be difficult to predict.

4.1.3.4 *No Action Alternative*: The no action alternative would result in continued gravel mining operations at Mullins Pit and Cathers Lake (in the near term). Impacts to surface water in these areas have been addressed above.

### **4.1.4 Noise**

4.1.4.1 *Proposed Action*: Noise impacts associated with implementation of this action would be short-term and relatively low decibel compared to ambient noise levels that occur with nearby flight line aircraft operations. Noise would be associated with gravel mining machinery, and would last only for the duration of the summer construction season.

4.1.4.2 *Alternative 1*: Noise impacts for this alternative would be similar to the proposed action.

4.1.4.3 *Alternative 2*: Noise impacts for this alternative would likely be similar to the proposed action and alternative 1.

4.1.4.4 *No Action Alternative*: Noise impacts associated with this alternative would be similar to those described for the proposed action; at least until the currently permitted pit area is depleted of gravel.

#### **4.1.5 Air Quality**

4.1.5.1 *Proposed Action*: Some minor, short-term impacts from emissions associated with the operation of construction machinery would result from the proposed action.

4.1.5.2 *Alternative 1*: Impacts to air quality from this alternative would be similar to those for the proposed action.

4.1.5.3 *Alternative 2*: Impacts from this alternative would likely be similar to the proposed action.

4.1.5.4 *No action alternative*: Impacts to air quality similar to the proposed action would result from this alternative.

#### **4.1.6 Cultural Resources**

No impacts to cultural resources would likely result from the proposed action or alternative 1 as cultural resources on base lands have been fairly well surveyed. Since no commercial off-base source of gravel has been specifically identified for alternative 2, it is not possible to assess the extent to which cultural resources might be impacted by implementation of that alternative. Under any circumstances where cultural resources were discovered on base lands, all activities would cease until a cultural resource specialist evaluated the find. No impacts to cultural resources would likely occur from the no action alternative.

### **4.2 Biological Resources**

#### **4.2.1 Vegetation**

4.2.1.1 *Proposed Action*: Significant impacts to vegetation on the 98.64-acre pit expansion site will occur as a result of construction of the proposed action. The process of extracting gravel from a pit by definition requires that all surface and subsurface soils be excavated so that the gravel lenses are exposed. As a result 98.64 acres of black spruce wetlands will be removed.

4.2.1.2 *Alternative 1*: Vegetation has already been cleared from the area of Cathers Lake that would be used to provide gravel under this alternative. No additional impacts to vegetation would occur unless the pit is expanded.

4.2.1.3 *Alternative 2*: Since no commercial off-base source of gravel has been specifically identified for this alternative, it is not possible to assess the extent to which vegetation might be impacted by implementation of this alternative.

4.2.1.4 *No action alternative*: This alternative would, in the short-term, rely on gravel sources that have already been developed and permitted. Therefore, no additional impacts to vegetation would occur as the result of the use of previously developed and mined gravel at Mullins Pit and Cathers Lake.

#### **4.2.2 Aquatic/Fishery Resources**

4.2.2.1 *Proposed Action*: Despite the fact that the proposed project site is in wetlands, no impacts to aquatic or fishery resources would likely result from the expansion of Mullins Pit. The nearest water body is Garrison Slough, approximately 1500 feet to the east of Mullins Pit.

4.2.2.2 *Alternative 1*: This alternative would also not likely have impacts to fishery resources as Cathers Lake is 700 feet from the nearest aquatic system that supports fish.

4.2.2.3 *Alternative 2*: Since no commercial off-base source of gravel has been specifically identified for this alternative, it is not possible to assess the extent to which aquatic/fishery resources might be impacted by implementation of this alternative.

4.2.2.4 *No Action Alternative*: The no action alternative would potentially result in the continued use Mullins Pit and Cathers Lake and would therefore, likely have similar impacts as described for the proposed action and alternative 1.

#### **4.2.3 Wildlife Resources**

4.2.3.1 *Proposed Action*: The proposed action would result in the loss of 98.64 acres of wildlife habitat. The habitat, black spruce bog, would be cleared and excavated resulting in the total loss of habitat value for this acreage. This loss would be partially mitigated by the proximity of large areas of comparable habitat that are immediately adjacent to the project area. These adjoining expanses of similar (black spruce bog) habitat would likely provide alternative habitat for mobile species displaced by the loss of habitat at the project site.

4.2.3.2 *Other Alternatives*: No impacts to wildlife resources are anticipated from either Alternative 1 or the no action alternative. Since no commercial off-base source of gravel has been specifically identified for this alternative, it is not possible to assess the extent to which wildlife resources might be impacted by implementation of alternative 2.

#### **4.2.4 Threatened and Endangered Species**

No impacts to threatened and endangered species will result from any of the alternatives considered in this EA.

#### **4.3 Cumulative Impacts**

The National Environmental Policy Act (NEPA) process requires that the issue of cumulative impacts be addressed in an environmental assessment.

4.3.1 The Council on Environmental Quality (CEQ) has stated in their NEPA regulations (1508.7) that: “*Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to past, present, and reasonably foreseeable future actions. . .*” and “. . .*can result from individually minor, but collectively significant actions taking place over a period of time.*” Eielson AFB has, over the years, been very cognizant of the issue of cumulative impacts to wetlands. This is due to the fact that the base was, to a large extent, built by filling wetlands, and that expansion of Eielson AFB facilities beyond the original footprint of the base often requires the use of additional wetlands. Of the 19,789 acres that constitute Eielson AFB lands, 51 percent are designated wetlands.

4.3.2 To address the potential for cumulative impacts to wetlands, Eielson AFB has developed an active program of wetland habitat creation and enhancement. Classification of Eielson AFB wetlands according to type and quality (as defined in Cowardin, et al, US Fish and Wildlife Service, 1979) has indicated that 93 percent of Eielson AFB wetlands are of low-quality. Most of these wetlands are classified as black spruce or alder/willow, scrub/shrub wetlands and constitute large, homogenous blocks of land that provide minimal wetland values to wildlife. When Eielson AFB develops a gravel source by excavating alluvial gravel deposits, it is in these black spruce wetlands. As part of the extraction process, wetlands of higher value are created (lake habitat with shallow littoral zones and emergent vegetation) from lower value black spruce and uplands. The type and quality of wetlands are particularly valuable for feeding, nesting, and brood-rearing by waterfowl, the bird species potentially most affected by the proposed project. The wetland creation/enhancement program on Eielson AFB has been going on for several years and has the full and enthusiastic support of local, state, and federal resource agencies. In addition, resource agencies have viewed this voluntary wetlands enhancement program as more than adequate to compensate for losses that occur as part of Eielson AFB construction projects.

4.3.3 The proposed project will result in the loss of 98.64 acres of relatively low value black spruce bog. As a result of wetland enhancement projects described above, more than 150 acres of higher value habitat will be developed at Mullins Pit, more than compensating for wetland losses incurred by base development projects. It is felt that Eielson AFB’s comprehensive wetland management program more than offsets wetland losses and that there is a cumulative net gain in wetland values on base lands.

#### **4.4 Unavoidable Adverse Impacts**

Unavoidable adverse impacts would result from implementation of the proposed action in the form of a permanent loss of 98.64 acres of black spruce bog wetlands. Alternative 1, the no action alternative, would result in no additional unavoidable adverse impacts beyond those addressed in the previously written environmental assessment referenced in Section 1.1.3 of this document.

#### **4.5 Relationship of Short-Term Uses and Long-Term Productivity**

Short-term uses are those that generally occur on a year-to-year or shorter term basis. The proposed action would result in both short-term losses and long-term losses. The expansion of Mullins Pit would result in the permanent loss of 98.64 acres of black spruce wetlands. There would be a potential increase in long-term productivity of the area once the wetlands enhancement proposed for Mullins Pit is completed. The open water lacustrine system with shallow littoral zones provides a higher quality habitat than a large tract of homogeneous black spruce wetlands.

#### **4.6 Irreversible and Irretrievable Commitments of Resources**

The proposed action is the only action considered in this EA that would result in additional irreversible and irretrievable commitments of resources. The resources lost would include 98.64 acres of black spruce wetlands as well as the removal of gravel substrates for use as a construction material.

#### **4.7 Environmental Justice**

4.7.1 President Clinton issued Executive Order (EO) 12898, *Environmental Justice in Minority Populations and Low-Income Populations*, on February 11, 1994. Objectives of the EO, 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 environmental justice analysis must first identify all adverse impacts associated with the project. The next phase is to delineate the potential area of impact for the resources affected. If, within this area of impact, population demographics are such that a disproportionate effect on minority or low-income populations may occur, it should be so identified. These impacts should be documented and mitigation should be developed that can be implemented by the Air Force.

4.7.3 The site for the proposed project is near the Loop Taxiway, which is an industrial area of the base. The closest residential population is base housing, approximately 2.5 miles to the north. Base housing does not exhibit any particular demographics except related to military rank. In the case of this project, the housing that is closest to the project area is officer's housing. Based on the environmental impacts identified in this EA and on a corresponding environmental justice analysis, it is felt that no disproportionate impact to minority or low-income populations would occur from implementation of this project.

## 4.8 Mitigation

Mitigation is required as a result of the federal Section 404 Corps of Engineers wetlands permit obtained for this project. The permit contains special conditions listed on the issued wetlands permit that will be incorporated into the project design as presented in the proposed project. They are as follows:

- The gravel pit will be excavated in a manner that will create at least one deep basin that will have a minimum depth of 30 feet. The perimeter shelves of the pit will, upon completion of the gravel mining and subsequent rehabilitation work, be a minimum of 20 feet wide and not exceed a slope of 7:1.
- As the pit area is developed, overburden will be segregated and stockpiled for use as a construction material. A minimum of 50 percent of the material will be used for spreading into the littoral zone of the reclaimed pit during the pit rehabilitation process. The overburden layer placed in the littoral zone will be approximately 6 inches thick.
- Development of the newly authorized pit expansion area will be developed and reclaimed in cells. The cell size will be determined by project specific needs as developed in conjunction with base construction plans and schedules. Cells will be mined so that a minimum depth of 30 feet would be achieved. Cell development will be programmed in accordance with demonstrated material requirements based on anticipated base project needs.
- A minimum of 10 acres of tall shrub habitat would be established adjacent to the reclaimed pit area. This habitat would be at least 80 feet wide.

## **5.0 Persons and Agencies Consulted**

Mr. Gerald Von Rueden, USAF, 354 CES/CEVN, Eielson AFB, ph: 377-5182

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## 6.0 Glossary

Alluvial - Sediment deposited by flowing water.

Carbon Monoxide - A colorless, odorless gas resulting from the incomplete oxidation of carbon; found, for example, in automobile exhaust or mining operations; poisonous to animals.

Cantonment - The main operational area of a military base.

Culvert - A drain crossing under a road or an embankment.

Environmental Impact Analysis Process (EIAP) - is a set of guidelines (Air Force Instruction 32-7061) that the Air Force uses to comply with the NEPA process.

Decibel - A unit of measurement for describing sound intensity.

Executive Order 11990 - Mandate to federal agencies to follow the NEPA process to ensure the protection of wetlands.

Habitat - The area or environment in which an organism or ecological community normally occurs.

Hydro-axed - A large axing machine driven by hydraulics that cuts down and mulches shrubs and trees.

Mean Sea Level (MSL) - The average surface level for all stages of the tide over a 19-year period, usually determined from hourly height readings from a fixed reference point.

National Environmental Policy Act (NEPA) - Legislation enacted in 1969 mandating that all federal agencies assess the environmental impacts of actions which may have an impact on man's environment.

National Historic Preservation Act - Federal mandate that requires the preservation of prehistoric and historic sites.

Non-Attainment Area - An area exceeding National Ambient Air Quality Standards for one or more criteria pollutants.

Permafrost - Permanently frozen subsoil occurring in perennially frigid areas.

Riparian - Living or located on a riverbank or a natural course of water.

SAFO 780-1 - Secretary of the Air Force Order and reference number.

Seasonally Persistent - Persistence is based on historical records and field evidence that indicates an area is seasonally inundated with water during non-frozen (spring/summer) portions of the year.

Turbidity - Cloudy or hazy appearance in a naturally clear liquid caused by a suspension of colloidal liquid droplets or fine solids.

Understory - A foliage layer occurring beneath and shaded by the main canopy of a forest.

Upland - An area of land of higher elevation, often used as the opposite of a wetland.

Wetlands - Those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

404 Wetland - Wetland areas that have been determined “waters of the United States” and thus subject to Section 404 wetland permitting guidelines administered by the Army Corps of Engineers and the US Environmental Protection Agency.

Wetland Functional Value - A methodology that identifies the type, quantity, and quality of an ecosystem, and uses or potential uses of wetlands in the vicinity of a proposed project.

100-Year Floodplain - Based on historical evidence, there is a high probability that the area within the 100-year floodplain will be flooded once every 100 years.

## **7.0 Project Wetlands Permit**

## 8.0 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 an environmental assessment (EA) and Finding of No Significant Impact (FONSI) to evaluate the consequences of the following -proposed action:

Expand Mullins Pit by clearing and developing an additional 98.64 acres of black spruce wetlands for the purpose of providing material for base construction projects. Pit expansion would generate approximately 657,424 cubic yards of gravel, 79,570 cubic yards of topsoil, and 397,894 cubic yards of unclassified fill. The pit would be reclaimed and turned into a recreational and wildlife area that would provide habitat for fish and other wildlife species.

#### **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 May 3, 2003. 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, 3112 Broadway Ave., Unit 15A, Eielson AFB, AK 99702-1830.

## **Appendix A: Agency/Scoping Meeting**