Environmental Assessment

for the

Construction of the Power Plant Discharge Ditch Fish Barrier

Eielson Air Force Base, Alaska

354th Fighter Wing
March 2006

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)
and
FINDING OF NO PRACTICABLE ALTERNATIVE (FONPA)
for
Construction of a Fish Barrier

Introduction

Eielson Air Force Base (Eielson) is proposing to construct a fish barrier that is designed to prevent fish in French Creek from entering the Central Heating and Power Plant's (CHPP) cooling pond discharge ditch. The water discharge in this ditch has temperatures that are elevated above the maximum allowable for anadromous fish of the type that inhabits French Creek, the stream to which the discharge ditch is connected. The fish barrier is a requirement of the National Pollutant Discharge Elimination System (NPDES) permit that Eielson must have for the CHPP to discharge its cooling water.

Description of the Proposed Action

The Proposed Action will result in the construction of a fish barrier at the downstream end of three culverts through which water in the discharge ditch flows. The barrier would consist of a metal frame with rods that serve as a barrier to fish that might swim upstream into the discharge ditch. The barrier would be built approximately 325 feet from the confluence of the discharge ditch and French Creek.

Alternatives to the Proposed Action

One alternative to the Proposed Action was identified. This alternative would construct a fish barrier similar to that of planned for the Proposed Action, but it would be located further downstream, closer to the confluence of the discharge ditch and French Creek.

No Action Alternative

This alternative would result in no action being taken to block fish from migrating into the CHPP's discharge ditch. This could result in the non-issuance of an NPDES permit and the inability of the CHPP of discharging its cooling water.

Environmental Impacts of the Proposed Action

Wetlands and Floodplains

The proposed project would result in impacts to 56 square feet of black spruce wetlands. The wetlands are of relatively low-value and are adjacent to large areas of similar habitat. Any wildlife that uses the wetlands would likely be displaced to adjacent wetlands similar to these that currently exist near the site.

The project does lie within the 100-year floodplain. An Air Force hydrologist has reviewed the projects potential to impact the 100-year floodplain and has found that it would have no affect on the ability of the existing floodplain to function during 100-year flood events.

Cultural Resources

No cultural resources have been identified in the project area. However, should any be uncovered, all construction would cease until an archeologist evaluates the resource.

Biological Resources

Impacts to biological resources from the Proposed Action would be minimal. Habitat impacted is a type that commonly occurs in large tracts nearby the project. It is likely that the few wildlife species that currently use the area would be displaced to this nearby habitat. Some small mammals such as squirrels and voles would be displaced.

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 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

Standard best management practices have been incorporated into the project design to minimize impacts to the environment. These measures include using silt fences to prevent discharge of sediment into French Creek, completing all in stream construction during low flow periods, and revegetating all disturbed soils. No special conditions (mitigation) were required by any federal or state agency that reviewed and/or commented on the Army Corps of Engineers wetlands permit for this project.

Public Comment

No public comment was received from the public noticing of the EA/FONSI/FONPA or the Army 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 (AFI) 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989), the Air Force has conducted an EA for the construction of a fish barrier in conjunction with the CHPP discharge ditch. This FONSI/FONPA has been developed pursuant to information provided in the accompanying EA.

Finding of No Practicable Alternative: Eielson is an Air Force facility that operates, maintains, and trains combat forces in close air support of military operations worldwide. Eielson must have a power plant that is operational and fully compliant with all appropriate environmental regulations and permits, including an NPDES permit. 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 the filling of 56

Biological Resources

Impacts to biological resources from the Proposed Action would be minimal. Habitat impacted is a type that commonly occurs in large tracts nearby the project. It is likely that the few wildlife species that currently use the area would be displaced to this nearby habitat. Some small mammals such as squirrels and voles would be displaced.

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 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

No special conditions (mitigation) other than standard best management practices that are already incorporated into the project design, is required by any federal or state agency for impacts that may result from this project. The issued Army Corps of Engineers wetlands permit required no mitigation.

Public Comment

No public comment was received from the public noticing of the EA/FONSI/FONPA or the Army 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 (AFI) 32-7061, *Environmental Impact Analysis Process* (32 CFR Part 989), the Air Force has conducted an EA for the construction of a fish barrier in conjunction with the CHPP discharge ditch. This FONSI/FONPA has been developed pursuant to information provided in the accompanying EA.

Finding of No Practicable Alternative: Eielson is an Air Force facility that operates, maintains, and trains combat forces in close air support of military operations worldwide. Eielson must have a power plant that is operational and fully compliant with all appropriate environmental regulations and permits, including an NPDES permit. 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 the filling of 56 square feet of wetlands and the construction of a fish barrier within the 100-year floodplain. The proposed action includes all practical measures to minimize impacts 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 construction of fish barrier will not result in significant impacts to the environment. I also find that the preparation of an environmental impact statement is not warranted.

21 APR 2006

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

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Power Plant Cooling Pond Fish Barrier Environmental Assessment Eielson Air Force Base, Alaska

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 Eielson Air Force Base (Eielson) is proposing to construct a fish barrier that is designed to prevent fish in French Creek from entering the Central Heating and Power Plant's (CHPP) cooling pond discharge ditch. Water temperatures in this ditch are elevated above the maximum allowable for anadromous fish of the type that inhabits the stream to which the discharge ditch is connected. The fish barrier is a requirement of the National Pollutant Discharge Elimination System (NPDES) permit that Eielson must have for the CHPP to discharge its cooling water.

1.1.2 Eielson was established in 1944 and is currently part of the Pacific Air Forces (PACAF) Command. The 354th Fighter Wing (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 168th Air Refueling Wing (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 Due to its relatively isolated location in Interior Alaska, Eielson is the only major Air Force installation that is 100 percent responsible for its own potable water generation, waste water treatment, power generation, and steam heat production. The most critical component of this utility system is the Central Heat and Power Plant (CHPP). The CHPP is Eielson's primary source for steam and electrical power. Operating continuously, year round, the CHPP has an annual production of 1.9 billion pounds of steam and 89,000 megawatt-hours of electricity. With arctic temperatures dipping as low as -60° F, reliable steam heat is critical to the operation of Eielson's infrastructure.

1.1.4 By design, coal-fired boilers that produce steam and the steam turbines that produce electricity are cooled by water that is circulated through a system of pipes in the power plant. During summer (May through September), the cooling water is discharged into a ditch which ultimately connects to French Creek, a state designated anadromous fish stream with documented use by chum salmon (*Oncorhynchus keta).* During winter (October through April) the water is discharged into a 29-acre cooling pond where it is cooled and then reused. The source of the cooling water is a groundwater well.

1.1.5 In 1973, the U.S. Environmental Protection Agency (EPA) issued Eielson a National Pollutant Discharge Elimination System Permit (NPDES) for discharge of cooling water from its CHPP. The permit expired in 1978, but has since been administratively extended. However, EPA informed Eielson that a new permit would have to be applied for. In anticipation of this

permit application, modeling of thermal conditions in French Creek and the discharge ditch was conducted. Data gathered for this modeling effort showed that during the summer, the CHPP discharges around 10.8 million gallons of cooling water per day into the discharge ditch. The temperature of discharge water where it enters the ditch averages 28° C. The ditch extends 5,828 feet northeast to where it intersects with French Creek. In stream temperatures of French Creek 40 feet downstream from the confluence with the discharge ditch averages 10° C.

1.1.6 Under state of Alaska statutes (18 AAC 70.020), the Alaska Department of Environmental Conservation (ADEC) has established numeric criteria for surface water temperatures, based on the water use classification. The most stringent of the freshwater criteria are for waters classified for aquaculture. For spawning areas and egg and fry incubation, the maximum temperature may not exceed 13° C; for rearing areas and migration routes, it may not exceed 15° C. The EPA water temperature guidance recommends the 7-day average of the daily maximum as a standard for waters used by cold water salmonids. Where the state and federal guidelines differ, the state can exert primacy and therefore ADEC's standard applies to Eielson's permitted discharge.

1.1.7 At the present time, fish that inhabit French Creek have unrestricted access to the CCHP discharge ditch. Alaska Department of Natural Resource's (ADNR) Office of Habitat Management and Permitting has requested that Eielson construct a fish barrier at a culverted portion of the discharge ditch where a pipeline access road crosses it. This barrier would prevent fish from migrating into the ditch where it could come in contact with water temperature that could be potentially lethal. The barrier would consist of wire gates on the upstream portion of the three culverts that allow cooling water to flow under the pipeline access road.

REGIONAL AND BASE LOCATION MAPS

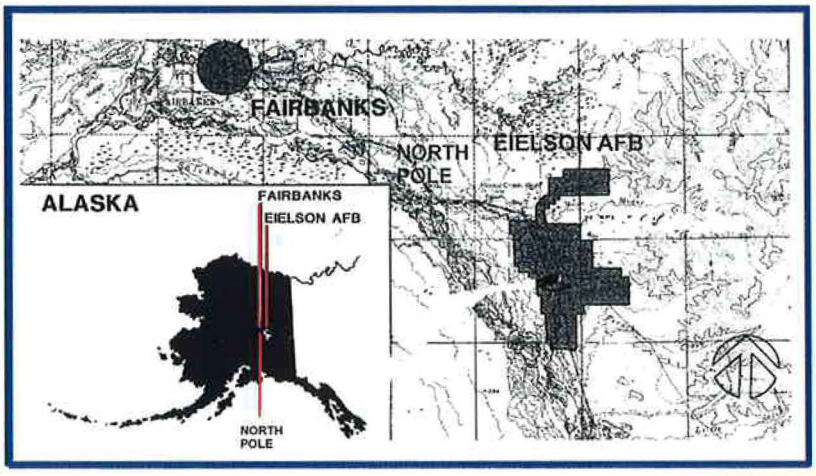

Figure 1-1 – Location Map

1.2 Location of the Proposed Action

1.2.1 Eielson is located within the Fairbanks North Star Borough, approximately 120 miles south of the Arctic Circle and 23 miles southeast of Fairbanks. Eielson 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 include Moose Creek to the north, and the Salcha area to the south of the base.

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. Of the total base acreage, over 50 percent are designated as wetlands. Of the remaining undeveloped portions of the base, 79 percent are wetlands.

1.3 Decision to be Made

1.3.1 As required by 32 CFR Part 989, the *Environmental Impact Analysis Process* will be used to determine what are the environmental consequences of the proposed construction of fish barrier to prevent fish migration into the CCHP's cooling water discharge ditch. This EA is intended to satisfy these requirements. The proposed action and all alternatives considered 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.

1.3.2 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, other alternatives will be considered for which impacts may not reach the threshold of significance.

1.3.3 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 public notice will be published in accordance with 32 CFR 989.15(e)(2). The EA and the draft FONSI will be made available to interested agencies and the public. 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.

1.3.4 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 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 is no practicable alternative to the Proposed Action and that all practical measures to minimize harm to wetlands and/or floodplains has been incorporated into the project design. It will also state whether any required mitigation will be carried out.

1.4 Project Scoping/Significant Issues

This section provides a summary of major issues raised during the scoping process that were considered significant enough to be addressed in the EA. The scoping process typically involves a meeting of potentially interested parties. These may include state and federal regulatory agencies that have oversight authority, as well as base groups that have involvement in the management of base housing or design and construction of the project. For this project scoping process all potentially interested parties were contacted. However, no parties other than Eielson groups chose to participate beyond providing comments to the Army Corps of Engineers on the 404 wetlands permit. The following issues were identified during the scoping process:

1) State and federal regulatory requirements: It was pointed out that the ability of the CHPP to function properly required a cooling water discharge system that meets with federal and state regulations.

2) Maintenance of fish barrier: The fish barrier will require regular maintenance, otherwise the flow in the ditch will be impeded.

1.5 Federal, State, and Local Permits Needed for Project Implementation

Actions identified in this EA would require that certain permits be obtained. 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 for the purpose and need described in Section 1.0. The Proposed Action, one action alternative, and a no action alternative are addressed.

2.1 Proposed Action – Construct Fish Barrier in Discharge Ditch at Culvert Crossing

2.1.1 The Proposed Action would result in the construction of a fish barrier at an existing culvert location along the CHPP discharge ditch, approximately 325 feet from the ditch's confluence with French Creek.

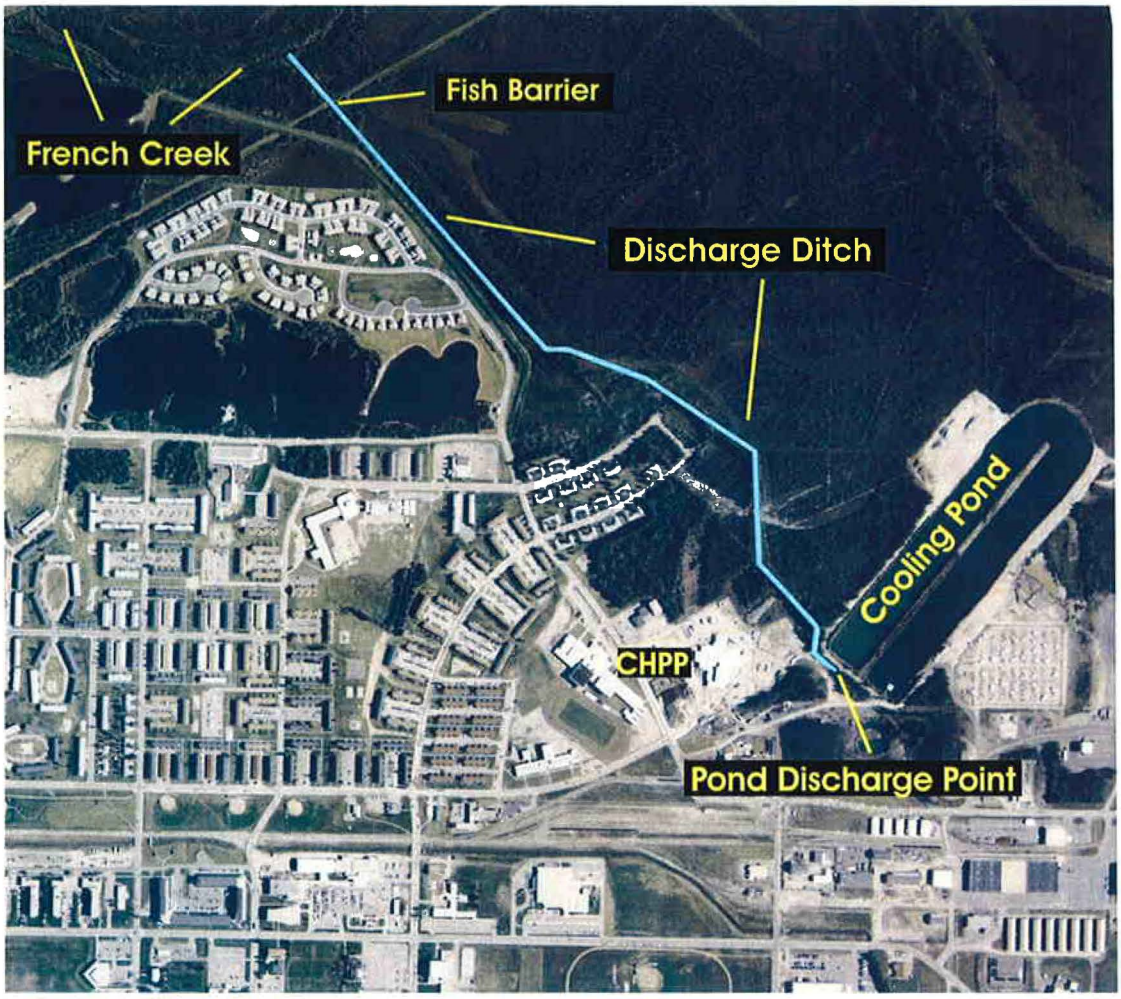

Figure 2-1 – Location of Proposed Project

2.1.2 The fish barrier would be constructed by the following method:

- Excavate an area of the ditch's bank and bottom. Replace excavated ditch bottom with a 2-foot layer of gravel. Replace excavated portion of ditch's bank with a 2-foot-wide gabion back filled with 3-inch rock.

- Attach aluminum fish barrier to culverts and anchor to gabions. The fish barrier will have 0.5-inch diameter rods space 1.25 inches apart (see **Figure 2-2**).
- The fish barriers will be movable so that it can be lifted and cleaned of debris to avoid blockage of the culverts.
- Approximately 6 cubic yards of rock fill would be placed in wetlands to construct the foundation for the fish barrier frame. The Proposed Action would result in the filling of 56 square feet of wetlands.
- Once the fish barrier is in place, the barrier system will be inspected on a weekly basis. If debris collects on the screens, it will be removed. Inspection will occur during all open water periods of the year.

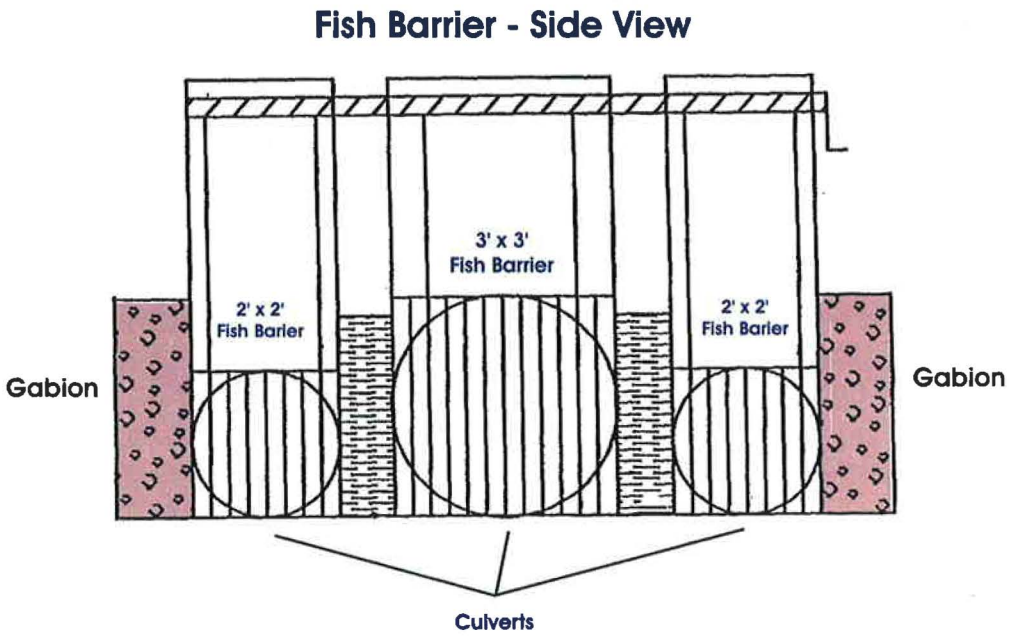

Figure 2-2 –Fish Barrier

2.2 Alternative 1 – Construct Fish Barrier near Confluence of the Discharge Ditch and French Creek

This alternative would construct a fish barrier similar to the one described for the Proposed Action. The main difference in the two designs would be that this alternative would have no culverts to attach the barrier framework to. More extensive excavation would be required and a concrete wing would be constructed on each bank of the discharge ditch to anchor the fish barrier frame. Alternative 1 would result in the placement of 36 cubic yards of material into wetlands, resulting in the loss of 0.04 acres of black spruce wetlands.

2.3 No Action Alternative

This alternative would result in no action being taken to prevent fish from migrating up the power plant discharge ditch.

3.0 Affected Environment

Section 3.0 describes relevant resource components of the existing environment that might be impacted by the proposed project and alternatives. Only environmental components relevant to the issues and objectives of this EA are described.

3.1 Physical Environment

Eielson encompasses approximately 19,790 acres and is isolated from major urban areas. The portion of Eielson that contains the area associated with the Proposed Action 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/Soils

3.1.1.1 The area in the vicinity of Eielson 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.

3.1.1.2 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 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.

3.1.2 Groundwater

Eielson 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 (IRP). Localized contamination of the aquifer has been identified in the industrial area of the base, but the overall quality of groundwater at Eielson is excellent.

3.1.3 Surface Water

3.1.3.1 Aquatic bodies on Eielson 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) and 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 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.

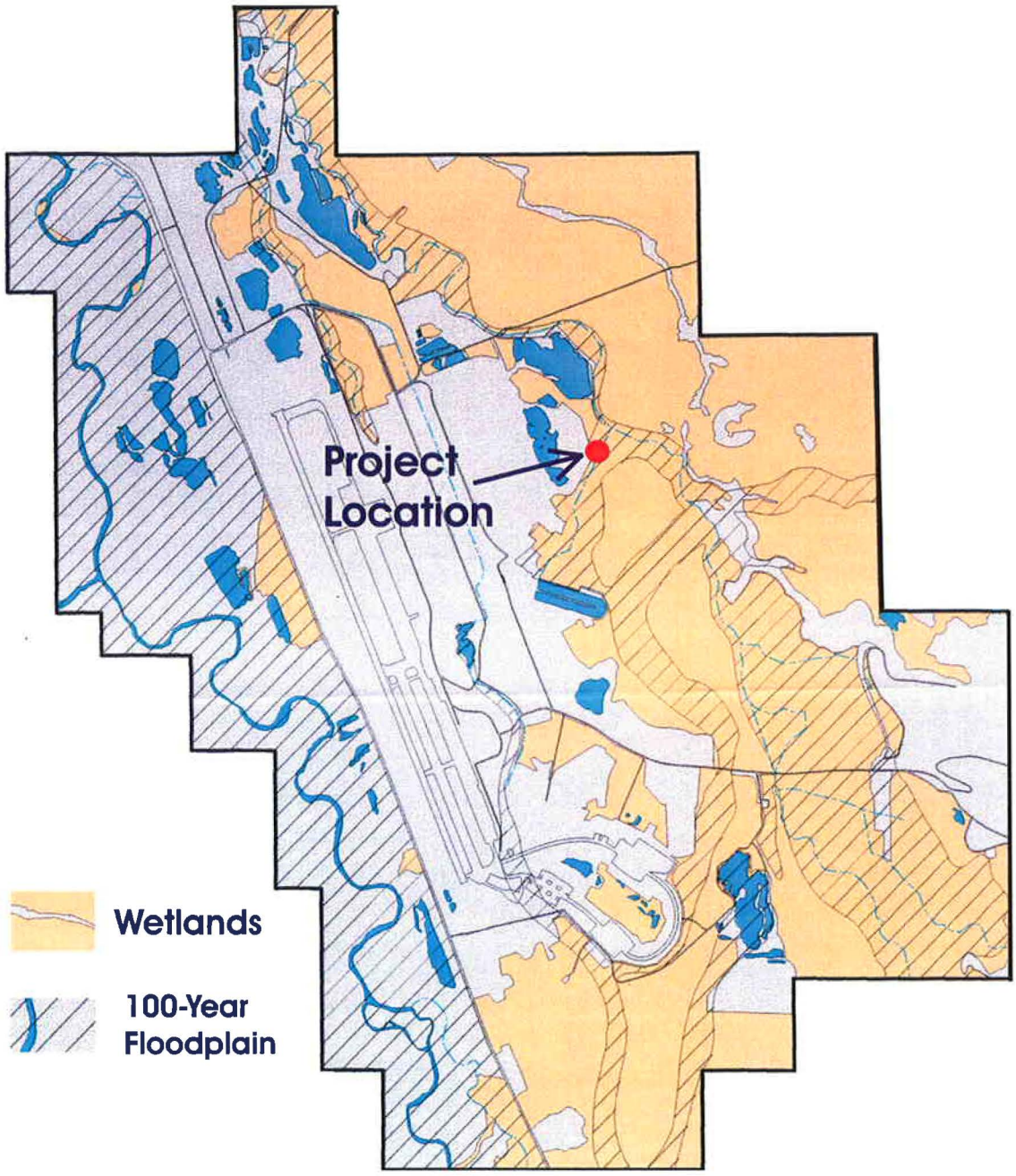

Figure 3-1 – Surface Water Features

3.1.3.2 Approximately 51 percent, or 10,133 acres, of Eielson is classified as wetlands, with 9,391 acres being vegetated wetlands and the remainder being lakes, ponds, and streams (see **Figure 3-1**). Wetlands and low gradient alluvial streams comprise most of the surface water

resources on Eielson, 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.

3.1.3.3 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 and approximately 4,000 feet west of the airfield and parallel to the runways. Approximately 12 miles of Piledriver Slough occurs on Eielson. The slough receives no runoff from the urban developed area of the base and has good water quality.

3.1.4 Noise

Aircraft generate by far the most noise on Eielson. Noise levels associated with aircraft during flying hours can exceed 80 decibels (dB) in the vicinity of the flight line, however, the decibel

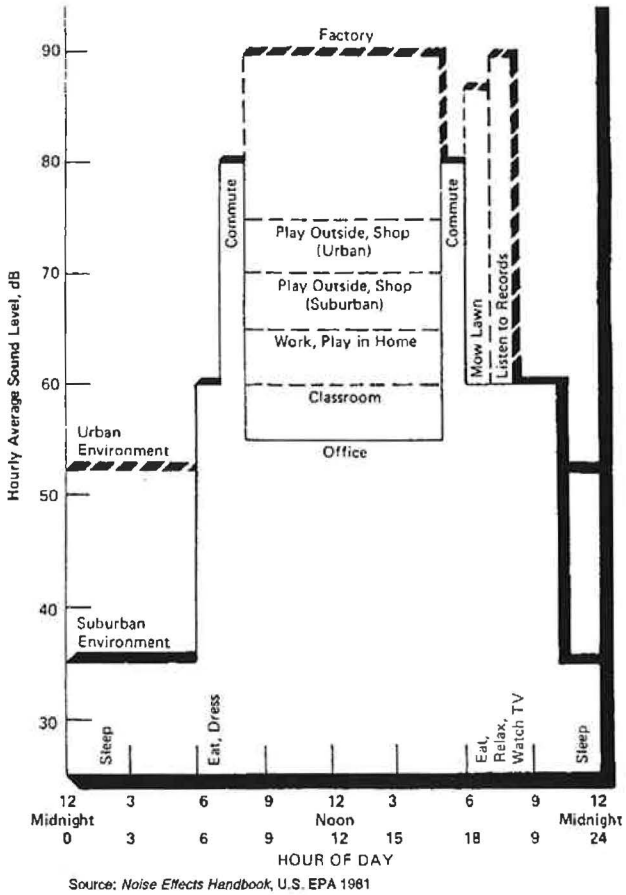

Figure 3-2 - Noise Levels

level drops off to a maximum of 70-dB in the closest residential area, Moose Creek, just north of the base. Noise greater than 65-dB is not recommended for housing areas. 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 3-2** is a chart that provides a scale of noise levels associated with typical daily activities.

3.1.5 Air Quality

Air quality is generally good at Eielson. Although portions of the North Star Borough, of which Eielson is also a part, are in non-attainment for carbon monoxide (Fairbanks and North Pole), Eielson 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 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 is located in an *unclassified* area, and 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.*

3.1.6 Cultural Resources

In 1994, Eielson 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 as required by Section 110 of the National Historic Preservation Act. The areas associated with the Proposed Action and Alternative 1 has 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 is typical of boreal forest or taiga habitats. The boreal forests of Eielson 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 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

Figure 3-3 – Culvert Location for Fish Barrier

salmon (*Oncorhynchus tshawytscha),* chum salmon (*O. keta*), silver salmon (*Oncorynchus 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: Grayling Lake, Hidden Lake, Polaris Lake, 28 Mile Pit, Moose Lake, and Piledriver Slough. Fish stocked by the Alaska Department of Fish and Game include 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.

3.2.2.3 French Creek, the body of water that the CHPP discharge ditch empties into is classified by the Alaska Department of Fish and Game as an anadromous stream; spawning and rearing of chum salmon are known to occur in this reach of the stream. In addition to chum salmon, northern pike, grayling, whitefish, burbot, and rainbow trout are known to inhabit French Creek. The stream is classified by ADEC for all uses under its Water Quality Standards (18 AAC 70.050). For waters classified as spawning areas and egg and fry incubation, there is a maximum temperature that must not exceed 13^0 C.

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 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. 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. 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*).

3.2.4 Project Area Habitat Value

The Proposed Project would be sited in a wetland area that is immediately adjacent to a developed portion of the base. As described previously, the discharge ditch that carries the cooling water from the CHPP is a man-made structure that now exhibits wetland characteristics and is therefore regulated by the Army Corps of Engineers under their Section 404/Clean Water Act wetlands program. The area to the east of the ditch is undisturbed black spruce bog wetlands and provides habitat for a variety of birds and small and large mammals.

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 listed alternatives. This was the conclusion of an Eielson contract study entitled *Biological Survey, Final Report 1994,* that addressed the potential for the presence of endangered species on base lands.

4.0 Environmental Consequences

Section 4.0 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 Soils

4.1.1.1 *Proposed Action:* The Proposed Action would require the excavation of an area on each side of the culvert battery in the CHPP discharge ditch at the specified location. The excavated areas would be backfilled with a gabion and 3-inch rock. Disturbance to 56 square feet of wetlands would occur.

4.1.1.2 *Alternative 1*: This alternative would require more extensive excavation of native soils adjacent to the CHPP discharge ditch for the purposes of constructing a foundation for attaching the fish barrier. Approximately 36 cubic yards of soil would be excavated and backfilled with concrete and gravel, resulting in the loss of 0.04 acres of wetlands.

4.1.1.3 *No Action Alternative*: No impacts to soils would result from this alternative.

4.1.2 Groundwater

4.1.2.1 *Proposed Action:* Although groundwater in the area is quite shallow, construction related excavation would be too shallow to reach groundwater.

4.1.2.2 *Alternative 1:* No impacts to groundwater are anticipated from this alternative.

4.1.2.3 *No Action Alternative:* This alternative would have no impacts on groundwater.

4.1.3 Surface Water

4.1.3.1 *Proposed Action:* The installation of the fish barrier, as previously described, would require excavation of a portion of the banks of the discharge ditch on either side of the culverts. This work has the potential to cause minor increase in silt levels in the discharge ditch immediately downstream from the project site. This siltation would be temporary and could be controlled by silt fences.

4.1.3.2 *Alternative 1:* Impacts to surface water resources would be more significant from this alternative. More extensive excavation of soils adjacent to the discharge ditch would be required, resulting in increased potential for siltation.

4.1.3.3 *No Action Alternative*: No impacts to surface water would result from the no action alternative.

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 flight line aircraft operations. Noise would be associated with operation of construction machinery, and would last only for a 2 weeks during the construction of the fish barrier.

4.1.4.2 *Alternative 1:* Noise impacts associated with this alternative would be the result of the operation of machinery to excavate a foundation for the fish barrier.

4.1.4.3 *No Action Alternative*: No noise impacts would result from this alternative.

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 could result from the operation of construction machinery. This would be more of an impact than with the proposed action due to its increased amount of excavation.

4.1.5.3 *No Action Alternative*: No impacts to air quality would result from this alternative.

4.1.6 Cultural Resources

No impacts to cultural resources would result from any identified alternatives.

4.2 Biological Resources

4.2.1 Vegetation

4.2.1.1 *Proposed Action:* Impacts to vegetation would occur as a result of construction of the proposed action. These impacts would likely be localized and consist of disturbance of mostly grassed areas adjacent to the discharge ditch. Some minor disturbance to wetland vegetation would occur during project construction. All disturbed soils would be revegetated with grasses at the completion of construction.

4.2.1.2 *Alternative 1:* This alternative would result in the disturbance of a somewhat larger area of wetland vegetation. All areas would be revegetated at the completion of the project.

4.2.1.3 *No Action Alternative:* No losses to vegetation would result from this alternative.

4.2.2 Aquatic/Fishery Resources

4.2.2.1 *Proposed Action*: The purpose of the proposed project is to prevent fish from traveling up the CHPP discharge ditch where they could be exposed to higher temperatures than they

would otherwise in French Creek. Elevated temperatures can result in fish mortality. Although there could be some minor, short-term impacts to fish populations from increased stream turbidity during construction, the long-term benefit of having the fish barrier in place would be substantial.

4.2.2.2 *Alternative 1:* Similar impacts to that described for the Proposed Action would occur under this alternative.

4.2.2.3 *No Action Alternative:* No impacts to fishery resources would likely result from this alternative.

4.2.3 Wildlife Resources

4.2.3.1 *Proposed Action*: Minor impacts to small mammals could occur from the construction of the fish barrier. Most animals potentially affected would move to similar habitat that is immediately adjacent to the project area.

4.2.3.2 *Alternative 1:* Similar impacts as described for the Proposed Action would likely occur with this alternative.

4.2.3.3 *No Action Alternative*: No impacts to wildlife would result from this alternative.

4.2.4 Threatened and Endangered Species

There are no threatened or endangered species on Eielson lands and no impacts to these species would 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 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 facilities beyond the original footprint of the base often requires the use of additional wetlands. Of the 19,789 acres that constitute Eielson lands, 51 percent are designated wetlands.

4.3.2 To address the potential for cumulative impacts to wetlands, Eielson has developed an active program of wetland habitat creation and enhancement. Classification of Eielson 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 wetlands are of low quality. Most of these wetlands are

classified as black spruce or willow/alder, scrub/shrub wetlands and constitute large, homogenous blocks of land that provide minimal wetland values to wildlife. When Eielson develops a gravel source by excavating alluvial gravel deposits, it is often 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 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 construction projects.

4.3.3 The installation of a fish barrier at the proposed location would result in the loss of approximately 56 square feet of wetlands. Eielson's wetland creation/enhancement program will more than compensate for this wetland loss. Therefore, it is anticipated that no significant cumulative impacts will result from implementation of this project.

4.4 Unavoidable Adverse Impacts

4.4.1 Proposed Action: The Proposed Action would result in the permanent loss of 56 square feet of low value black spruce wetlands.

4.4.2 Alternative 1: This alternative would result in the loss of 0.04 acres of black spruce wetlands.

4.4.3 No Action Alternative: This alternative would not result in any unavoidable adverse impacts.

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

The Proposed Action would result in some minor long-term losses. The loss of 56 square feet of wetlands would be permanent, and the productivity, although quite minimal, would be lost for the foreseeable future. The short-term uses would be the protection of fish populations in French Creek from thermal pollution.

4.6 Irreversible and Irretrievable Commitments of Resources

No irreversible or irretrievable commitments of resources would occur with either action alternative.

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 action is in base housing. 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 includes both enlisted personnel as well as officer's housing. This project would have equally beneficial effects on a full cross-section of the demographics of Eielson's base population. 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

No mitigation was required by any resource agencies that provided comments to the Army Corps of Engineers wetlands permit for this project.

5.0 List of Persons and Agencies Consulted

Mr. Brent Koenen, USAF, 354 CES/CEVN, Eielson AFB, AK, ph: 377-5182.

Mr. Forrest McDaniel, US Army Corps of Engineers, Regulatory Functions Branch, Fairbanks, AK, ph: 474-2166.

Mr. Larry Bright, US Fish and Wildlife Service, Fairbanks, AK, ph: 456-0322.

Mr. Jim Durst, Alaska Department of Natural Resources, Habitat Management Office Fairbanks ph: 459-7254

6.0 Glossary

Alluvial - Sediment deposited by flowing water.

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.

Installation Restoration Program (IRP) - An Air Force program mandated to identify, investigate, and clean up contamination associated with past Air Force activities.

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 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

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, ALASKA
3437 AIRPORT WAY
SUITE 206 WASHINGTON PLAZA
FAIRBANKS, ALASKA 99709-4777

REPLY TO ATTENTION OF:

Regulatory Branch (1145b)
North Section

PERMITTEE: United States Air Force, Eielson Air Force Base, Alaska

EFFECTIVE DATE: November 9, 2005

REFERENCE NUMBER: POA-1995-462-N, French Creek

DEPARTMENT OF THE ARMY
PERMIT MODIFICATION

Department of the Army permit number 4-950462, French Creek, was issued to the United States Air Force on February 26, 1999, authorizing:

"Discharge approximately 111,213 cubic yards of fill material into approximately 26.95 acres of waters of the United States, wetlands, in conjunction with the upgrades of 6.35 miles of un-improved service road for the MAPCO-EAFB fuel pipeline."

The permit was modified on May 31, 2001 to include:

"Discharge approximately 7,638 cubic yards of clean gravel fill and 8.4 cubic yards of concrete fill into approximately 1.03 acres of waters of the United States, wetlands, to construct five (5) equipment turnarounds between Moose Creek Bluff and Moose Creek Dike; construct 16 equipment turnarounds on Eielson Air Force Base; widen the road where the road crosses 2 dikes, a street, a depression and continues up a steep hill; construct a bridge abutment to relocate the access road for a new elevated approach for the French Creek bridge crossing; and construct six (6) additional access control gates."

The permit is hereby modified as follows:

Discharge approximately six (6) cubic yards of clean gravel fill into approximately 56 square feet of waters of the United States, wetlands, for the installation of a fish barrier gate attached to three culverts located within the powerplant drainage ditch

The time limit for completing the work authorized ends on November 8, 2008. If the activity authorized herein is not completed by the above date, this permit modification, if not previously revoked or specifically extended, shall automatically expire. If you find that you need more time to complete the authorized activity, please submit your request for a time extension to the Corps of Engineers for consideration at least one month before permit expiration. All other conditions under which the subject authorization was made remain in full force and effect.

This authorization and the enclosed modified plans should be attached to the original permit. Also enclosed is a Notice of Authorization that should be posted in a prominent location near the authorized work.

This authorization and the enclosed modified plans should be attached to the original permit.

BY AUTHORITY OF THE SECRETARY OF THE ARMY:

Forrest E. McDaniel
Project Manager

Enclosures

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 stated proposed action:

Construct a fish barrier in association with the Central Heating and Power Plant's cooling water discharge ditch. The fish barrier would be located approximately 325 feet above the confluence of the discharge ditch and French Creek. The proposed project would result in impacts to 56 square feet of black spruce wetlands.

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 April 7, 2006. To get a copy of the EA, to comment, or for more information contact Jim Nolke, Eielson AFB Environmental Flight, at (907) 377-3365, or by mail at 354 CES/CEVP, 2301 Central Ave, Ste 100, Eielson AFB, AK 99702-2299.

Public Announcement appeared in Fairbanks Daily News Miner on March 5, 2006