BLM/AK/PT/94/011+1600+080

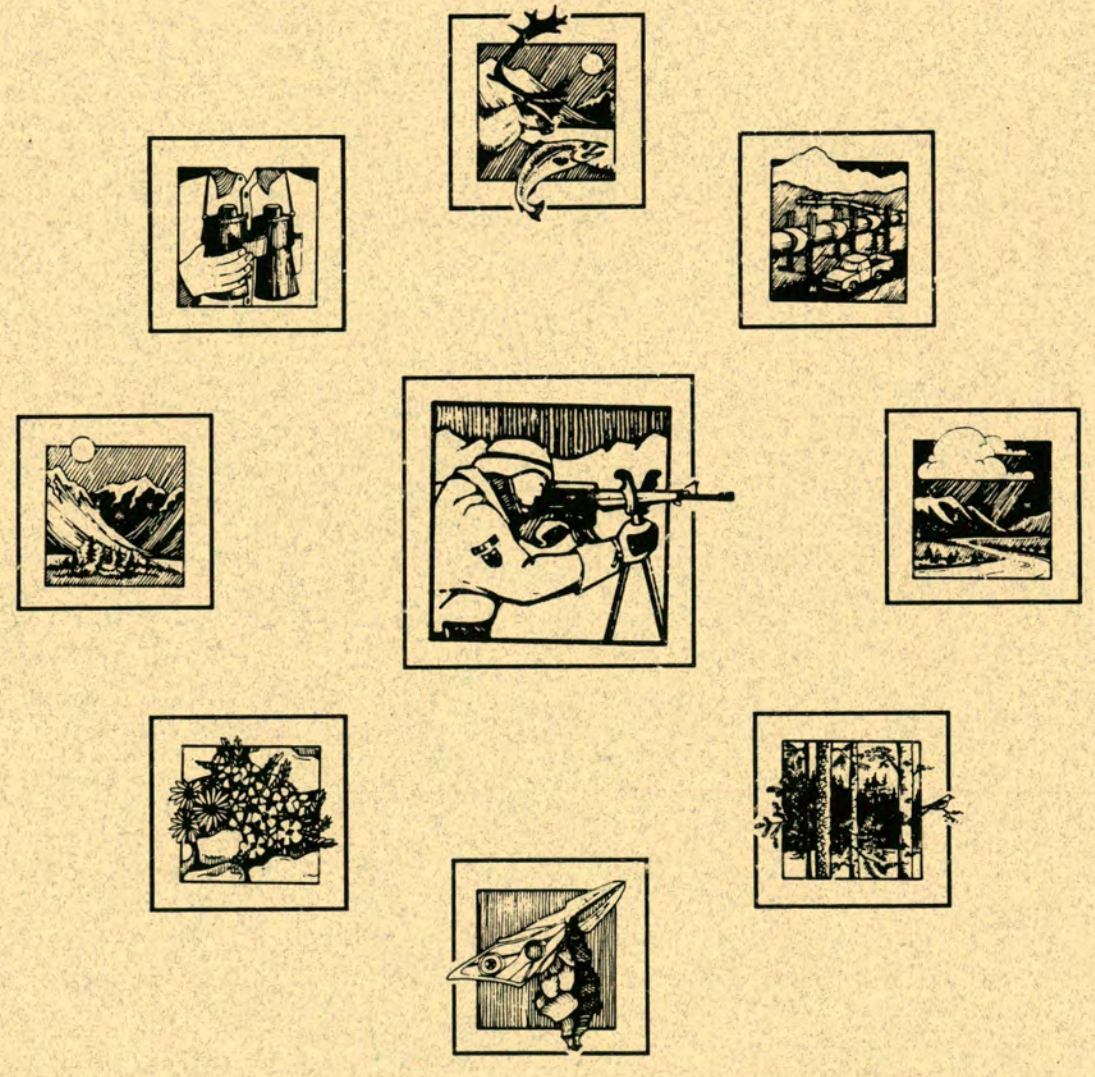
United States Department of the Interior
Bureau of Land Management
Steese/White Mountains District Office

United States Department of Defense
U.S. Army
6th Infantry Division (Light)

Fort Wainwright

Yukon Maneuver Area

Proposed Resource Management Plan
Final Environmental Impact Statement



Fort Wainwright

Yukon Maneuver Area

Proposed Resource Management Plan
Final Environmental Impact Statement

Prepared by:

U.S. Department of the Interior
Bureau of Land Management
Steese/White Mountains District

U.S. Department of Defense
U.S. Army
6th Infantry Division (Light)

1994

PROPOSED RESOURCE MANAGEMENT PLAN
AND
FINAL ENVIRONMENTAL IMPACT STATEMENT
FOR THE
FORT WAINWRIGHT MANEUVER AREA

Lead Agency: U.S. Department of Interior, Bureau of Land Management

Cooperating Agency: U.S. Army, 6th Infantry Division (Light)

Type of Action: Administrative

Abstract: This document presents the Proposed Plan and summaries of four alternative resource management plans for the Fort Wainwright Manuever Area. (For a full discussion of the alternatives to the Proposed Plan and their environmental consequences, see the draft version of this plan dated September 1988.) The Military Lands Withdrawal Act of 1986 establishes the primary uses of this land as military maneuvering and training. The Proposed Plan and the alternatives present a variety of combinations of proposals addressing the natural resources of the withdrawal and their nonmilitary uses. The "no action" alternative (Alternative A) would continue current management. The other alternatives represent a range of choices emphasizing military use, habitat protection, recreation, and economic development. The document goes on to describe the affected environment and the environmental consequences of the Proposed Plan and summaries of the consequences of the alternatives. It also presents public comment made on the draft of this document and the planning team's response to the comments.

The Proposed Plan differs in a number of respects from the Preferred Alternative identified in the Draft Resource Management Plan/Draft Environmental Impact Statement issued in September 1988. Most changes clarify or elaborate on the management prescriptions. Among the more significant changes, the Proposed Plan states that:

1. the BLM and the Army will undertake a Cultural Resource Management Plan. *In contrast, the Preferred Alternative* did not mandate a CRMP.
2. the BLM will not undertake a mineral assessment before considering whether to open the withdrawal to mineral development. *In contrast, the Preferred Alternative* required a mineral assessment before any consideration of opening the lands to mining.

3. mineral materials disposal will not be permitted. *In contrast, the Preferred Alternative* permitted such disposal. (The Department of Interior's Solicitor's Office has advised that the Military Lands Withdrawal Act withdraws the lands from mineral material disposal.)
4. much of the eastern portion of the withdrawal is classified as receiving Moderate fire suppression. *In contrast, the Preferred Alternative* placed some of this land under Full fire suppression.
5. travel along Beaver Creek Road through the AFTAC site will be permitted. *In contrast, the Preferred Alternative* did not allow any nonmilitary access to the AFTAC.

If you have any questions, contact:

Military Withdrawals Planning Team
Division of Resources (931)
Bureau of Land Management
Box 13
222 W. Seventh Ave.
Anchorage, Alaska 99513

or call Jim Ducker, the planning team leader at (907) 271-3369.

Dear Reader,

The planning effort reflected in this Proposed Resource Management Plan/Final Environmental Impact Statement is an important step to fulfill the mandate of the Military Lands Withdrawals Act of 1986. This document is the result of work by a joint BLM-Army planning team consulting with the public. It acknowledges the primary military purpose of the withdrawn lands, yet it presents a Proposed Plan for a variety of nonmilitary uses.

The Proposed Plan, as a result of public and other input, slightly modifies the Preferred Alternative discussed in the Draft RMP/EIS dated September 1988. The BLM and the Army are in the process of drafting a Memorandum of Understanding to assign responsibilities for carrying out the elements of this plan.

The Army and the BLM thank those who took the time to participate in the planning process and assure them that their opinions and criticisms were considered and proved valuable in completing this document.

Edward F. Spang
State Director
Bureau of Land Management

for David A. Bramlett
Major General, U.S. Army
Commanding

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Steese/White Mountains District Office
1150 University Avenue
Fairbanks, Alaska 99709-3844

IN REPLY REFER TO:

December 20, 1993

Dear Reader:

This plan has benefited from your comments, both at public meetings and through letters you sent us following distribution of the Draft Resource Management Plan. We have taken your concerns into account; in Chapter 4 we have indicated how some of the concerns you expressed have altered the plan.

Any person or group who participated in the planning process and has an interest which is, or may be, affected by the approval of this plan may protest the plan to the director of BLM. Send protests to:

Bureau of Land Management
Division of Planning and Environmental Coordination (WO-760)
1849 C Street NW (406 L St.)
Washington, D.C. 20240

Protests must be received by February 15, 1994 and should include the following information:

* the name, mailing address, telephone number, and the interest of the person filing the protest;
* a statement of the issue or issues being protested;
* a statement of the part or parts of the plan being protested;
* a copy of all documents addressing the issue or issues that were submitted during the planning process by the protesting party, or an indication of the date the issue or issues were discussed for the record; and
* a concise statement explaining why the proposed decision is believed to be wrong.

Any significant change to the Proposed Plan made as a result of a protest will be subject to public review and comment prior to approval and implementation.

I thank you for your interest in the management of this withdrawal. I also wish to thank the men and women of the 6th Infantry (Light) for their cooperation and the professionalism they have exhibited during the course of preparing this joint planning document.

Roger Bolstad
District Manager

EXECUTIVE SUMMARY

This Proposed Resource Management Plan/Final Environmental Impact Statement was prepared in accordance with the Military Lands Withdrawal Act of 1986. It deals with the protection and utilization of the natural resources on the withdrawal, but recognizes the primary military role of these lands. The Proposed Plan presented in this document and the alternatives to it summarized in the *Fort Wainwright Draft Resource Management Plan/Draft Environmental Impact Statement* (DRMP/DEIS), which this document incorporates by reference, are consistent with the withdrawal's major purpose. The Proposed Plan is a modification of the Preferred Alternative discussed in the DRMP/DEIS of September 1988 and benefits from public comment received on that draft.

This volume presents a Proposed Plan and summaries of four alternative management scenarios.

Proposed Plan

The Proposed Plan seeks to maintain the public's current access to the withdrawal and examine ways to promote use of forest, recreation, and mineral values without conflicting with the military's mission.

Alternative A

Alternative A is the "no action" alternative, which would provide essentially the same management which currently exists on the withdrawal.

Alternative B

Alternative B presents a program which gives the military the greatest flexibility to use the withdrawal without interference from nonmilitary users.

Alternative C

Alternative C promotes recreational use of the withdrawal.

Alternative D

Alternative D offers a series of actions designed to enhance the economic benefits derived from the withdrawn lands.

TABLE OF CONTENTS

Final Environmental Impact Statement

LIST OF MAPS

LIST OF TABLES

Proposed Resource Management Plan

LIST OF ABBREVIATIONS

ADF&G	Alaska Department of Fish and Game
AFB	Air Force Base
AFTAC	Air Force Technical Application Center
ANGTS	Alaska Natural Gas Transportation System
ANILCA	Alaska National Interest Lands Conservation Act
BLM	U.S. Bureau of Land Management
CFR	Code of Federal Regulations
DBH	diameter at breast height
DOI	Department of the Interior
DOT/PF	Alaska Department of Transportation and Public Facilities
DRMP/DEIS	Draft Resource Management Plan/Draft Environmental Impact Statement
EIS	Environmental Impact Statement
F&WS	U.S. Fish and Wildlife Service
F.M.	Fairbanks Meridian
FMP	Forest Management Plan
GVW	Gross Vehicle Weight
HMP	Habitat Management Plan
NEPA	National Environmental Policy Act
ORV	off-road vehicle
P.L.	Public Law
RAMP	Recreation Activity Management Plan
RMP	Resource Management Plan
RS	Revised Statute
TAGS	Trans-Alaska Gas System
TAPS	Trans-Alaska Pipeline System
VRM	Visual Resource Management
YMA	Yukon Maneuver Area

Introduction

Purpose and Need for Action

This plan is designed to determine the appropriate mix of nonmilitary activities and uses which parts of Fort Wainwright can support, while at the same time permitting the military's important training functions. The Bureau of Land Management (BLM), in cooperation with the Department of the Army, undertook this planning effort at the direction of Congress and the Secretary of the Interior. The Military Lands Withdrawal Act of 1986 (P.L. 99-606) required the Department of the Interior (DOI) to prepare land use plans for the Fort Wainwright Maneuver Area, commonly known as the Yukon Maneuver Area. This legislation renewed the withdrawal on these lands which were originally withdrawn in 1958. The new withdrawal is for fifteen years for "military maneuvering, training, and equipment development and testing." Congress called upon the DOI, in consultation with the Army, to develop a plan for the life of the withdrawal which recognized the preeminence of the military's mission, yet included provisions necessary for "proper management and protection of the resources and values" on the withdrawn lands. It specifically suggested that the plan address the possibilities for wildlife and wildlife habitat protection, recreational use, and mineral development.* Upon adoption of the plan, BLM and the Army will draft a Memorandum of Understanding to implement the plan.

Location

The Yukon Maneuver Area is a tract of approximately 248,000 acres southeast of Fairbanks within the Fairbanks North Star Borough. The maneuver area is roughly rectangular in shape, spanning twenty-eight miles east-to-west and seventeen and one-half miles north-to-south. It encompasses much of the land between the Chena and Salcha rivers northeast of the Richardson Highway. Tributaries of these two rivers flow through the area at the bases of two-thousand-foot hills, which predominate all but the extreme western portion of the maneuver area. Entrance into the

* The act also calls for consideration of continuation of grazing. However, grazing does not occur on Fort Wainwright. Similarly, some topics normally addressed in resource management plans and environmental impact statements, such as prime and unique farmlands, wild horse and burro management, and land acquisition are not discussed because the resource does not exist on, or the action is inappropriate given the nature of, the withdrawal.

withdrawn lands from the Richardson Highway can be gained at two points: through the main gate of Eielson Air Force Base, which is wedged between the highway and the maneuver area about twenty-six miles from Fairbanks, and via Johnson Road, which intersects the highway about ten miles south of Eielson's main gate.

Issues

This Proposed Resource Management Plan focuses on resolving issues. An issue for this withdrawal is a perceived concern, need, problem, conflict, or opportunity related to the use or management of Fort Wainwright's lands and resources. Issues for this plan are constrained by the withdrawal legislation which stated that military use is to remain predominant. The issues described below—military use, economic development, recreation, and access—are derived from a review of existing planning and management documents, suggestions from interdisciplinary planning team members, BLM and Army policy and management, and public comment. The discussion below gives the background for each issue and a set of questions focusing on specific points related to the issue.

Military Use

The withdrawal is used for a variety of military purposes described in Chapter 3. These require facilities such as firing ranges, impact areas, landing strips, and training and maneuver areas. Future military use may require changes to existing facilities or additional facilities. Military and other human intrusions can disrupt wildlife and their habitat. Several archaeological sites exist within the withdrawal, and continued protection of these sites precludes some military uses. While this plan cannot plan for or restrict future necessary military activities, it can recommend those steps the military should take to protect resource values, and it can determine actions which should be taken to enhance the military's ability to use the lands.

1. What areas or resources are especially sensitive or important and merit special protection from military activities?

2. What measures should the military take to minimize its adverse impact on resources?

3. How can hazardous material sites, if any, be identified, and how can the public be protected from them?

4. Which archaeological and historical sites should be excavated or relocated to allow for military use of these areas?

Fort Wainwright Military Withdrawal

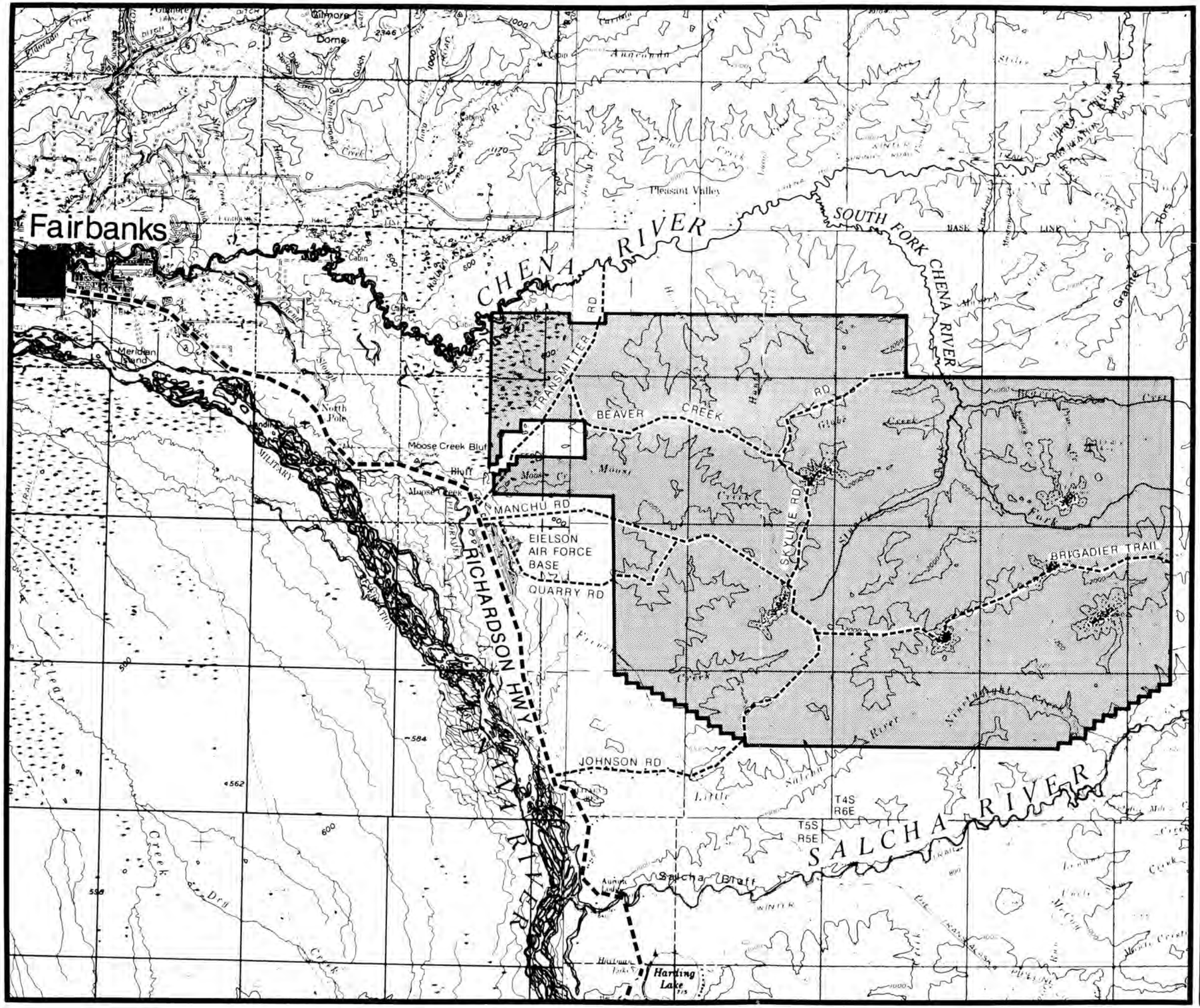
PROPOSED

Resource Management Plan

FINAL

Environmental Impact Statement

AREA MAP



Fort Wainwright Military Withdrawal (Yukon Maneuver Area)

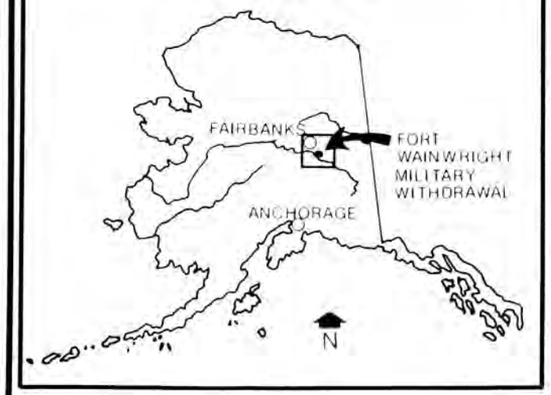
Elevations greater than 2,000 feet

SCALE

0 5 10 MILES

0 5 10 KILOMETERS

LOCATION MAP



Economic Development

The withdrawal is closed to mineral entry and location, and to mineral leasing. Section 12 of the Military Lands Withdrawal Act of 1986 instructs the Secretary of the Interior, with the concurrence of the Secretary of the Army, to determine which lands are suitable for opening to the operation of the Mining Law of 1872, the Mineral Lands Leasing Act of 1920, the Mineral Leasing Act for Acquired Lands of 1947, or the Geothermal Steam Act of 1970. There also is public interest in the commercial use of the Fort Wainwright withdrawal for trapping and forest products.

1. Should exploration and development of locatable, leasable, and salable minerals be allowed, and under what conditions and mitigating measures?

2. In what areas and under what physical and environmental conditions should forest products be made available?

3. In what areas and under what circumstances should opportunities for guiding, trapping, and other commercial activities be allowed?

Recreation

The withdrawn lands hold valuable opportunities for both consumptive and nonconsumptive recreation. Hunting, trapping, and fishing currently occur in the area, as do such varied activities as berry picking, off-road vehicle operation, wildlife viewing, trail hiking, and gold panning. A portion of the State-operated Chena River State Recreation Area abuts the withdrawal.

1. To what extent can recreational activities be accommodated in the withdrawal?

2. What, if any, recreational facilities are needed and appropriate for the withdrawn lands?

Access

The type of public access and the extent and purpose of any access within the withdrawal needs to be addressed. Any development of recreation or economic opportunities will require access.

1. What access should be provided for consumptive and nonconsumptive resource uses?

2. For what areas should ORV use be permitted, prohibited, or limited?

3. To what extent can recreational use via aircraft be accommodated?

Scope of the Planning Document

The identification of these issues does not diminish the need to address the impact of management decisions on all other resources. The Resource Management Plan is guided by the issues, but it must be comprehensive in its scope. Consequently, while Chapter 1 will focus on the alternate scenarios for addressing the issues, Chapter 2 will give a summary of all the affected environment and Chapter 3 will consider the plans' impacts on the environment's broad spectrum of values.

Criteria

The following criteria were used in the development of the resource management plan. They helped direct the planning effort in compliance with all applicable laws, regulations, and policies. The planning team submitted these criteria for public comment through a Notice of Intent and a widely distributed brochure in July 1987, and in public meetings at Delta Junction and Fairbanks in the following month.

1. All nonmilitary activities on the withdrawals will be subject to conditions and restrictions necessary to permit military use of the land.

2. Valid existing rights will be protected.

3. The plan will consider plans and policies of adjacent land owners and local governments.

4. The plan will consider wildlife and wildlife habitat, control of predatory and other animals, recreation, and prevention and appropriate suppression of fires from nonmilitary activities.

5. Wildlife and wildlife habitat will be managed consistent with a 1986 cooperative agreement between the Army, the Alaska Department of Fish and Game, and the U.S. Fish and Wildlife Service.

6. The plan will consider opening of lands to the mining laws.

7. Public access needs will be addressed, though military necessity, security, and public safety dictate that general public access will not be permitted on certain portions of the withdrawals.

8. Subsistence uses and needs will be considered in accordance with Sec. 810 of the Alaska National Interest Lands Conservation Act.

9. The plan will make no wilderness suitability recommendations.

10. The plan will utilize existing data, information, plans, and land use analyses.

11. BLM and the military will cooperate in preparing the plan which will be limited to resources and uses under BLM's administration and control.

12. The plan will specify decisions to the maximum extent practical and minimize the preparation of more specific activity plans.

13. The plan will not address contamination by military weapons and their decontamination as issues. Sec. 7 of the Military Lands Withdrawal Act establishes the Army's responsibilities for these actions.

Chapter 1
Alternatives

Introduction

Both the National Environmental Policy Act (NEPA) and BLM's resource management planning regulations require the formulation of alternatives in the development of land management plans. Each alternative presented in the Draft Resource Management Plan (DRMP) and summarized in a table at the end of this chapter represents a complete and reasonable plan to guide future management of public land and resources. (For a full discussion of the alternatives, see the DRMP issued in September 1988.) This chapter presents the Proposed Plan by describing future management that is common among all the alternatives and those elements of future management that are specific to the Proposed Plan.

Military Activities and Constraints on Alternatives

The Military Lands Withdrawal Act of 1986 mandates that the Department of the Interior, in coordination with the Department of the Army, plan for the nonmilitary uses and resources of the withdrawal. The Proposed Plan presented here focuses on the nonmilitary potential of the Fort Wainwright withdrawal; it does not propose various scenarios for the military's conduct of their mission. In accordance with the Act, the plan recognizes the military's primary role on the land. The planning team has limited all alternatives to those nonmilitary uses and resources which are viable within the constraints necessary for protecting national security, ensuring public safety, and providing for forseeable military requirements for training and maneuvering.

Stuart Creek Impact Area

The Stuart Creek Impact Area is a roughly six-mile square tract into which the Army and Air Force fire munitions. The Air Force conducts over 230 days of training a year in the air space above the Yukon Maneuver Area (YMA); its heaviest activity occurs in the impact area along Stuart Creek where it has a mock enemy airstrip, targets, and electronic sensors to score their training activities. Some of the ordnance expended in the area has produced, and continues to produce, unexploded duds. Disturbance can cause these duds to explode. The Air Force uses laser and laser-guided weapons on the Stuart Creek Impact Area. Lasers can damage vision if they strike the eye, though the Air Force normally has its lasers set

to a mode that is not a hazard. The military rarely enters the impact area, and does so only after taking stringent precautions. Under similar controls and conditions and within the parameters of the various alternatives, some nonmilitary users may gain access to the area. However, because of the dangers inherent in traveling in the impact area and the wide and unpredictable areas needed for casual uses such as hunting, fishing, and trapping, none of these or any other casual or recreational activities would be allowed under any alternative in the impact area.

AFTAC Site

The Air Force Technical Application Center or AFTAC lies immediately east of Transmitter Road in the northwest section of the YMA. The Air Force operates a series of ground sensors continuously on the AFTAC to detect seismic disturbances. Because local ground disturbance can disrupt these instruments' readings, public access to the area is restricted.

Training Areas

Most of the YMA is designated as training areas. The western third of the withdrawal receives the greatest use because it is the easiest part for troops to reach, but the Army trains on all parts of the tract outside the impact area and the AFTAC site. The YMA is the most convenient military land for ground training of soldiers at Fort Wainwright, especially during the summer when it is particularly expensive and time-consuming to attempt training on the portions of Fort Wainwright south of the Tanana River. Some training, particularly combined arms live fire exercises which normally occur three or four times a year, preclude civilian access to parts or all of the withdrawn lands.

Management Common to All Alternatives

Management Actions

The following management actions are ones which BLM and the Army consider appropriate to all the new alternatives and which, explicitly or implicitly, are the current policy or practice on the withdrawal. In some cases these action statements stand on their own; in some instances statements in the various alternatives give further direction in how they are to be accomplished.

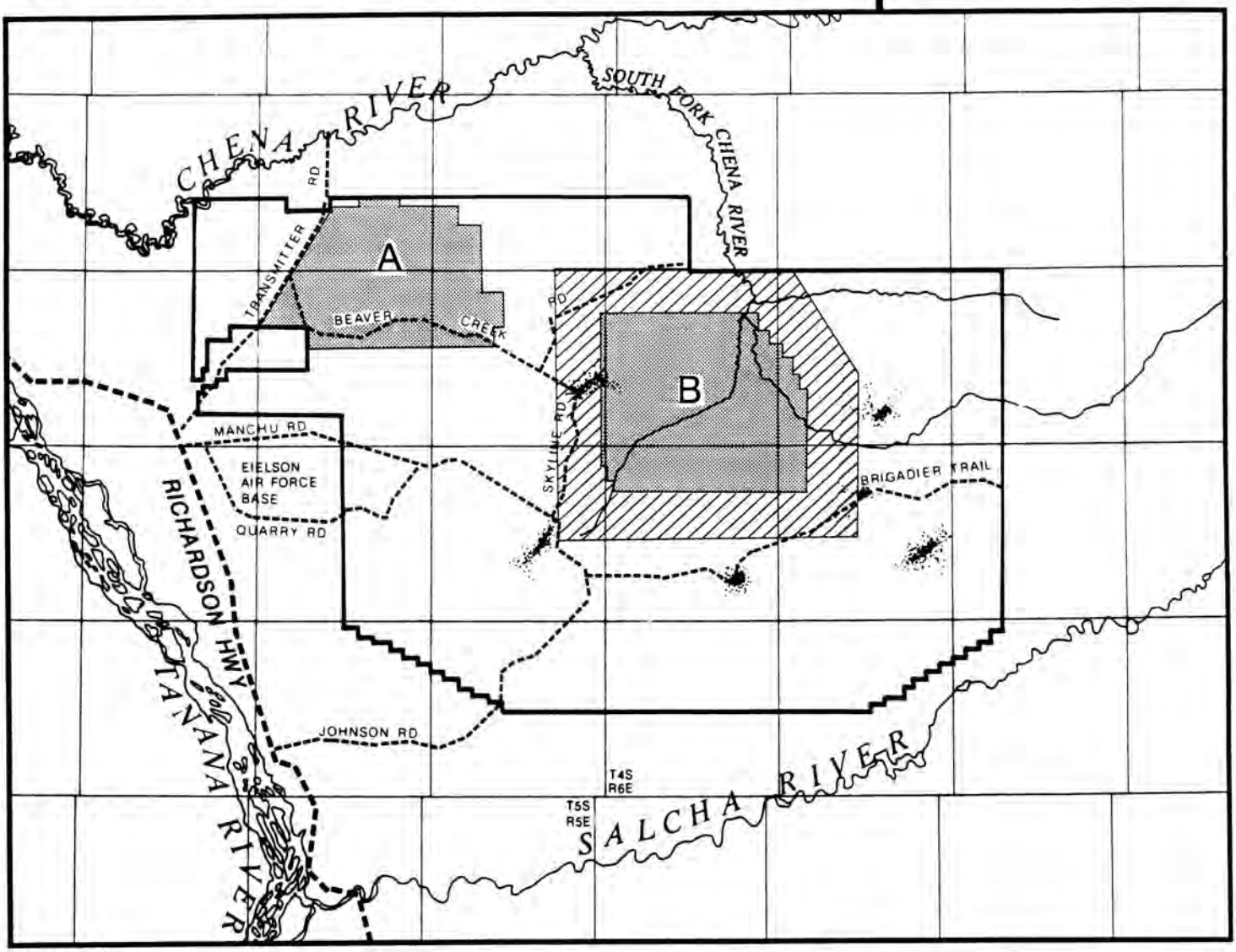
Access

1. Due to the dangers of unexploded munitions inherent in impact areas, the Stuart Creek Impact Area is closed to all public access and use. Because of the national security interest in not disturbing the ground in the AFTAC site, it too is closed to all public access and use, except as permitted by Proposed Action 4. (See Closed Areas map.) Uses, such as mining, timber harvest, and scientific investigations, may be conducted in these areas if they are allowed by the plan and if they are approved by the authorizing officer. These areas are closed to off-road vehicle (ORV) use, unless specifically approved for particular use.

Fort Wainwright (YMA)

PROPOSED Resource Management Plan
FINAL Environmental Impact Statement

Closed Areas



Legend

Closed to all unauthorized nonmilitary activities:

A-AFTAC Site
B-Stuart Creek Impact Area

Two mile buffer all or part of which may be closed to all nonmilitary activities when firing occurs into impact area

SCALE
0 5 10 MILES
0 5 10 KILOMETERS

LOCATION MAP

2. If additional potentially dangerous sites are found, the federal government would close them to public use.
3. When firing occurs into the impact area, the affected portion and a two mile buffer adjacent to it are off limits to all access and use.
4. All portions of the withdrawal are subject to temporary closures when the military needs them to conduct training and testing. Such closures would be for the minimum areas and periods necessary for the military's exclusive use.
5. Unless explicitly opened to public use by the plan or, on a case by case basis, by the Army, all military structures would be off limits to nonmilitary use.
6. The Army would clean up asbestos and other debris around the two Nike battery sites as funding is made available. Until this is done, these buildings and the grounds immediately around them are off limits to nonmilitary personnel. This does not preclude driving by the sites on Johnson and Manchu roads.
7. Mining and other activities which involve substantial ground disturbance are prohibited from all drop zones and landing fields, where a relatively smooth surface is necessary for safe military operations, and within one mile of all existing roads and major trails (see Roads and Major Trails map), because most military training occurs near the road system. Mineral material sites are exceptions to this. They may be placed within one mile of extant roads with the concurrence of the military. Timber harvests do not normally result in the type of substantial ground disturbance contemplated in this restriction.
8. Signs would be maintained at all major road and trail entrances to the withdrawn lands. The signs would identify the property and the requirements for entering.
9. No ORVs would be allowed to run along the Trans-Alaska Pipeline System's work pad used for maintenance along its line without the permission of Alyeska Pipeline Service Company, BLM, and the District Corps of Engineers. ORVs weighing less than 1,500 pounds may cross the pipeline. ORVs weighing more than 1,500 pounds would need approval to cross the pipeline.

Air, Soil, Water, and Vegetation

Nonfederal uses of the withdrawal must conform with applicable federal, state, and borough laws and regulations concerning protection of air, soil, and water. Federal uses would comply with federal law, and with state and local law to the extent consistent with the federal mission.

All proposed activities, military and nonmilitary, for the withdrawn lands are evaluated, under the authority of NEPA, for impact on air, soil, water, and vegetative resources. Activity plans will comply with the Bureau of Land Management policy on riparian resources management, and sites disturbed by nonmilitary activities will be restored in accordance with Bureau riparian guidance.

Application of all herbicides and pesticides would only be conducted in accordance with the Fort Wainwright Pest Control Plan and all applicable laws and regulations.

Fish and Wildlife Habitat

Pursuant to the Sikes Act, the 6th Infantry Division (Light) has entered into a Cooperative Agreement with the U.S. Fish and Wildlife Service (F&WS) and with the Alaska Department of Fish and Game (ADF&G). The agreement calls for the development of fish and wildlife management programs which, within the constraints of the Army's needs to fulfill its mission, would improve habitat, determine "the extent of equitable military and nonmilitary access" to harvesting and enjoyment of fish and wildlife, determine a consensus on the "need and means for controlling, protecting, stocking, or restoring" desirable species, and develop with F&WS and ADF&G an inventory of fish and wildlife resources on the YMA. BLM associates itself with these responsibilities through adoption of a Resource Management Plan and associated implementing Memorandum of Understanding. BLM would participate with the Army, F&WS, and ADF&G in developing these programs through a Habitat Management Plan for the withdrawal and would join as a signatory agency in any revision of the Cooperative Agreement.

There are no known peregrine falcon nests in the withdrawal. But their population is increasing in the state. Should any occupied nests be discovered on the withdrawal, the mandates of the Endangered Species Act will apply.

Forestry

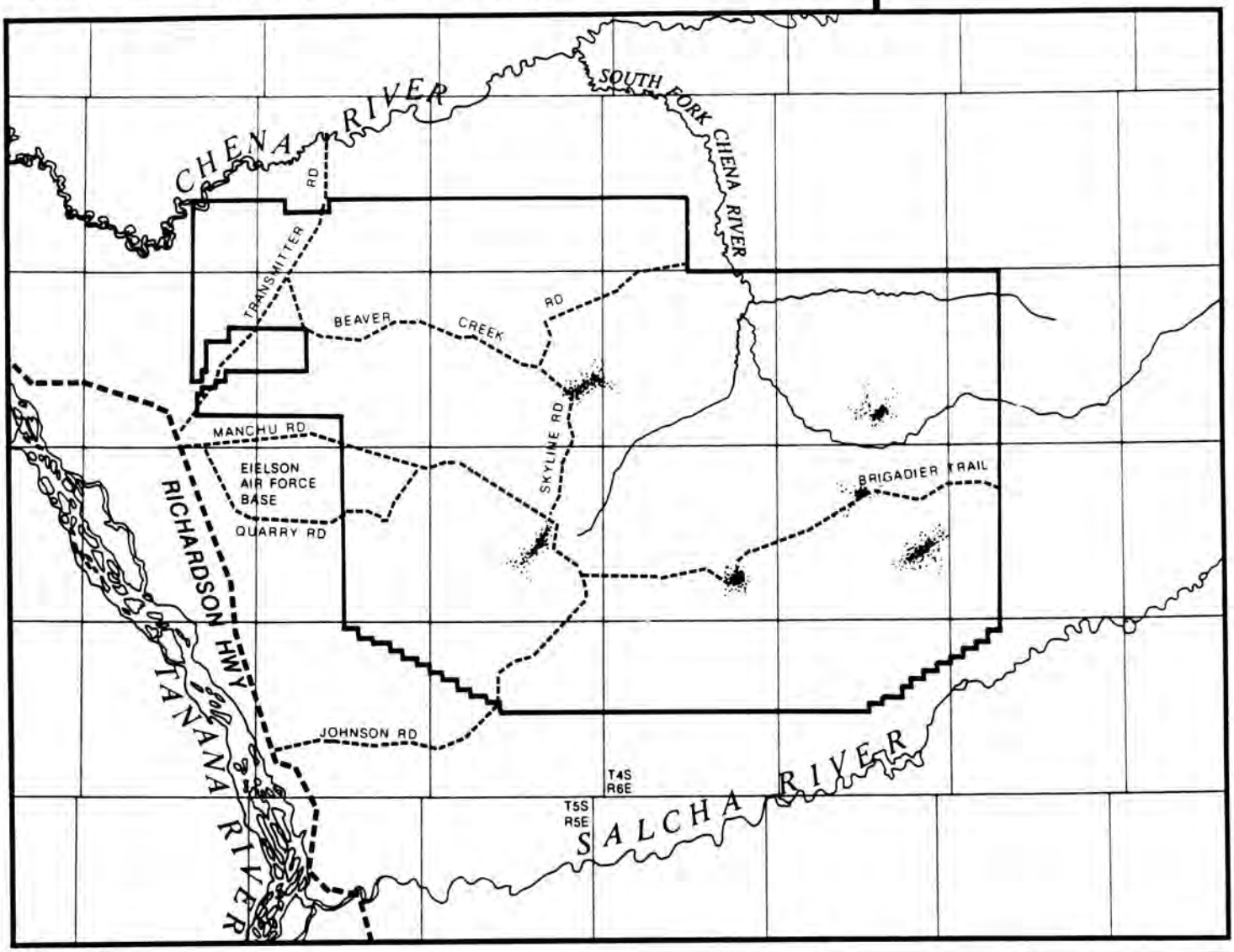
Any sale of timber on the withdrawn lands would be governed by common BLM timber management practices, contract stipulations, and the mandates of the State's forest practices regulations. Common requirements include:

a. the construction, improvement, and maintenance of safe and environmentally sound road systems. Loggers may be required to properly locate and install culverts, stabilize cuts and fills, and properly grade roads.
b. the felling and yarding of timber in such a way as to protect soil and water quality, residual trees, and human safety. Some provisions may be aerial yarding to protect fragile sites, limbing before yarding to protect residual trees or soil or water quality, and directional felling to protect buffer strips, streams, and adjacent stands.
c. the treatment of a logged site to prepare it for the next generation of trees. Some ways to prepare a site are to rip compacted skid roads, abandoned haul roads, and landings and to scarify, slash, pile, and underburn the logged site.
d. the disposal of logging slash for silvicultural and/or fire hazard reduction purposes.
e. mitigation measures for protecting wildlife habitat. Examples of some measures are the removal of debris dams from streams, and leaving wildlife trees within a cutting area.

Fort Wainwright (YMA)

PROPOSED Resource Management Plan
FINAL Environmental Impact Statement

Roads and Major Trails



Legend

Roads and major trails

SCALE
0 5 10 MILES
0 5 10 KILOMETERS

LOCATION MAP

f. other miscellaneous provisions, where appropriate, such as meeting minimum fire requirements and application of disease control measures.

Cultural Resources

The Army prepared a historic preservation plan (*Historic Preservation Plan for U.S. Army Lands in Alaska*) in June 1986. In accordance with Sec. 106 of the National Historic Preservation Act, the Army's plan requires that an inventory be completed before all ground-disturbing activities and, where appropriate, mitigation of cultural resources. The general program established by this historic preservation plan, as modified by this RMP and any Cultural Resource Management Plan mandated by this RMP, will guide cultural resource management during the period of the withdrawal.

Recreation

The Army conducts its outdoor recreation management role on the withdrawn lands so as to furnish equal opportunity to the public for recreation activities and to furnish as wide a variety of recreation as conditions allow.

Lands

Congress has designated the withdrawn lands as appropriate for military use. Consequently, neither the Proposed Plan nor the alternatives propose that any of these lands be made available for disposal, including State or Native selection, sales under FLPMA or the Recreation and Public Purposes Act, or exchanges.

Rights-of-Way

There is a right-of-way on the YMA for a corridor for the Trans-Alaska Pipeline, which passes through the extreme southwestern corner of the withdrawn lands. No rights-of-way would be allowed in any of the closed areas of the withdrawal.

Private individuals and the State may accept directly a congressionally granted right-of-way under the authority of Revised Statute 2477, if constructed prior to the withdrawal of these lands in 1958. The federal government would work cooperatively with the State to identify all rights-of-way claims made pursuant to RS 2477 on public lands for administrative purposes only. The validity of such claims can only be determined in a court of competent jurisdiction.

Minerals

The military may use sand and gravel for its purposes; this authority flows from the military withdrawal act itself.

Measures to safeguard resource values outlined in 43 CFR 3100, 43 CFR 3600, and 43 CFR 3809 will apply to mineral development on the withdrawn lands.

Under the terms of the Military Lands Withdrawal Act of 1986, should the withdrawn lands be opened to mineral location, mineral patents would convey title to locatable minerals only. These patents would also carry the right to use as much of the surface as is necessary for mining under the guidelines established by the Secretary of the Interior by regulation.

Subsistence

The federal government would follow the procedural requirements mandated by Section 810 of the Alaska National Interest Lands Conservation Act where appropriate in the development of any additional discretionary plans or actions affecting all or portions of the military lands.

Proposed Plan

The actions prescribed in the Proposed Plan preserve the primary function of the withdrawal—military training—and allow economic development and continued recreational activities within certain environmental constraints. The military's need for large tracts of undisturbed lands, the healthy state of the withdrawal's current habitat, the rather modest prospects for economic development, and the desirability of emphasizing undeveloped recreational activities make such a diverse multiple use plan particularly attractive. The alternative also recognizes the critical safety questions, both for civilians and soldiers, inherent in utilizing areas in which troops train with live ammunition.

Management Actions

The following actions are consistent with achieving this goal.

Access

Proposed Action 1

The public may enter the post after gaining permission from the Army at Fort Wainwright. This pertains to all forms of access. They are expected to comply with all rules concerning restricted access and permanently and temporarily closed portions of the withdrawal.

Proposed Action 2

The public may use unimproved remote landing areas after complying with notification requirements and provided that this use does not interfere with military activities or incur liability to the federal government.

Proposed Action 3

Appropriate signs would be erected to warn the public and prevent public access into the impact area and onto the AFTAC site. Signs would warn of the potential closure of the buffer area around the impact area which encompasses some of the road network.

Proposed Action 4

Nonmilitary use of off-road vehicles (ORVs) and road vehicles is permitted in some portions of the withdrawal and under certain conditions. The Stuart Creek Impact Area and the AFTAC site are closed to vehicle use as indicated in the management common to all alternatives, and use of the remainder of the lands is limited as follows:

Road Vehicles and ORVs of 1,500 pounds or more — Vehicles of more that 1,500 pounds gross vehicle weight (GVW) may travel on Johnson, Skyline, Quarry, Manchu, Transmitter and Beaver Creek roads and Brigadier Trail. (GVW is the manufacturer's maximum laden weight, which is the vehicle weight plus its recommended maximum load.) Roads may be added or deleted from this list as necessary to protect the environment or enhance the military's mission. A permit is required to use

vehicles of this size off of these routes. Generally permission to use these vehicles off these routes would only be granted when there is no danger of such use interfering with military operations, damaging the habitat, or detracting from the recreational value of the withdrawal.

ORVs of less than 1,500 pounds — No permit would be required for nonmilitary use of ORVs less than 1,500 pounds GVW. General summer use of these ORVs would be limited to the roads listed above and to trails with low erosion potential. These ORVs may operate off these roads and trails during periods with snow cover adequate to prevent disturbance of the vegetative cover. The military may also exclude public use of ORVs in certain areas where their use would be detrimental to the military's mission.

An accompanying Vehicle Use map indicates the roads on which road and off-road vehicles may operate, the trails on which ORVs of less than 1,500 pounds can travel, and the AFTAC site and impact area from which vehicles are generally excluded. Trails suitable for ORVs of less than 1,500 pounds may be added to or deleted from those displayed on the map. The authorized officer, as established in the BLM-Army Memorandum of Understanding to implement this plan, may permit addition or deletion of summer use of ORVs or road vehicles on specific trails for specific purposes or under certain ground conditions. During the winter, ORVs generally can use all areas of the withdrawal, except the AFTAC site and the impact area.

Vegetation

Proposed Action 5

In the course of developing the military, recreational, and economic potential of the withdrawn lands, the federal government would seek to take advantage of opportunities to improve the fort's vegetation. Military and nonmilitary activities outside of the impact area would limit vegetation disturbance, particularly to wild food sources such as berries, as much as possible consistent with military needs and the goals of recreation and economic development.

Visual Resources

Proposed Action 6

The withdrawal is classified as Visual Resource Management (VRM) 4. The management objective for VRM 4 areas is to provide for activities which require major modifications of the existing character of the landscape.

Fish and Wildife Habitat

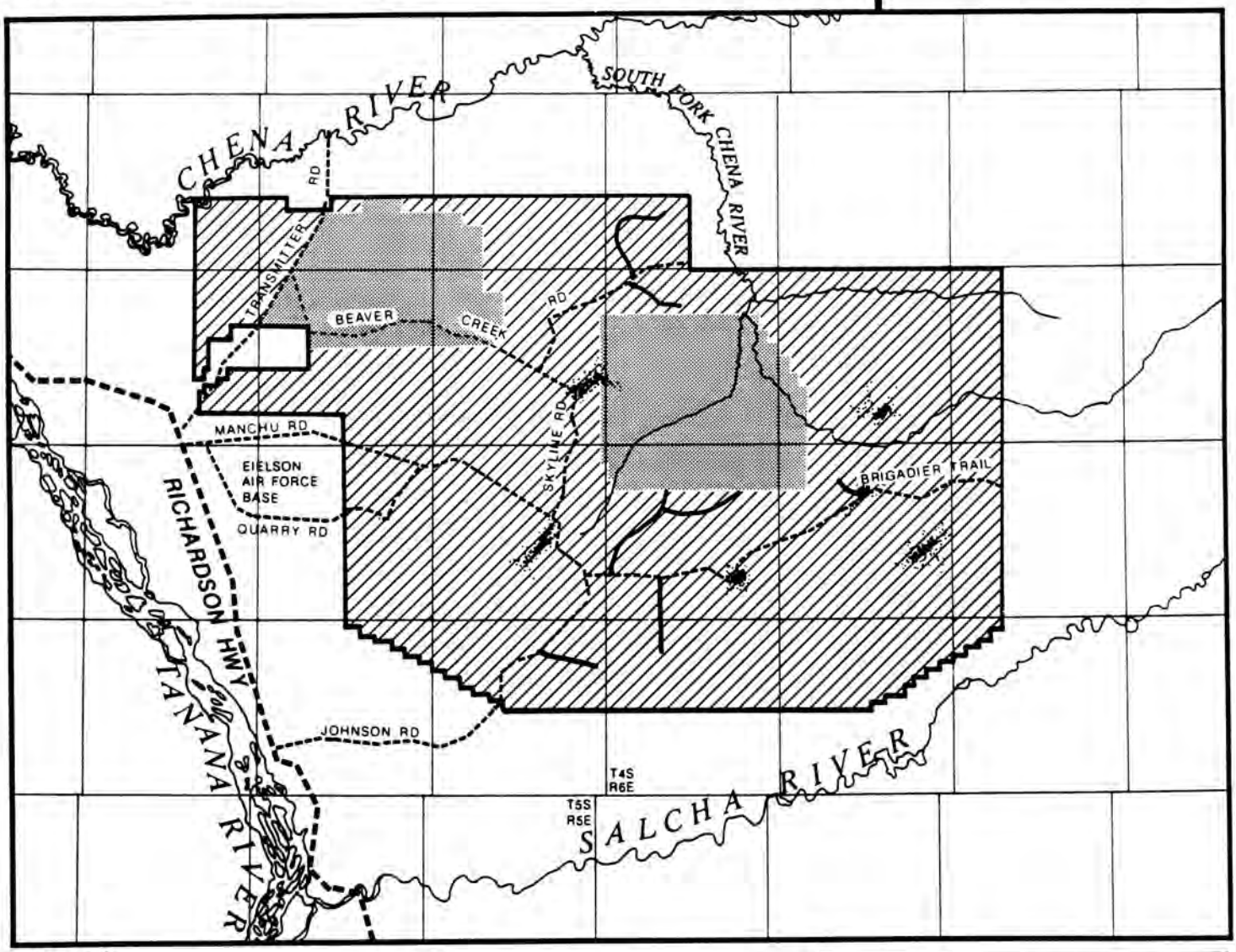
Proposed Action 7

Develop and implement a Habitat Management Plan (HMP) to manage existing habitat. The HMP should manage toward the ADF&G's goals for species. Among other questions, the HMP should consider what, if any, water quality control program is necessary, the implementation of a riparian resource inventory, and enhancement programs for riparian sites in less than good condition. The HMP should be coordinated with the Forest Management Plan outlined in

Fort Wainwright (YMA)

PROPOSED Resource Management Plan
FINAL Environmental Impact Statement

Vehicle Use



Legend

- Roads and trails on which all vehicles may operate
- Roads and trails on which nonmilitary vehicles less than 1500 lbs. may operate
- Areas closed to nonmilitary vehicle use at all times (nonmilitary vehicles must remain on Beaver Cr. Road in AFTAC)
- Areas closed to nonmilitary vehicle use during summer. During the winter vehicles generally can use these areas

SCALE
0 5 10 MILES
0 5 10 KILOMETERS

LOCATION MAP

Proposed Action 8 and the Fire Management Plan noted in Proposed Action 17. The plan would be consistent with the military's mission.

Forestry

Proposed Action 8

Develop a Forest Management Plan to determine the opportunity for harvest and the sustainable allowable cut of timber and fuel wood. Such a plan must remain within the constraints of the military mission; public safety and preservation of habitat and recreation are other values which should be considered. It may, for example, mandate the maintenance of uncut buffer strips along streams and lakes. (It is understood that forests in the withdrawal fall under BLM's restricted category for management; that is, management of the withdrawal is primarily for the military, but timber harvests are permitted. The Forest Management Plan should address allowable harvest levels, reforestation methods, and appropriate silvicultural methods by measuring the impact of each on military needs, recreational opportunities, and economic considerations.)

Cultural Resources

Proposed Action 9

The BLM and the Army will develop a Cultural Resource Management Plan in consultation with the State Historic Preservation Officer. The CRMP will address the requirements of Sec. 110 of the National Historic Preservation Act. It will follow the general directions outlined in the *Historic Preservation Plan for U.S. Army Lands in Alaska.* In addition it will provide for testing and evaluation of archaeological site XBD-095. If this site is significant, it will be excavated. Other cultural resources will be inventoried and, if necessary, mitigated prior to anticipated ground-disturbing activities. Any resources found will be excavated and cleared. Cultural resources will be managed for their information potential.

Trespass

Proposed Action 10

Only the federal government and private developers authorized by the government may erect or maintain structures on the withdrawal. All unauthorized use of the land or resources will be investigated and either permitted or stopped. All unauthorized structures are subject to possession by the government following proper notice.

Recreation

Proposed Action 11

All those who enter the withdrawn lands must comply with the military's rules. These presently require:

a. all those who enter to hunt, fish, or trap must sign a liability release form and attend a Hunting/Trapping/ Fishing briefing prior to undertaking these activities each year.
b. hunters and trappers must submit completed harvest reports to the appropriate Army office.

Proposed Action 12

Guides, outfitters, and air taxi services may operate on the withdrawal, provided they comply with other regulations concerning nonmilitary use of the land. Guides, outfitters, and air taxi services are responsible for ensuring that their clients comply with these rules. Guides and outfitters must obtain a permit to use federal lands and comply with other provisions of 43 CFR 8372.

Lands

Proposed Action 13

The BLM may issue leases and permits pursuant to 43 CFR 2920. These use authorizations are subject to approval by the Army, which may reject the proposal or require additional stipulations to assure the military's unhindered use of the withdrawal.

Rights-of-Way

Proposed Action 14

Rights-of-way may be granted if they do not conflict with the military's mission. They should be subject to terms and conditions to assure that military needs are met.

Minerals

Proposed Action 15

The withdrawal will remain closed to the operation of the Mining Law of 1872, the Mineral Leasing Act of 1920 as amended, the Mineral Leasing Act for Acquired Lands of 1947, and the Geothermal Steam Act of 1970. Pursuant to Sec. 12(a) of the Military Lands Withdrawal Act, the Army and BLM, by 1996 and at least every five years thereafter, will jointly reconsider whether it would be appropriate to open portions of the withdrawal to the operation of these mineral laws.

Proposed Action 16

Pursuant to Section 1 of the Military Lands Withdrawal Act of 1986, the withdrawal is closed to all forms of mineral material disposal, both sale and free use, other than that which supports military activity.

Fire Management

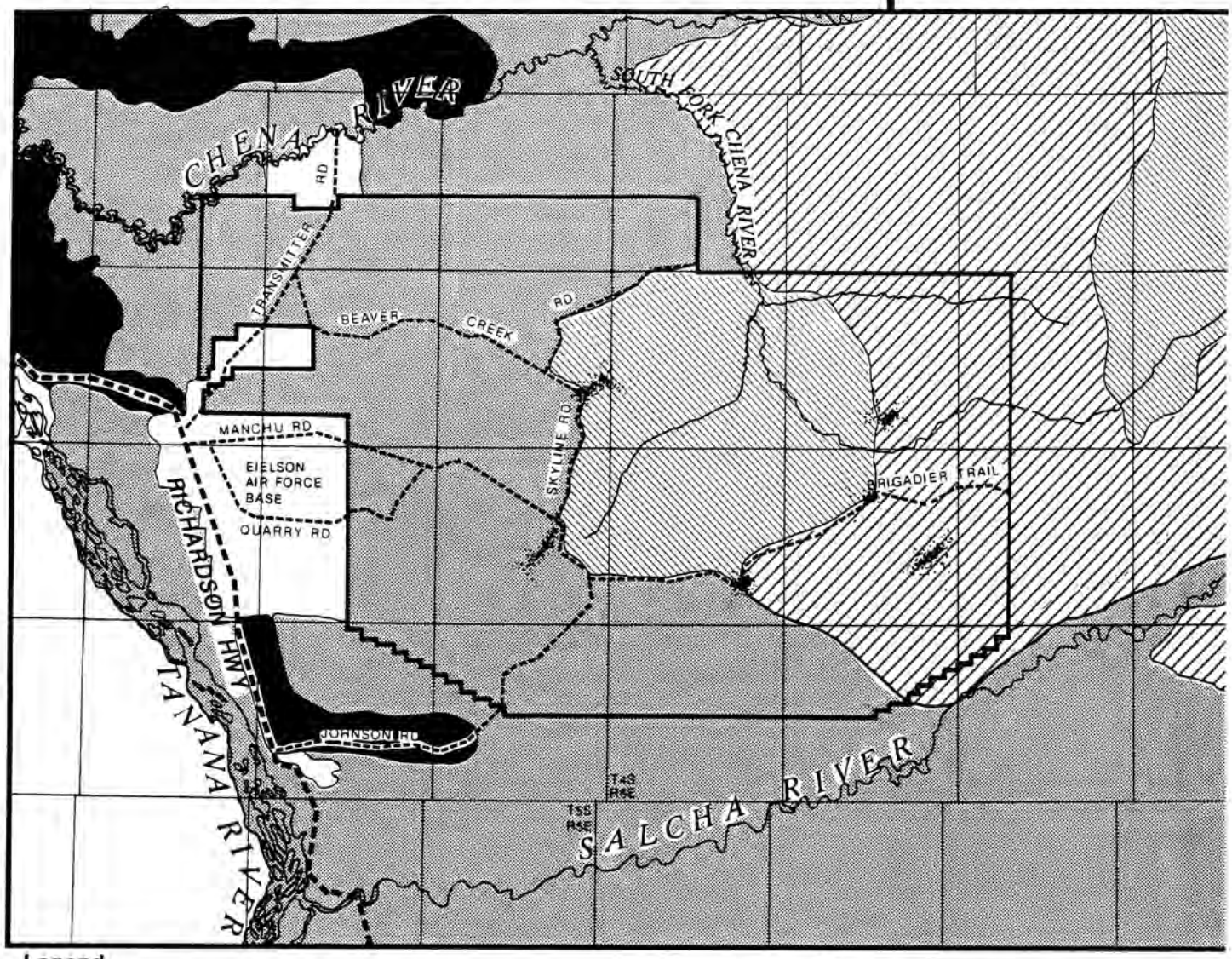
Proposed Action 17

The withdrawal would be divided into three fire management areas and a number of Critical fire suppression sites. Virtually all the area within the firebreak surrounding the Stuart Creek Impact Area would be in a Limited fire protection area. The exceptions would be those Air Force facilities in the impact area which now receive Critical protection under the Army's fire protection plan, and any future such facilities for which the Army or Air Force seek protection. These specific sites, as well as similar sites outside the firebreak, would receive Critical protection under this plan. The area east of a trail from Brigadier Trail down Ninetyeight Creek would be designated a Modified fire protection area. The remainder of the YMA would have Full fire protection. (See the Fire Management Categories Map.) Future changes in suppression management can be effected through the Interagency Fire Management Plan with the

Fort Wainwright (YMA)

PROPOSED Resource Management Plan
FINAL Environmental Impact Statement

Fire Management Categories



Legend

- Critical Protection
- Full Protection
- Modified Action
- Limited Action
- Unplanned

SCALE
0 5 10 MILES
0 5 10 KILOMETERS

LOCATION MAP

concurrence of the military. The BLM, with the concurrence of the Army, will draft a Fire Management Plan to reduce the fire hazard on the withdrawal.

The following table summarizes the actions prescribed by the alternatives. The display is designed to facilitate comparisons of the actions concerning various facets of resource management among the alternatives. A blank space in the matrix indicates that, other than the management designated in the management common to all alternatives, the corresponding alternative does not mandate protection, development, or other initiative similar to that described in other alternatives.

Summary of the Proposed Plan and the Alternatives

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Access	1. public may enter with permission from Army		1. no nonmilitary access	1. no restrictions on access	1. same as Proposed Plan
	2. remote landing areas available after notifying Army	1. same as Proposed Plan		2. same as Proposed Plan	2. same as Proposed Plan
	3. signs at roads to impact area and AFTAC site		2. locked gates at all entrances to withdrawal	3. warning signs at entrances to withdrawal 4. signs and gates at roads to impact area and AFTAC site	
	4. no nonmilitary ORVs or road vehicles in impact area, AFTAC site (except Beaver Cr. Rd.), or other military training facilities; no permit needed to use ORVs less than 1,500 lbs. but must remain on certain roads and trails; need permit to use larger ORVs off roads	2. wheeled vehicles may use roads and trails; ORVs allowed off roads		5. same as Proposed Plan, except no access on Beaver Cr. Rd.	3. same as Alternative C

Note: Additional management direction for each alternative is contained in Management Common to All Alternatives.

Summary of the Proposed Plan and the Alternatives

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Access (cont.)					4. restrict public use of economic development roads 5. no military activities at economic development control facilities
Vegetation	5. improve and protect vegetation resources in course of conducting other actions	3. protect significant vegetation resources from military actions			
Visual Resources	6. all VRM 4		3. all VRM 4	6. west half of area, except flats at extreme west VRM 3; all other VRM 4	6. same as Alternative C
Fish and Wildlife	7. HMP to manage habitat	4. encourage military clearing be done so as to enhance habitat	4. HMP to conserve wildlife without interfering with military	7. HMP to improve hunting	7. HMP to accommodate economic development and trapping permit system

Note: Additional management direction for each alternative is contained in Management Common to All Alternatives.

Summary of the Proposed Plan and the Alternatives

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Fish and Wildlife (cont.)				8. emphasize maximum participation in trapping	8. establish trapping permit system to promote commercial trapping and sustained yield
Forestry	8. FMP to study opportunities for a sustainable cut of fuel wood and timber	5. military personnel and civilian employees can take firewood	5. harvest only to aid military activities	9. FMP to emphasize personal use firewood harvesting	9. FMP to emphasize commercial harvesting
Cultural Resources	9. undertake CRMP; test and evaluate site XBD-095; inventory, evaluate, and mitigate as necessary	6. inventory, evaluate, and mitigate as necessary	6. inventory, evaluate, and mitigate all areas	10. same as Alternative A	10. same as Proposed Plan
Trespass	10. unauthorized use of land and resources forbidden	7. no unauthorized cabins		11. same as Alternative A	11. same as Alternative A

Note: Additional management direction for each alternative is contained in Management Common to All Alternatives.

Summary of the Proposed Plan and the Alternatives

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Recreation	11. recreationists must follow military rules; these now require those who hunt, fish, or trap to sign a liability release form and attend a briefing and hunters and trappers must submit harvest reports 12. guides,etc. may operate with a BLM permit	8. hunt, fish, and trap according to Army Reg. 420-6			
		9. military minimizes its use during September		12. Army training stops during moose season 13. Air Force training stops during moose season 14. limit training to weekdays when possible	12. same as Alternative A

Note: Additional management direction for each alternative is contained in Management Common to All Alternatives.

Summary of the Proposed Plan and the Alternatives

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Recreation (cont.)				15. post road and mileage signs 16. post recreational information signs 17. establish a public information program 18. RAMP for campgrounds, trails, shelters, and other facilities	
Lands	13. leases and permits issued if they do not hinder military use	(current policy, not stated in DRMP)			
Rights-of-Way	14. rights-of-way may be granted if they do not conflict with military needs	10. same as Proposed Plan		19. same as Proposed Plan	13. grant rights-of-way for economic developments other than mining
				20. improve Brigadier Trail	14. same as Alternative C

Note: Additional management direction for each alternative is contained in Management Common to All Alternatives.

Summary of the Proposed Plan and the Alternatives

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Minerals	15. closed to new locatable and leasable mining; reevaluate determination per Sec. 12(a) of P.L. 99-606	11. closed to mining, except for mineral materials	7. buy out extant claims; closed to new locatable or leaseable mining	21. closed to new mining, except for mineral materials; existing mining access requires military approval	15. open to mineral location with regulations 16. open to mineral leasing with regulations
	16. closed to mineral material disposal	12. consider military activities in allowing mineral material sale and free use for road work sites	8. consider military activities in allowing mineral material free use for road work	22. consider military and recreation activities in allowing mineral material sale and free use for road work sites	17. same as Alternative A
Fire Management	17. limited suppression for Stuart Cr. Impact Area; Critical for Air Force facilities; Modified east of a trail from Brigadier Trail down 98 Cr.; Full for remainder; change through Interagency Fire Mgmt. Plan; develop a Fire Management Plan.	13. Limited for Stuart Cr. Impact Area; except Critical for Air Force facilities; Full for strip around YMA perimeter; rest Modified	9. Limited for Stuart Cr. Impact Area; Critical for Air Force facilities and mining improvements; Modified east of S. Fork Chena R. and north of Beaver Cr.; Full for remainder	23. Limited for Stuart Cr. Impact Area; Critical for Air Force facilities and mining improvements; Modified east and north of S. Fork Chena R.; Full for remainder	18. same as Alternative B

Note: Additional management direction for each alternative is contained in Management Common to All Alternatives.

The following table provides estimations of the level of activity for recreational use and mining under the various alternatives. Discussion of the development potential of the Yukon Maneuver Area can be found at the beginning of Chapter 3.

Activity Projections 1993-2003 for the Proposed Plan and the Alternatives

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Recreation					
Visitor days	9,000	9,000	0	10,000	9,000
Locatable Minerals					
placer operations	0-1	0	0	0	0-1
Acres impacted*	0-8/yr.	0-4/yr.	0	0-4/yr.	0-8/yr.
Mineral Material Sales**					
Gas line sites	0	1	0	1	1
Acres impacted	0	5 - 10	0	5 - 10	5 -10

*Does not include acreage for roads and structures.
**Assumes TAGS or ANGTS is built, but not both.

The following table summarizes the anticipated impacts of the Proposed Plan and the alternatives. Chapter 3 elaborates on the information concerning the Proposed Plan. See the DRMP for an elaboration of the information for the other alternatives.

Summary of Environmental and Military Consequences

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Air, Soil, Water, and Vegetation	Greater protection from ORVs than current mgmt.; potential increases in erosion, sedimentation and traffic-induced dust along roadways from timber harvests, but less from mining	Small impacts from ORVs; little if any impact from fuel wood gathering; no effects from mining; slightly less aggressive fire suppression effort may increase acres burned and smoke discharged into atmosphere	Restriction on public access minimizes nonmilitary impacts; less effects from sand and gravel extraction than other alternatives because no sales are allowed	ORV impacts will be the same as in the Proposed Plan and there will be little if any impact from fuel wood gathering	More impacts due to ground clearing and road construction for development; increased potential for erosion and sedimentation under more agressive timber harvesting program; ORV and mining impacts same as in Proposed Plan
Fish and Wildlife	HMP, FMP, and efforts to improve vegetation in course of developing military, economic, and recreational values will tend to increase open habitat, while moderately more aggressive fire suppression plan will favor succession to climax forest; restrictions on ORV use may decrease large game harvest, but hunting by miners (if mining is eventually allowed) could cause small increase in game harvest	Current healthy animal populations would be maintained, despite growth in military population; fewer nonmilitary impacts on wildlife than all but Alternative B because there is no mining, timber sales, or recreational improvements	Exclusion of hunters and trappers will cause a temporary increase in game and furbearers not at carrying capacity; ultimately natural forces will eliminate excess and maintain natural equilibrium	Personal use fuel wood gathering will create little new open habitat, but HMP could mandate actions which by providing more browse could substantially enhance moose population; modest increase in visitor days will increase pressure on wildlife and, barring adoption of countermeasures as part of the HMP, there could be a decrease in the populations of sensitive species	FMP which helps induce clear cutting will tend to increase open habitat which will favor browsers and grazers; improving and expanding road network and any new mines which develop will put greater pressure on wildlife, particularly game

Summary of Environmental and Military Consequences

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Cultural Resources	Timber harvests and military activities could impact sites; no disturbance from mineral material extraction, but possibly some disturbance if other mining eventually allowed; XBD-095 information will be preserved	Military activities and sand and gravel extraction can disturb sites	Military activities and road use sand and gravel sites can disturb sites; there will be less potential for intentional and unintentional disturbance of cultural sites by civilians; far more cultural sites will be inventoried and evaluated under this alternative compared to all other alternatives	Small timber harvests, military activities, and sand and gravel extraction can disturb cultural sites; a small increase in visitor days and improvement of Brigadier Trail could increase intentional and unintentional disturbance of sites	Timber harvests, mining, and military activities could impact sites; encouraging roads and improving Brigadier Trail will tend to increase potential for intentional and unintentional disturbance of cultural sites; XBD-095 information will be preserved
Socio-economics	Preserves current economic benefits of recreation; may add new source of timber and firewood for both personal and commercial harvest; private developers would have the additional of hauling sand and gravel greater distances; may result in mining opening	Preserves current economic benefits of recreation, personal firewood gathering, sales of sand and gravel, and extant mining claims	Economic benefits of recreation will shift to other areas of Alaska and some recreation may not take place; eliminates benefit of personal firewood gathering; private developers would have the additional of hauling sand and gravel greater distances; purchasing extant mining claims will eliminate their potential economic stimulus	Modest increase over current economic benefits of recreation; offers more forest products as in Proposed Plan, but with greater emphasis on personal use; provides for most convenient sand and gravel supplies for private developments; retains extant Pine Creek mining claims	Impacts of recreation and mining will be the same as for the Preferred Alternative; FMP will differ from Proposed Plan's by emphasizing commercial harvests

Summary of Environmental and Military Consequences

	Proposed Plan	Alternative A	Alternative B	Alternative C	Alternative D
Military	There will be no significant impact on military activities	Minimizing training during September places some restraint on military operations; slightly less aggressive fire management program could increase smoke which could hinder training	Restricting civilian access will minimize possibility of interference with training; thorough cultural resource clearance will facilitate future military development; locked gates at all road entrances will be a significant inconvenience to troops	Allowing the public access without notifying the Army will create a significant safety problem and impede training; ceasing training during moose hunting season will significantly limit Army and Air Force training flexibility; signs would undermine troop orienting training	If many economic control facilities are instituted they will significantly restrict military training; mining operations, unless properly restricted, could interfere with training

Chapter 2

Affected Environment

Introduction

This chapter briefly describes the social and environmental setting of the planning area. The information in this chapter served as a basis in developing the alternatives and in predicting environmental impacts of the alternatives.

Socioeconomic Conditions

Demographic Characteristics

The population of the Fairbanks area has experienced periods of growth, decline, and stagnation. In 1970 there were almost fifteen thousand people in the city and more than thirty thousand more in the rest of the Fairbanks North Star Borough. The borough's population peaked in 1976, during construction of the Trans-Alaska Pipeline, at about seventy-two thousand. Nearly half of this number lived in Fairbanks. The population then fell until revived by the surge in state spending in the early 1980s. In both 1984 and 1985 the borough's population increased about 7 percent. ("Fairbanks Demographics"; "Indicators of Change") The area's population fell 1 to 2 percent each year through the rest of the decade, until reviving in 1990. The 1990 census counted nearly 78,000 people in the borough; almost 31,000 of these lived in Fairbanks and 1,500 in North Pole. (Community Research Quarterly 1993, p. 41)

In 1980 the age and sex distribution of the borough did not vary dramatically from that of the state. Median ages were several months less than the state median of 26 and the distribution about that mean was similar. While the state average was 53 males for every 100 people, the average was 53.8 and 53.5 males in the borough and city, respectively. In the city the proportion of the population that was white was less than three percent above that for the state. Only 7 percent of the city's residents were Native. For the borough over 85 percent were white and less than 6 percent were Native. Thirty-six percent and 35 percent of the city's and borough's populations, respectively, had moved to the state in the five-years prior to 1980. (U.S. Bureau of the Census, 1982a, p. 7; U.S. Bureau of the Census, 1982b)

A survey of the area's population by the borough's Community Research Center in September 1985 noted only

modest changes in demographics over the previous five years. The median age increased one year to 27 and the sex ratio had moved a little closer to parity in numbers between the sexes —52 males for every 48 females. ("Fairbanks Demographics")

Economy and Employment

Government, led by the military, has long employed a far larger portion of Fairbanks-area inhabitants than any sector of the private economy. In the 1960s, when what became the North Star Borough in 1964 had about thirty-five thousand civilian inhabitants, there were nine thousand to ten thousand men and women in uniform. In 1980 47 percent of the region's workforce received government paychecks. ("Looking Back"; FNSB, Community Research Center, 1985, tables 12 and 16)

The proportion of the borough's workforce employed by government remained the same in 1992. By then 8,000 or 21 percent of nonagricultural wage and salary earners were in the military, nearly 3,000 of whom were assigned to Eielson Air Force Base. Eight percent of the borough's workers were federal civilian employees; over 2,000 of these worked for the Air Force or Army. About 4,300 people or 11 percent of the workforce labored for the state. Local government payrolls accounted for another 7 percent of employees. (*Community Research Quarterly* 1992, p. 3; *Community Research Quarterly* 1993, p. 19, 40)

Fairbanks' private sector benefits from the town's role as the business, service, and transportation center for not only the Tanana Valley, but for much of the northern half of the state. The major employers in 1990 included Fairbanks Memorial Hospital, Tanana Chiefs Conference, Tundra Tours, Golden Valley Electrical Association, Super Valu Foods, Safeway, and Foodland. ("The Largest Non-Government Employers in the FNSB," p. 27) Since the building slump of the mid-1980s, construction has accounted for about 1,800 summer jobs and a little more than half that number in the winter. The number engaged in mining fluctuated dramatically in the late eighties and early nineties from less than one hundred to two hundred or more. (*Community Research Quarterly* 1992, 21-22) Mining benefits Fairbanks primarily through the demand it generates for goods and services. A study conducted in 1985 estimated that $27 million, more than a third of the funds expended by the state's placer mining industry, found its way into Fairbanks. Less than $4.5 million of this was derived from wages. (Fried, 1987; "The Mining Industry")

Community Facilities, Services and Finances

Municipal Utilities System (MUS), owned by the city of Fairbanks, provides much of the telephone and power service to the city. Golden Valley Electric Association and the Glacier State Telephone Company service other areas of the borough. MUS also provides water and sewer needs in the city. Elsewhere College Utilities Corporation and the city of North Pole provide similar service. (*The Fairbanks Factbook*, pp. 30-31)

The Fairbanks North Star Borough gets the largest portion of its income from state revenue sharing. Since 1989, the State has annually sent about $80 million to the borough's schools and administration. Local taxes have added slightly over $40 million more to the borough's coffers, with property taxes accounting for two-thirds to three-fourths of that amount. ("Who's Been Paying for Borough Government")

Subsistence

Salcha Natives and those in a former semipermanent camp at the mouth of the Chena River almost certainly hunted in what is now the Yukon Maneuver Area. (Andrews, 1977, v. 1:131 and 1975, pp. 70, 75) In the 1920s, Salcha hunters concentrated their activity in the Salcha and Little Salcha drainages. But by 1945, the Natives had virtually abandoned that village and by 1962 there were no Native settlements in the Tanana Valley between Healy Lake and Nenana. (Andrews, 1975, pp. 31-32; McKennan, 1981, p. 566) These villages are each at least seventy miles from the YMA, and consequently the fort area has been little used by Natives for subsistence for many years.

There is no evidence that subsistence activity currently occurs on the YMA. As indicated above, residents of Fairbanks and nearby communities in the Fairbanks North Star Borough generally depend on wage-earning jobs to support themselves and their families. The closest communities which the State classifies as "rural" for purposes of subsistence fish and game allocations are Nenana and Minto, but studies by the Alaska Department of Fish and Game indicate that inhabitants of these places do not use resources on the YMA. (Shinkwin and Case, 1984, p. 39; Andrews and Napoleon, 1984, p. 5; ADF&G, 1986, p. 239c)

Air, Soil, Water, and Vegetation Conditions

Air

Fairbanks' average monthly temperatures range from -11.5 degrees F in January to 61.5 degrees F in July, yielding a yearly average temperature of 26.3 degrees F. The all-time low temperature recorded by the National Weather Service is -62 degrees F, and the highest temperature on record is 96 degrees F.

Average monthly water equivalent precipitation ranges from 0.29 inches in April to 1.86 inches in July. The average annual amount is 10.46 inches. Most of the yearly precipitation occurs during the summer and early fall. The record seasonal snowfall, 168 inches, occurred during the winter of 1970-71. Average annual snowfall is 67.2 inches. (Arctic Environmental Information and Data Center, 1986. Unless otherwise noted, air, soil, and water information is from U.S. Army, 1980) Relative humidity at Fairbanks is low; the yearly average is 55 percent. During spring and early summer it is at its lowest levels, averaging 38 percent during mid-afternoon in May. The highest incidence of heavy fog occurs in December and January, with four and five days respectively being foggy. Ice fog, composed of innumerable

small ice particles, is a persistent, localized fog at temperatures lower than about -30 degrees F. Most ice fogs occur near human settlements where moisture is exhausted into a cold, stagnant atmosphere by burning fuel.

Prevailing wind direction during June and July is from the southwest. At other times the prevailing wind direction is from the north, with an average speed of 5.3 mph. The greatest average wind speed occurs during the spring months, with a high of 40 mph recorded in Fairbanks. Winds are 5 mph or less approximately 60 percent of the time. The late spring and early summer are the only times of the year during which thunderstorms occur. There are about five such storms in a typical year.

Air quality in the Fairbanks and Fort Wainwright area is influenced by a combination of circumstances including a restricted geographic basin, low winds, and severe temperature inversions in the winter. As pollutant emissions increase because of regional growth, ambient concentrations also increase. The main source of carbon monoxide pollution is motor vehicles and combustion of other fuels. Major particulate emission sources include power plants, residential coal and wood combustion, forest fires, vehicle emissions and road dust. Other emissions are nitrogen dioxide, hydrocarbons, and sulfur dioxide.

Soils

Soils of the withdrawal area have been mapped in a broad exploratory level of survey. (Rieger, Samuel, et al., 1979) On south-facing slopes soils are generally well drained and free of permafrost, while poorly drained north slope soils are usually underlain by permafrost. South slopes are occupied by well-drained silt loams which grade from shallow gravelly silt near ridgetops through silt loams of mid-slopes to deep, moist silt loams of lower slopes. Drainage bottoms and depressions are occupied by shallow gravelly silt loam with a thick overlying peat layer and underlying permafrost. Soils of north-facing slopes are shallow gravelly silt loams with thick cover and permafrost.

The greater portion of the withdrawal area is rolling to hilly upland, occupied by silt loam soils developed in the silt mantle of hills and ridges bordering the Tanana River Valley.

Stratified silty to gravelly stream deposited materials occupy low terraces adjoining the Tanana and Chena rivers. Soils developed in these materials are well drained alluvial silty and sandy loams. Wet depressions are occupied by thick peat deposits and permafrost.

Potential availability for exposed soil from flowing water and wind is high for upland silts and moderate to low for sandy loams and sandy materials of low river terraces. This condition causes severe limitations for use of these soils in construction for roads, airfields, and buildings.

Water

The Fort Wainwright study area lies entirely within the Tanana River drainage basin. Northern and northeastern portions of the study area are drained by the Chena River and

its tributaries such as South Fork Chena River and Hunts Creek. The southern portion of the study is drained by the Salcha River and its tributary, Ninetyeight Creek. Streams draining the western portion of the study area flow directly into the Tanana River, or reach the Tanana River through Piledriver Slough. All of the tributaries originating in the study area have their headwaters in rolling, glacier-free terrain of the Yukon-Tanana Uplands at elevations of less than 2,000 feet.

Low stream discharges occur during the winter, due to permafrost, ice formation, and storage of precipitation as snow. Many small streams freeze solid (zero discharge) during the winter. Streamflow is maintained principally by groundwater in some streams. Peak discharges occur during the summer months as a result of spring thaw and ice breakup, and increased precipitation.

Surface waters are classified by the State of Alaska according to water-use categories. The Chena River from its confluence with Chena Slough to the confluence of the Chena River and the Tanana River has been designated as Class C (suitable for bathing, swimming and recreation) and Class D (suitable for growth and propagation of fish and other aquatic life including water fowl and fur bearers). The state has classified other fresh waters to be in their original and natural condition, and as such they are considered suitable to serve all uses. Nearly all surface water drainage from the study area would be expected to be acceptable quality for the uses established in the water quality standards. General lack of development and other human related activities preclude presence of man-induced pollutants and result in generally excellent water quality of the area streams and lakes.

Measurements of specific characteristics indicate the good quality of water on the Yukon Maneuver Area. Measurements of pH of water from streams and lakes in the general project area indicate most values to be within the limits established by the state's standards (6.5-8.5). Trends observed in the Chena River showed pH values slightly above neutral during the winter. Similar trends have been observed in the smaller streams of the study area. Concentration of nitrogen forms is high in relation to phosphate in the Chena River, thus phosphate may be the limiting inorganic nutrient for phytoplankton production. Iron is the only naturally occurring element in streams of the project area that may occasionally exceed recommended levels. U.S. Public Health Service standards recommend less than 0.3 mg/l of iron for waters that are being considered as a source for drinking supply. The high iron concentration in the lower portion of the Chena River may be attributable to surface water and groundwater drainage from the swampy, muskeg areas present throughout this section.

Sediment loading in streams of the study area would be expected to be low. Nonglacier fed streams in the Tanana River Basin generally carry less than 300 mg/l during high

flow periods, and decrease to as low as 10 mg/l during low flow periods.

Samples collected from the Chena River indicate that biological oxygen demands (BOD) and chemical oxygen demands (COD) would also be expected to be low in the study area streams. BOD values are generally less than 1.0 mg/l and COD values range from 0-54.0 mg/l for the Chena River. Streams flowing through recently burned areas generally show an increase in COD as a result of organic material being carried into water by increased surface erosion. Data for the Chena River indicate that fecal coliform populations are very low in the underdeveloped upper portions of the river, but increase significantly as the Chena River flows through the developed area near Fairbanks.

Plant Communities

Major vegetation communities in this area are coniferous forests, mixed forests, tall shrub, low shrub, and herbaceous wetlands. Factors affecting the type and pattern of the vegetation are permafrost, depth to water table, slope, aspect, and fires. (The following vegetation and forest type information is derived from U.S., Soil Conservation Service, 1986 and Alaska, Division of Geological and Geophysical Surveys, [1987].)

Most of the withdrawal is covered by open forests of stunted black spruce and mixed open forests of black spruce and birch. A low shrub layer may be present and mosses form the ground cover. This vegetation community is found mainly on the north-facing slopes.

On the south-facing slopes, closed deciduous forests of birch and aspen occur. Most of these forests are young post-fire reproduction stands. A low ericaceous shrub layer may be present. These forests occupy the well drained sites.

Closed forests of black spruce can be found in patches scattered throughout the withdrawal. Most of these forests are young fire reproduction stands. They occupy the poorly drained sites.

On narrow terraces adjacent to rivers are forests of white spruce, balsam popular, and aspen. Willow and alder shrubs are found in the understory.

A small portion of the withdrawal is covered by shrub and herbaceous plants. These vegetation communities occur on hilltops, narrow drainageways, and lake perimeters. Hilltops are covered by low mixed shrubs of dwarf birch, willow, and ericaceous species. Just below the hilltops, a zone of tall shrub (alder and willow) occur on disturbed sites adjacent to roads. Many small lakes lie scattered in the lowland forests on the western side of the withdrawal. Along the lakeshores a narrow zone of moist and wet graminoid vegetation can be found.

Timber Resources

Commercial forests are identified as closed and open coniferous forests of white spruce; closed deciduous forests of paper birch, or birch and aspen; and closed mixed forests of black spruce, white spruce, and birch. Closed deciduous

forests of paper birch and aspen make up one-half of the commercial forests within the withdrawal. Most of these forests are pole size (5 to 9 inches DBH for conifers and 5 to 11 inches for deciduous), young post-fire reproduction, or recently burned stands. They are generally found scattered throughout this area on south-facing slopes.

In this area woodland forests are identified as closed forests of black spruce, or black spruce and white spruce, and closed mixed forests of white spruce and birch. The major portion of the woodland forest is composed of closed black spruce. Most of these are young fire reproduction stands. Large patches of woodland forests are concentrated in the northwestern portion of the withdrawal and small patches are scattered throughout the area.

Most of the withdrawal is covered by noncommercial forests. A large portion of this forest is made up of open mixed stands of black spruce and birch, and open stands of black spruce. These are dwarf forests (mature stands which are less than twenty feet high) or young fire reproduction stands.

The biological condition of the timber resource is affected primarily by fire, insects, and disease. Because of the frequent fires, many of the stands are immature. The spruce beetle (D. ruffipenis) is most damaging to the white spruce stands. The potential for an outbreak is always present. While no specific-site data on disease is available for the withdrawn lands, a study of interior forests estimates that 37 percent of the white spruce, 47 percent of the birch, 78 percent of the poplar, and 82 percent of the aspen in the region have decay in the merchantable stem. (Hutchison, 1967, p. 38)

Fish, Wildlife, and Their Habitat

Much of the wildlife in the Yukon Manuever Area is made up of forest species due to the predominance of this habitat type in a significant part of the withdrawal. Because mature forests offer poor habitat, much of the area has low populations of many wildlife species found throughout the rest of interior Alaska. No wildlife species is particularly important on the withdrawal and the YMA is not important to any wildlife species in interior Alaska.

The lack of surface water resources precludes significant aquatic biota and far superior terrestrial habitat for most species exists in land near the withdrawal. Fish that are present include arctic grayling, northern pike, and, to a very minor extent, humpback whitefish, king salmon, and chum salmon. Mammals that occur on the YMA are moose, grizzly bear, black bear, lynx, grey wolf, coyote, red fox, marten, ermine, least weasel, mink, wolverine, river otter, porcupine, hoary marmot, beaver, muskrat, arctic ground squirrel, red squirrel, and snowshoe hare.

Direct observations during surveys have found the most common bird species to be alder flycatcher, American kestrel,

hawk owl, great-horned owl, yellow-rumped and orange-crowned warbler, common and hoary redpoll, dark-eyed junco, hairy woodpecker, red-tailed hawk, spruce grouse, ruffed grouse, mew gull, grey jay, common raven, black-capped chickadee, American robin, varied thrush, hermit thrush, Swainson's thrush, grey-checked thrush, Bohemian waxwing, and snow bunting. Although other birds are known to migrate over the YMA, they are missing from the list due to no confirmed sightings during the period from 1982 through 1987. (Kerns, MSA)

Moose

Moose density in the YMA range from around 0.1 moose/mi^2 in some of the predominately black spruce habitats to slightly higher density in the few better habitat areas such as Nintyeight Creek, in the southeast corner of YMA, during early winter. Most of the moose of this area move into the Tanana Flats during the spring and return in the early fall. Hunters harvest approximately twenty bull moose from the YMA each fall.

Fish and Wildlife Habitat Condition

The aquatic habitat of the YMA, though very limited in quantity, is of fairly high quality. Most of the streams are shallow, gravel bottomed, and have clear water through most of the summer. Some degradation occurs on Stuart Creek due to its use as an impact area for the Air Force and Army. Also, Pine Creek, which runs into Beaver Creek has had sediment loading due to mining, though no mining has occurred in recent years. These streams are normally dry during winter. Horseshoe Lakes (Sec. 1, T. 2 S., R. 3 E., F.M.) are probably the only lakes in the YMA which do not freeze solid to the bottom. The quality of these lakes is good. The three Horseshoe Lakes, along with a number of other small lakes located west of Transmitter Road are of moderate value in supporting fish and wetlands species, including waterfowl, shorebirds, passerines, grouse, ptarmigans, moose, and various furbearers.

The terrestrial habitat has been influenced by the fire history of the area. More than four dozen fires have occurred in the YMA over the last twenty-five years (1962-1987). Parts of Stuart Creek Impact Area routinely burn due to fires caused by the military's live-fire activities. But lightning has caused some of the larger fires on the withdrawal, including the largest, a 56,640 acre burn in 1969 in the Ninetyeight Creek drainage. In 1987, a fire of nearly eleven thousand acres burned in the vicinity of the AFTAC Site in the northwest portion of the withdrawal. These fires have had a positive effect on the habitat of the YMA by helping to maintain diverse habitat on part of the withdrawal. (Kerns, MSA; Rowdabaugh, MSA)

Threatened and Endangered Species

No threatened or endangered species are known to exist in the YMA; there currently are no threatened and endangered species recovery plans for the withdrawal area (Kerns, MSA).

Cultural Resources

Although there is reason to believe that paleontological, archaeological, and historical resources exist on the YMA, archaeologists have not discovered many sites. The remains of Pleistocene vertebrates probably are buried in the creek bottoms, but there is no record of any having been found. (Lindsey, 1987) Native villages situated at the mouths of the Chena and Salcha rivers probably included the withdrawn lands in their subsistence areas, yet there are only eight known prehistoric sites on the YMA. (Andrews, 1977, v. 1: 131 and 1975, pp. 70, 75) Investigators have found no historic sites, despite the area having been prospected in the turn-of-the-century decades and a trail having extended up the South Fork Chena River in the 1920s to serve trappers. (ARC, 1929, II:79)

A major reason for the paucity of discoveries of cultural sites on the withdrawn lands is that archaeologists have examined less than 5 percent of this portion of Fort Wainwright. Researchers have only examined the area west of Johnson Road and Skyline Drive. Of the eight known sites, seven are not eligible for the National Register of Historic Places. The exception, (XBD-095), is on Quarry Road and is vulnerable to disturbance by road maintenance and use of an adjacent quarry. (U.S. Army COE, 1986, pp. 7-54.)

Recreation

The 125 miles of roads and trails in the Yukon Maneuver Area are the key to the recreation resources. The road condition ranges from pavement to the most primitive unmaintained four-wheel drive roads and ORV trails. Hunters use the landing strip at Pine Creek in the fall.

Although there are no data available on the number of people recreating on the lands, it is clear that the most popular recreational activities are hunting and wheeled ORV and snowmobile use. Residents of Eielson AFB, are the primary recreational users of the YMA because it is so close to their home and easy to access. The general public feels uneasy about driving into an area with warning signs, restrictions about entering, and requirements for permits. Military residents of Fort Wainwright headquartered much closer to Fairbanks can access the area easily, but they can enjoy similar recreational opportunities closer to home along Chena Hot Springs Road and the Steese Highway. (Butts, MSA, Recreation)

Visual Resources The visual character of the YMA is rolling plateau lands. The characteristic landscape is spruce forest intermingled with aspen and birch strands. The highest points of plateaus are open tundra composed of shrubs, lichen, and grasses.

From the air the forested landscape is broken by distinctive clearings, blackened or burned areas, muskeg, military maneuver and drop zones, vehicular pathways, firebreaks, and moist tundra. From most vantage points at ground level, the solid forest cover hides these features.

Backcountry roads and trails of the maneuver area provide access to wild lands for many new residents of Alaska, particularly Eielson AFB personnel. This is where many experience their first viewing of moose, bears, and other animals. (Butts, MSA, Visual Resources)

Fishing

Horseshoe Lakes has a natural population of pike and is accessed over an unimproved road through a marshy area, which limits its use in the summertime. Horseshoe Lakes and the surrounding area also are used for duck hunting. The South Fork Chena River is accessible by a four-wheel drive road from Eielson AFB across the north part of the maneuver area. The South Fork has excellent grayling fishing but it is seldom used because of the difficult access. (Alaska Department of Natural Resources, 1984)

Skiing

Eielson AFB has a ten kilometer cross-country ski trail system which lies partly on the maneuver area and is covered by a joint use permit from Fort Wainwright. This ski area is open to anyone, but it is used mostly by Eielson AFB personnel and families. (Butts, MSA, Recreation)

Hunting and Trapping

The primary recreational uses occur during the hunting season and on weekends. Roads allow substantial hunting opportunities. In 1986, 1,047 hunting permits were issued by Eielson AFB, most of which were used on the maneuver area, as Eielson permits can be used on Fort Wainwright land. Only sixty-three of the permits were issued to civilians. Eielson issued about 150 permits to military personnel in their first year in the state. These first year military permittees can hunt on military land without buying expensive nonresident state permits. In addition to these permits, Eielson wrote permits for about 150 snowmobiles and over 500 permits for ORVs (three- and four-wheelers). Most use of these vehicles occurred on the maneuver area. It is not possible to estimate how many non-Air Force personnel used ORVs on the withdrawal.

About four thousand hunting permits are issued at Fort Wainwright, a quarter of which are issued to civilians and the rest to military personnel. From check stations operated on the maneuver area in 1985, it is estimated that about one-half of these permittees used the maneuver area. In recent years fifteen trapping permits have been issued at Fort Wainwright for exclusive trapping areas. Eighty-seven permits for bear bait stations were issued in 1987. (Butts, MSA, Recreation)

Lands and Rights-of-Way

Lands

The planning area is withdrawn by Public Law 99-606, the Military Lands Withdrawal Act of 1986. The lands have been under a withdrawal for military purposes since 1961. There is a large impact area within the planning area used for aerial gunnery training. There are two NIKE sites and an Air Force Technical Applications Center (AFTAC) within the planning area. The NIKE sites are withdrawn by Public Land Orders 1345 and 1523. (Everett, MSA, Lands)

Rights-of-Way

The Trans-Alaska Pipeline System (TAPS) right-of-way goes through the extreme western part of the withdrawal for short distances in two places. TAPS was authorized by the Trans-Alaska Pipeline Authorization Act of 1973. The right-of-way width is fifty feet plus the ground occupied by the pipeline (generally four feet). The pipeline is used to transport hot crude oil from Prudhoe Bay to Valdez. Alyeska Pipeline Service Company manages the oil pipeline. Adjacent to TAPS is a right-of-way for the proposed Alaska Natural Gas Transportation System (ANGTS), a chilled gas pipeline to be managed by Northwest Alaskan Pipeline Company. The ANGTS right-of-way width is the same as TAPS. The ANGTS alignment deviates from TAPS and cuts somewhat deeper into the northwest corner of the withdrawal. In 1988 the BLM issued a right-of-way to the Yukon-Pacific Corporation for its Trans-Alaska Gas System (TAGS). TAGS runs roughly parallel to TAPS and ANGTS.

Energy and Mineral Resources

Geology

The bedrock of Fort Wainwright's Yukon Maneuver Area is characterized by a complex assemblage of Precambrian and Paleozoic-age metamorphic rocks of the Yukon-Tanana crystalline complex (formerly known as the Birch Creek schist). These rocks were subsequently intruded by Cretaceous and Tertiary-age igneous rocks. (Spurr, 1898; Mertie, 1937; Foster and others, 1973; Weber and others, 1985) The region's multiphase deformational geologic history has obscured the original structure and stratigraphic features within the metamorphic rocks. (Jones and others, 1985) Much of this igneous and metamorphic bedrock is overlain by extensive Pleistocene and Holocene loess (silt and eolian sand) deposits derived mainly from the flood plain of the Tanana River and from the foothills of the Alaska Range. Valley floors, slopes, and terraces are overlain by boulders, gravel, sand, and silt, with the most recent deposits occurring along stream valleys in the form of well-stratified gravel, sand, and silt. (Weber and others, 1978)

Leasable Minerals

The Fort Wainwright withdrawal is classified as having a low potential for the occurrence of oil and gas resources.* (Within the Bureau's Mineral Potential Classification System, the oil and gas potential is rated L/D.** Note that this and the other classifications given below are only for the minerals' occurrence; they are not ratings of the potential for economic mining. See Appendix B for maps of leasables' and other minerals' potential.) The withdrawal lacks the sedimentary rock, which is considered essential for the accumulation and preservation of source material (i.e. organic matter), and for the generation of that source material into hydrocarbons. That the area has any potential for the accumulation of oil and gas resources rests on the ability of the metamorphic and igneous rocks, which account for the majority of rock in the withdrawal, to supply secondary reservoir porosity for migrating oil and gas. Tertiary sediments of the Middle Tanana basin, considered to hold potential for the generation of oil and gas, are the potential source rock from which secondary migration would occur. (Andreasen and others, 1964; Stanley, 1986)

The withdrawal has no potential (O/D) for coal and oil shale or for concentrations of phosphate, sodium, potassium, or gilsonite, and moderate potential (M/B) for geothermal resources. The classification for coal and oil shale is based on the absence of consolidated, sedimentary rock within the withdrawal. This rock is indicative of an ancient geologic environment suitable for the formation, accumulation, and preservation of the organic material that form these resources. The "no potential" rating for concentrations of the other minerals is based on the area's overall unfavorable geological environment. Several factors justify the assignment of "moderate potential" for geothermal resources. Thermal springs in Alaska are spatially associated with the contact of Mesozoic and Cenozoic granitic plutons (Gassaway and Abramson, 1977; Basescu and others, 1980) The withdrawal's geologic environment is similar to that of areas with known geothermal resources, such as Chena Hot Springs and Circle Hot Springs. (Miller and others, 1973; Liss and others, 1987) A geothermal gradient test hole drilled seven miles west of the withdrawal near North Pole yielded heat flow values of 75 to 100 milliwatts per square meter. (Lawver and others, 1979) Worldwide values average of 62.8 milliwatts per square meter. In addition, the geothermal gradient (a measurement of the rate of increase of temperature at different depths in the earth's crust) at a deep test hole drilled

---

* Besides oil and gas, leasable minerals include coal, geothermal resources, oil shale, gilsonite, phosphate, potassium, and sodium.

** This classification system includes no (O), low (L), moderate (M), and high (H) levels of potential and levels of certainty reflecting insufficient evidence (A), indirect evidence only (B), minimal direct evidence (C), and abundant direct and indirect evidence (D) to support or refute the existence of mineral resources.

on the north side of Eileson pluton, which is inside the withdrawal's boundary, measured 31.5 degrees centigrade per kilometer. (Forbes and Weber, 1975) The earth's crust geothermal gradient averages 25 degrees centigrade per kilometer.

Locatable Minerals

There is abundant direct and indirect evidence of high potential (H/D) for the occurrence of gold and tin*** placer mineral resources in the Pine and Beaver creek drainages of the Fort Wainwright withdrawal. This classification is based on the reported and known occurrences of these minerals in these areas. Gold placer mining has occurred near the withdrawal on the Salcha River, Flat Creek, the South Fork of the Chena River, and Crawford Creek. Until 1989 there were three placer claims on Pine Creek in the northeastern part of the withdrawal. All of these were located in 1923. In 1942 the Alaska Bureau of Mines reported minor, but unquantified, amounts of placer cassiterite (tin) on Pine Creek. (Joesting, 1942) The USGS reported placer gold and tin mining along Beaver Creek, two miles northwest of Pine Creek, in 1911 and 1912. (Cobb, 1972) Historical records of the state of Alaska show a claim staked on a tributary of French Creek in the southwestern part of the withdrawal. But no claim exists there now, and no records of production are available for any of the claims on the withdrawal. (Sturmann, 1986; Campbell, 1987)

All other drainages within the withdrawal have high potential (H/A) with respect to gold and tin placer resources. However, this classification reflects a certainty level that neither supports nor refutes the possible existence of these mineral resources within these areas. The available data are insufficient or cannot be considered as direct or indirect evidence.

There is indirect evidence that the potential is moderate (M/B) for gold and tin elsewhere in the Yukon Maneuver Area and for all remaining locatable minerals throughout the withdrawal. This classification is based on similar geology and abundant occurrences in the Fairbanks and Circle mining districts, and on the identification of potentially favorable metallic environments in nearby areas of the Big Delta quadrangle.

There has not been much mining activity in the withdrawal, which has been closed to mineral exploration for more than twenty years. Placer mining activity has occurred south and east of the fort on Banner and Tenderfoot creeks and on Salcha River, Flat Creek, South Fork Chena River, and Crawford Creek. (Cobb and Eberlein, 1980)

There are no exploration, development, or processing operations proposed on the withdrawal. Nevertheless, a

*** Besides gold and tin, locatable minerals include a large number of metals, ores of metals, and nonmetallic minerals. Among these are silver, lead, zinc, copper, molybdenite, asbestos, graphite, and various rare earths.

mineral resource map of the Big Delta quadrangle (Menzie and Foster, 1978) delineates known mineral prospects and mines, as well as areas considered to have the greatest potential for additional mineral resources. Potentially favorable environments for the occurrence of metallic minerals are located in the eastern and northeastern sections of the quadrangle and include porphyry molybdenum and copper deposits, massive sulfide and lead-zinc deposits associated with mafic and felsic metavolcanic rocks, and skarn deposits as a source of copper and tungsten. (Foster and others, 1978; Hessin and others, 1978) Extensive altered zones in east-central Big Delta quadrangle are considered geologically favorable environments, however, geochemical data collected in this area did not have anomalous values.

Mineral Materials The sand and gravel**** potential of the withdrawal's stream valleys and the alluvial sand and gravel deposits just west of the fort are classified as high (H/D). This determination is based on the geologic map of the Fairbanks quadrangle (Pewe and others, 1966), which delineates deposits of alluvial sand and gravel along the Tanana River flood plain. Also, the geologic map of the Big Delta quadrangle delineates alluvial deposits of limited areal extent along stream valleys in the interior of the withdrawal. (Foster and others, 1978) These may be available for very localized use. The remainder of the Yukon Maneuver Area is assigned no potential (O/D) for the occurrence of mineral materials based on the geologic maps of the Fairbanks and Big Delta quadrangles.

There are no proposed or ongoing mineral material activities. There are records of two Alyeska mineral sale sites on the YMA in the French Creek area. These sites are no longer active. Several other material sales and free use gravel pits are located just outside the withdrawal's western boundary. Mineral material sites on Fort Wainwright would most likely be limited to small areas along the western border near the Richardson Highway and TAPS. Road work both inside and outside the withdrawal and construction of the TAGS and ANGTS are the primary potential uses of the materials. There is a lesser possibility of need for sites along trails in the interior of the withdrawal, which may occasionally require maintenance.

**** Other mineral materials include stone, cinders, pumice, pumicite, clay, limestone, dolomite, peat, and petrified wood.

Chapter 3
Environmental Consequences

Introduction

This chapter addresses several concerns. First, it presents estimates of the forest harvesting and mining which could occur under the Proposed Plan presented in Chapter 1. The envisioned scenarios comprise the best projections of members of the Army-BLM planning team and are a basis for estimating the environmental consequences. The chapter then describes the anticipated effects of implementation of the Proposed Plan on air, soil, water, vegetation, wildlife and wildlife habitat, visual resources, the local economy, and subsistence. Because of the importance of recognizing the military's use of the lands, the chapter also portrays the potential impact of the plan on military activities. Thirdly, the chapter summarizes cumulative effects of military and nonmilitary uses on the withdrawal's resources and uses. Finally, the chapter presents summary statements concerning ANILCA 810(a) findings, unavoidable adverse impacts, short-term uses versus long-term productivity, and irreversible and irretrievable commitments of resources.

Development Scenarios

Forestry

Initial review of the forest resources of Fort Wainwright's Yukon Maneuver Area indicate that there are few, if any, stands of trees suitable for saw timber or house logs. However, there is some potential for fuel wood harvests, for which there is demand in the Fairbanks area. (ADNR, Div. of Forestry, Annual Report 1985) Consequently, the most likely development of timber resources would be of fuel wood for commercial or personal use.

Personal use harvesting would be open to all and would primarily involve individuals gathering firewood, possibly limited to dead and down, near the road network and transporting the material home in personal vehicles. Any commercial harvests of stands of saw timber, house logs, or fuel wood which are economical to access, probably would be made by clear cutting of a hundred acres or less. Because the best stands occur on slopes, special care may be needed in clear-cut harvesting to avoid soil erosion. Also, because some mid slopes are too steep for light crawler or rubber-tired tractors, large timber harvests would likely be limited to slopes of less than 30 percent near the major existing roads on the Yukon Maneuver Area. A possible means to overcome this

restriction on harvesting the steeper slopes would be to employ cables to transport logs up the steeper slopes to yarding areas near the ridgetop road network. However, this method adds to the expense of an operation and may prove uneconomical. Timber operators would yard the logs near the roads and then transport them out of the area on trucks. Loggers would burn residue after the harvest to control insects and disease, reduce fuel, and promote regeneration of white spruce, birch, and aspen.

Minerals

Under the Proposed Plan the withdrawal will remain closed to the operation of the mineral laws, though the BLM and the Army will reexamine what areas may be suitable for opening by 1996 and at least every five years thereafter. Thus, no mineral activity will occur until at least the late 1990s, other than that mineral material extraction for the military's own construction projects. If after the reexamination of the decision on mining on the withdrawal, the BLM and the Army agree to open portions to mineral leasing or location, development might take place. The following scenarios indicate what developments may occur. Note that these scenarios do not necessarily indicate what is most likely to happen, but rather what activities could take place if valuable resources are found on the withdrawal in commercial quantities.

Oil, Gas, and Geothermal

While, as noted in the Affected Environment chapter, it is highly unlikely that economically viable oil, gas, or geothermal resources exist on the withdrawal, the scenario presented below describes the type of operations which might occur should the Yukon Maneuver Area be opened to the exploitation of these resources. Four types of exploratory activities may take place. First, summer field investigations would be conducted via automobile, helicopter, or fixed-wing aircraft to collect rock samples from outcrops and make general observations of geologic features. They probably would not require any field camps. Second, for up to six months during winter, prospective developers might conduct seismic investigations. To accomplish this, a crew of five to ten people with three to five vehicles (all would be designed to exert little ground pressure so that they could be used off the road network) would cross the area in a grid pattern generating sound waves into the subsurface and recording their reflected waves. Third, should summer and seismic investigations suggest particularly interesting geologic structures, a company might sink an exploratory well. Finally, depending on the results of the exploratory well, a company may drill delineation wells to confirm and measure the extent of a discovery.

Exploratory and delineation wells are usually sunk in the winter for environmental, engineering, and economic

reasons. Low-ground-pressure vehicles would haul construction equipment overland to the drilling site or sites from the Richardson Highway or roads on the withdrawal. Drilling pads covering two to four acres each would support the rig, equipment, and necessary facilities. The pads could be made of ice if there is enough water available at the site; otherwise pads could be constructed from excavated material or from combinations of gravel, foam, and timber, or of other combinations of materials. If the camp is to house the workers, thirty to fifty people will likely be at the site; otherwise fifteen to twenty people will be present on the site at any given time. Next to the pad there would be up to a half acre reserve pit and a much smaller flare pit. Both pits would be lined with an impermeable liner and would be eight to ten feet deep. The material excavated from the pits would be used to backfill them when the pads are abandoned. The well could be drilled, tested, and abandoned within fifty to ninety days.

After final testing and logging of a well's findings, the well is suspended or abandoned by placing cement plugs in the wellbore and casing. All equipment is then removed from the site and any debris is transported to an approved disposal facility. A final clean-up crew would return to the site in the summer to pick up any remaining debris and check on rehabilitation.

If exploratory and delineation wells indicate a viable economic discovery, the lessee would draft environmental studies and a plan for development and production of the reservoir. The appropriate government agencies would review these documents and, if they prove satisfactory, approve them. The first on-the-ground activity would be the construction of a road from existing roads to the production drill sites; along the route of a pipeline, if one is to be built; and from gravel sites to the road network. The roads would be thirty-five feet wide and three to four feet thick. Each mile of road would cover five acres of surface. The total acreage covered by roads would depend on the size of the field and the surrounding terrain. The developer would also build a small airstrip, if it is necessary to support field operations. The airstrip would be 2,000 to 4,000 feet long and 100 to 150 feet wide.

This scenario presumes that a five thousand acre oil or gas field would prove economical to produce. Under this assumption, five pads would be necessary to deplete a gas reservoir and twenty pads for a oil reservoir. Most pads would cover five to seven acres. They would be one mile apart in a gas field and a half mile apart in an oil field. Wellheads would be protected from the environment by metal buildings about ten feet high and ten feet on each side. Once the field was depleted—probably over a period of ten to twenty-five years—the wells would be plugged and abandoned, the buildings removed, and the disturbed surface reclaimed according to government regulations.

Gas and oil production would require oil, gas, and water separators; water disposal wells; an office complex; and

pipelines. Separators and disposal wells may be required on all pads or just on a few. Those pads with these facilites will require seven to ten acres. Unless the field is easily accessible to off-withdrawal facilities, one pad will also have to accommodate offices, meeting rooms, and a kitchen. Any pad containing these facilities would have to be expanded to twelve to fifteen acres. Pipelines would be required from each production pad. If a separator is located on each pad, only one pipeline will be necessary from each pad to the main production line. Up to three pipelines might be required for pads without separators.

Pipelines would transport marketable gas from the withdrawal, while oil would reach its market through a tie-in with the trans-Alaska pipeline or by truck to the refinery at North Pole. Gas lines would probably be buried, but oil pipelines probably would be placed on vertical support members. Pipelines in the field would range from three to six inches in diameter and the main pipeline out the field would probably be six to twelve inches. Gas likely would be utilized by the military or Fairbanks or some of the smaller communities in the area.

Development of a geothermal field would resemble that described for development of oil and gas in the previous two paragraphs. There would be no need for separator facilities. Steam would be piped to generators centrally located in the field to generate electricity, and instead of pipelines leaving the field, there would be a series of power lines carrying electricity to market. The building housing the generator would be far larger than any facility required for the oil and gas scenario.

Placer Mining

It is unlikely that any mine would develop in the YMA. However, if one does prove feasible, it probably would be a small placer mine employing about three people and working about four and one-half acres each summer in the South Fork Chena River basin.

Access to the claim would require either continued use of a trail a mile and one-half long from the Pine Creek landing strip, a winter trail to bring in heavy equipment and supplies which cannot be brought in on the airstrip, or a new road from either a branch of the Beaver Creek Road or Brigadier Trail. The mining operation would also require a bunk house, a cook shack, and a shop. Since the roads would be at least a mile and one-half long, and thus would impact at least three acres, and the various structures and immediately adjacent lands would cover nearly another acre, the total operation would exceed five acres impacted each year and require that a plan of operations be submitted to and approved by BLM before mining begins (43 CFR 3809).

The miner would probably need to build two or more settling ponds with associated spillways, drainage ditches, and a relatively flat working area on which to operate its

earthmoving and gravel-washing equipment. If pay sands underlie the current stream or if it is impossible to conduct mining with the stream in its present channel, the miner may divert the creek. All the excavated material would be stockpiled and, as areas have been mined, the overburden will be replaced, the terrain and stream channel restored to as close to the original condition as possible, and, if required, the area revegetated.

Mineral Materials

A Solicitor's opinion received after issuance of the DRMP indicated the Military Lands Withdrawal Act of 1986 forbids mineral material disposals for other than military purposes. Consequently, there will be no development of mineral material sites on the fort for civilian uses.

Environmental Consequences Common to All Alternatives

Air, Soil, Water and Vegetation

Land uses will comply with federal and state laws and regulations related to air, water, soils, and vegetation. Any statements about potential erosion and sedimentation differences among alternatives mostly refer to slight differences in low potentials. With continued full compliance, there should be only small impacts on air, water, soils, and vegetation. Realistically, there are lapses in surveillance and compliance and some impacts do occur. Several of the proposed actions for this plan have the potential to impact air, water, soils, and vegetation resources in the withdrawal. Effects depend on the degree of use, type of development, and the location of the activity on the landscape.

Fine grained materials in the soils of the withdrawal and the presence of shallow ice-rich permafrost make it likely that disturbance or removal of the insulating ground vegetation would result in soil erosion. Water from the melting ice may percolate through the soil or run down slope, transporting soil with it. The extent of erosion would depend on the steepness of slope, aspect, amount of ice in the ground, severity of disturbance or removal of the vegetative ground cover, and the type of mitigation applied.

Settling of sediments or dust into interstices of the stream beds can damage fish habitat. Dust, generated by traffic or winds, settling on leaf surfaces can interfere with light absorption and gas exchange and decrease plant photosynthesis and respiration. Dust which accumulates on snow decreases the amount of solar energy reflected off the surface and increases the rate of spring snow melt. The amount of dust generated from man-caused erosion is small compared to large naturally exposed areas in river floodplains and glacial outwash plains.

Under all alternatives, except the Proposed Plan, the DOT/PF may obtain sand and gravel from the withdrawn lands.

It is unlikely, however, that it will need to use any site on the withdrawal. All the alternatives except the Proposed Plan and Alternative B also allow sales of mineral materials. TAGS and ANGTS might both want to purchase sand and gravel from at least one site. A mineral material site may have little or no organic materials that must be stripped and saved for future respreading, or the site may have from one to six feet of material that is pushed to one side and saved. Bulldozers strip the overburden and break up the consolidated material. Bulldozers can generally dig to a depth of ten to twelve feet. If the material is deeper, drills are used and a series of holes are loaded with explosives and detonated, fracturing the material. The material is loaded into dump trucks by front end loaders or backhoe excavators. The trucks then haul the material to the location where it is needed. On big jobs with short hauls, because of speed and lower operation costs, operators use scrapers instead of dump trucks and front end loaders.

Authorized officers can require specific measures in reclamation plans (43 CFR 3602.1-2). Reclamation of material sites often includes the following actions. The sides of the resulting pit are sloped to a 3:1 slope gradient or less. The floor of the pit is leveled to prevent the accumulation of water which may become a hazard to animal and human life. The saved topsoil and organic material are then respread over the side slopes and access roads and fertilizer is applied to allow reestablishment of natural vegetation and to decrease erosion. Seeding or planting may be used in areas where quick revegetation is needed.

Cultural Resources

Fulfilling the Army's *Historic Preservation Plan for U.S. Army Lands in Alaska* would document about forty additional cultural resource sites. Based upon past experience in this area, approximately 20 percent of these, or eight sites, would prove eligible for the National Register of Historic Places.

Subsistence

None of the alternatives would have any notable impact on subsistence. There is little or no subsistence use of Fort Wainwright's Yukon Maneuver Area, although, except for its impact area and the AFTAC site, it is open to such use. Subsistence users are at some distance from the withdrawn lands and have easier access to a plentiful supply of a variety of species closer to rural villages, such as Minto and Nenana.

ANILCA 810(a): Consideration of the Availability of Other Lands and Other Alternatives

Throughout the planning process, the joint BLM-Army team has planned for all the Fort Wainwright Yukon Maneuver Area lands which required such an effort as a result of the Military Lands Withdrawal Act of 1986. It also addressed planning for two sites withdrawn for military purposes which formerly contained Nike sites. These two sites are wholly encompassed within the YMA. Consequently, this planning effort is considering all appropriate lands so that

there are no "other lands" which could be considered. The five alternatives discussed in this section constitute the "other alternatives" required by ANILCA Sec. 810 for consideration.

Environmental and Military Consequences of the Proposed Plan

Air, Soil, Water, and Vegetation

We do not anticipate that any of the nonmilitary activities likely to occur as a result of this plan will involve the use, production, storage, transportation, or disposal of 10,000 pounds of any chemicals on the Environmental Protection Agency's "Consolidated List of Chemicals Subject to Reporting Under Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986" or any extremely hazardous substance as defined in 40 CFR 355. Any party who would undertake a nonmilitary-related action which would involve one or more chemicals or substances from these lists will be required to notify BLM and complete appropriate environmental documentation.

ORVs

Regulations [43 CFR 8341.1(f)(4) and .2(a)] give minimum standards for operating ORVs on public lands. They provide that ORVs shall not cause undue damage or disturbance to soil, wildlife, wildlife habitat, improvements, or cultural or vegetative resources. Initial damage from ORVs can range from crushing to uprooting of vegetation. Some crushed vegetation can regenerate and recover within one year, while other plants require much longer. Uprooting of vegetation and disturbance of vegetative ground cover renders the underlying soil unprotected, creating the potential for erosion or ground subsidence. The restrictions proposed in this alternative on nonmilitary ORV use lessen the potential for damage to soil, water, and vegetation. These restrictions limit the weight of ORVs used and also limit ORVs to travel over specific routes during summer and to periods of adequate snow cover. Under equal conditions, the lighter vehicles would inflict less damage to the vegetation than heavier vehicles. A thick layer of snow would help protect the vegetation from damage under tracks and tires, thereby, protecting the underlying soil. Although limiting travel to low erosion soils would not protect the vegetation and soils from disturbance, it reduces the potential for erosion and sedimentation.

Forestry

Personal use fuel wood harvesting would have little, if any, impact on these resources. But commercial harvesting would pose a potential for erosion when the vegetative ground cover is disturbed or removed on the moderate to steep slopes which predominate through much of the YMA. Regeneration on actively eroding areas would be delayed until the soil stabilizes. Adverse impacts due to soil erosion can be

controlled by confining harvesting to well drained soils on slopes of less than 30 percent and by buffering sensitive streams.

Oil, Gas, and Geothermal

As with other mineral operations, the impacts of leasable mineral development listed below will only occur if the lands are opened to the operation of the mineral leasing laws upon a review to occur in accordance with the Military Lands Withdrawal Act. Moreover, it is unlikely that any of these resources will be found in economical quantities on Fort Wainwright's Yukon Maneuver Area.

The high percentage of fine grained materials in some soils of the planning area and the presence of shallow permafrost makes it probable that a disturbance or removal of the ground covering vegetation, such as that which occurs in building roads, drilling pads, disposal wells, airstrips, and pipelines, will result in some soil erosion. This is particularly likely in areas of sensitive soils described on the ORV Use Map in the Alternatives chapter. Revegetation of the gravel embankments left after closure of roads, drilling pads, airstrips, and work pads associated with construction of pipelines will be similar to that of mine tailings and may take decades, as described in the discussion of impacts of placer mining.

If the eroding material produces sediment which is transported to a water body, there will be sedimentation and water quality degradation. Sediments transported off road surfaces and drilling pads with surface water runoff and materials spilled on or alongside roadways and pads are a common source of sedimentation and pollution. Roads, drilling pads, and other disturbed surfaces are also sources of dust. The area affected by dust can approximate two hundred acres per mile of road. The amount and the range of dust depends in part on the type of surface material, frequency of precipitation, the direction and speed of winds, and the speed and number of vehicles using the roads. Dust can inhibit plant growth by interfering with photosynthesis and changing plant chemistry. It also can cause earlier melting of snow in the spring. If spring after spring this attracts animals searching for early greens, the plants can be weakened and ultimately die.

Placer Mining

Mining can have substantial impacts on these resources. Although the Proposed Plan does not open the lands to the operation of the mineral laws, the reevaluation of this management decision provided for by the action makes such an opening possible. Consequently, the effects outlined below are those that could occur should the lands become open for mineral location.

Placer operations may involve hydraulic, mechanical, or drift mining techniques. Bulldozers or draglines generally

remove the overburden, although hydraulic monitors may be used. The amount of overburden removed in stripping operations varies from one to ten feet or approximately 1,600 to 5,300 cubic yards per acre stripped. Where the land is cleared for roads and mining, a potential for erosion and sedimentation is created through runoff from rain and snow melt.

Bulldozers loosen pay gravels and push it into a pile for feeding onto a sorting device called a grizzly. Normally, miners in a small operation like that described in the scenarios for the Proposed Plan would process from 10 to 1,000 cubic yards of gold bearing gravels per day throughout the nearly one hundred day season and use from 100 to 3,000 gallons of water per minute to wash the gravels. Typically, between 50 and 90 percent of the water used in the processing system is recycled from the settling ponds and the rest is made up from streams diverted around the operation. Coarse tailings are removed from the processing area by bulldozer or loader and stacked for later reshaping or used to build settling ponds.

Federal regulations, specifically 43 CFR 3809, require rehabilitation measures. Generally, properly designed, constructed, and maintained ponds are capable of settling most settleable solids required by the Environmental Protection Agency (EPA) and Alaska Department of Environmental Conservation. Ponds are not capable of removing all the turbidity that is created during the processing phase. Additional treatment of the mine water through the use of flocculants, ground filtration systems, total recycle of all mine waters, redesign of the processing plant, or a combination of the above is necessary to reduce turbidity.

The coarse tailings not used for other mining purposes remain after the area is mined out and are reshaped to harmonize with adjacent natural contours. Topsoil required to be saved is respread over the reshaped ground to promote vegetation by natural species or according to requirements in the approved plan of operations. If any mine develops on the withdrawn lands and it has the typical amount of fines in its tailings, it will normally take over thirty-five years to establish a stable, sustaining productive community of open tall shrubs. This is generally a tall willow or alder community with a canopy cover of at least 50 percent in vegetated areas, where dying vegetation is replaced by seed or vegetative means. Such a community can sustain moderate pressure from wildlife, especially beaver or browsing moose, and may continue on the site indefinitely, or be successional to a deciduous forest with mixed spruce. Fertilizer is sometimes applied to improve plant nutrition. Seeding or planting may be used where quick vegetative cover is essential.

Fire

Fires result in beneficial and adverse impacts. The effects vary with fire severity. Generally, after a fire, the

underlying soil exhibits an increase in active layer thickness and available plant nutrients. This results in a more productive site and plants respond with vigorous growth. Fires that burn through the insulating vegetative ground cover could result in thawing of the underlying permafrost. On slopes, permafrost rich in ice could release enough water to cause mass downhill movement of soil. Should the soil move into drainages, sedimentation of nearby streams would occur.

These impacts could also occur as a result of suppression activities. Firebreaks are continuous strips one to eight feet wide where all the surface organic material is removed, exposing mineral soil. Returning organic matter to the strips, seeding, or use of water bars to divert water from highly erodable areas of firebreaks could reduce erosion.

Fish and Wildlife

The Proposed Plan may lead to greater habitat diversity on the YMA. Currently, the withdrawn land is primarily a woodland habitat. To the extent that clear cutting is found appropriate in the Forest Management Plan, this alternative would promote greater habitat for species such as moose and small game and nongame mammals and birds. Any oil or gas development which might occur would eliminate habitat where roads, drilling pads, and other facilities are placed, but clearing of timbered areas near pipelines will create more habitat for these species. These same animals are likely to be the beneficiaries of efforts to improve the fort's vegetation in the course of developing the YMA's military, recreational, and economic potential and in following the Habitat Management Plan. However, the Proposed Plan's fire suppression plan, which is moderately more aggressive than the current plan, along with the Fire Management Plan may decrease the amount of new grazing and browse habitat created by fire.

Access requirements are not substantially altered, but the amount of hunting on the withdrawn lands may slightly decrease due to the creation of limitations on where ORVs are permitted to travel in other than winter conditions. This may decrease the current harvest of about twenty bull moose per season. But if mining ultimately develops on the withdrawal, miners would probably account for some small increase in the take of game animals. Mining activity itself should not impact wildlife in any important way. However, if miners fail to properly dispose of garbage, they would attract animals to their camp. Bears attracted to garbage threaten human life and property and are often destroyed. Moreover, if contrary to expectations, leasable minerals are developed on the withdrawal, the additional roads built in association with it may act to both increase the number of hunters and the areas in which they are able to readily harvest game.

Mining would also impact the fish populations on Fort Wainwright, which are limited to small numbers of grayling. Increased suspended and settleable sediment due to mining activities would decrease primary production, which would be reflected in scarcer supplies up the food chain. Mining

activities alter aquatic habitat by removing riparian vegetation and disturbing stream beds. This can increase stream flow, create barriers, and reduce or eliminate important pool habitat. Numerous studies have found that fish populations drop where streams have been impacted by mining. Reclamation of the site, regrowth of riparian vegetation, and sediment reduction would result in restoration of habitat and minimization of long term effects of mining.

Visual Resources

There would be impacts to visual resources if timber harvests occur on the withdrawal. These harvests are most likely to occur along the road network, but their visual impacts would be lessened by retaining an uncut buffer along major recreational roads.

Cultural Resources

Impacts to cultural resources would be sporadic and unique to each development undertaken. Small timber harvests and, perhaps eventually, mining could disrupt cultural materials. However, a survey prior to clear cutting or mineral extraction should retrieve any archaeological or historical information likely to be disturbed by loggers or miners. Testing, evaluating, and, if appropriate, excavating archaeological site XBD-095 would preserve its cultural information.

Socioeconomics

By preserving current opportunities for hunting, fishing, trapping, and other recreation on the YMA, the Proposed Plan would continue to allow the local economy to benefit from supplying recreationists' needs and from gaining the meat and fur value of the fort's wildlife. BLM estimates the approximately 9,000 visitor days a year which the withdrawn land currently receives and would continue to receive under the Proposed Plan contributes about $800,000 annually to the area's economy. Most of this supports the activities of hunters who are the primary recreational users of the land.

It is uncertain whether this part of Fort Wainwright would provide any saw timber or house logs, but there is good reason to believe that the YMA could produce fuel wood for personal and commercial harvests. Saw timber sells for about $300 per Mbf and cord wood is about $85 delivered. The Proposed Plan would not limit who can partake in such gathering, probably would permit some cutting of live fuel wood, and may well allow commercial fuel wood cutting. However, it is uncertain how great the consequent increase in the value of the firewood harvested would be.

Because of the uncertainty of the feasibility of mining on the withdrawn lands, it is exceedingly speculative to estimate the economic impacts of opening them to the operation of the mining laws. Moreover, because the lands probably will not be opened until at least 1996, these impacts probably would not occur until the late 1990s. However, if a small placer mine such as outlined in the scenario descriptions above developed, it would probably employ three seasonal miners and result in adding one full-time job equivalent to Alaskan employment. The average mine of this size generated about $77,000 for the

Alaskan economy in 1985. (Alaska, Department of Commerce and Economic Development, 1986, pp. 6, 15) The extant Pine Creek mine probably is this type of small operation.

Oil and gas development, though less likely than locatable mineral development, would produce far greater expenditures. Field investigation costs would be negligible, but seismic exploration probably would cost $250,000 to $500,000. Sinking, operating, and dismantling an exploratory well would require that the potential developer spend $2 million to $3 million dollars. Full-scale production as outlined in the scenario earlier in this chapter would require $7 to $8 million to install the facilities. The developer would pay approximately $300,000 per year for wages, supplies, and equipment to operate an oil field each year and $100,000 each year for a gas development. The construction phase would have secondary repercussions through much of the state's economy. Construction would develop a demand for more than $1.4 million of services and supplies. The transportation and wholesale sectors, in particular, would experience greater demands. Operations of a gas or oil field would generate an estimated $40,000 or $80,000, respectively, each year in secondary demand, with real estate receiving the largest share.

The Proposed Plan would make for more expensive extraction of sand and gravel for private development in the area than is currently the case or would be the case under Alternatives A, C, or D. TAGS, the most likely of the private developments, could get mineral materials from adjacent state lands, but transporting large quantities of sand and gravel to the portion of the gas line passing through the post would add considerably to the cost of the project. The Proposed Plan could add expense to State highway work by forbidding mineral material extraction under P.L. 85-767. This expense may be theoretical rather than actual, however, because the State does not have any projects slated for the area for at least five years and because contractors prefer to get virtually all the gravel for such road work in this region from their own privately owned sources; there has been little or no mineral material for road work obtained from military lands for at least two decades.

Military

None of the actions prescribed by the Proposed Plan would significantly restrict military training.

Subsistence: Compliance with Section 810 (a) of ANILCA

Uses and Needs

The Proposed Plan would leave the Yukon Maneuver Area substantially open for any ongoing subsistence use which, at present, is low to nil. Such usage is not likely to increase, since subsistence users are at some distance from the withdrawn lands and have easier access to a plentiful supply of a variety of species closer to rural villages, such as Minto and Nenana.

Section 810 (a) Finding for the Proposed Plan

The Proposed Plan would not cause a significant restriction to the subsistence use of the YMA, since little or no such activity now occurs and the area would remain open for such usage, subject to military requirements to close portions of the withdrawn lands for training and safety reasons.

Cumulative Impacts of Military and Nonmilitary Uses

The previous pages have examined the effects of nonmilitary uses of the Fort Wainwright withdrawal. In order to fully appreciate the impact of nonmilitary uses, however, it is important also to address their impacts in conjunction with those of military actions.

Two environmental impact statements completed by the Army in 1979 and 1980 and a recent Air Force environmental assessment outline the effects of military activities. Although the Army's contingent in Alaska has grown from a brigade to a division since the completion of these documents, the major impacts they describe are largely the same as can be anticipated from continued military use. Moreover, the Army's force in Alaska is now slated to return to brigade strength.

The following pages summarize the military's impacts on resources. These impacts are in addition to those outlined in this plan for nonmilitary use. Under the heading "Interrelated Impact," the following pages also highlight cases in which the impacts of the military's actions and the Proposed Plan or one of the alternatives will be more than additive. Unless otherwise stated the cumulative impacts of military and nonmilitary use will be the same for each alternative in this plan. This analysis is based upon this RMP, the two Army EISs, the Air Forces's EA, and consideration of the changes in military use from that anticipated in the Army EISs.

Air, Soil, Water, and Vegetation

Military activities in the Tanana drainage generate relatively little air pollution. Military vehicles and aircraft contribute only a small fraction of a percent to the region's airborne particulates, sulfur oxide, carbon monoxide, hydrocarbons, and nitrogen oxides. For example, in 1980 the Army estimated that its activities in the Tanana Valley produced 1,200 pounds of particulates and 22,100 pounds of carbon monoxide. In 1971 total emissions for the region of these substances were 52,143 tons and 40,731 tons, respectively.

Construction of military facilities will generate fugitive dust and additional vehicular pollutants. But such construction generally will take place on parts of the fort not

within the withdrawal. In any case, this air pollution will only last as long as the construction project. Large-scale military maneuvers which involve the transport of thousands of troops can cause temporary increases in atmospheric pollutants. Nevertheless, even in the winter when such large exercises are regularly held for two weeks, the resultant air pollution is small relative to the discharges in Fairbanks and elsewhere in the vicinity of the withdrawal. Moreover, these impacts are short-lived.

Military impacts on soils is limited to site clearance for roads, trails, airstrips, drop zones, and facility construction, and to impact areas for heavy ordnance. There will be ongoing impacts to soils in the impact areas and unpaved roads, trails, and other areas of heavy use. But these disturbances will be localized; there will be no major changes in soils or soil structure due to military use.

The primary military actions which affect water quality are removal of ground cover during training, stream crossings, explosion of ordnance in or near water, and accidental oil spills. Military training during the winter has little impact on surface water quality. At breakup and through the summer, however, there can be deterioration of surface water from erosion near water bodies, if the ground cover has been disturbed. Although some such deterioration occurs, there has been no widespread damage from erosion. Vehicles crossing streams and ordnance landing in water bodies can increase sedimentation. Gases such as carbon dioxide, carbon monoxide, methane, ammonia, and hydrogen cyanide are common products of ordnance exploding in stream and lakes. Most of these gases quickly bubble to the surface and leave the water. The remainder are diluted through natural mixing. Accidental oil spills occur, but generally are quite small and are very localized. Thus, water quality, both of surface and ground water, has been excellent on the withdrawal. There is no indication that military activities have affected water quality on or downstream of the withdrawn lands.

The Army's system of roads has stripped vegetation from about 600 acres. Firebreaks have disrupted a smaller area. Continued use of the roads and trails will prevent vegetation from reestablishing itself and dust from military road traffic can decrease photosynthesis and plant respiration. Travel off the road network occurs during training. If the vegetation is only crushed by vehicles, plants may regenerate the next season. If the root system is severely impacted, a plant community may take forty years or more to recover to its natural state. Damage could be more lasting if the ground cover vegetation is removed from erosion-sensitive areas on steep slopes.

Interrelated Impact

The Proposed Plan and Alternative D, which are most likely to result in the construction of mining or logging roads, may

induce more military vehicular travel. Easier access may increase training in the area. The Army will almost certainly take advantage of the roads to spread its training into different areas of the withdrawal. Thus, the discharge of air pollutants by military vehicles and damage to soil, water, and vegetation may increase with the creation of new roads; it almost certainly would become more dispersed.

Fish and Wildlife

Stream crossings by wheeled and tracked vehicles during summer result in the loss of some aquatic life. The effects on downstream organisms from slightly increased sedimentation, dissolved oxygen concentration, and biological and chemical oxygen demands are negligible during summer. In addition, small tributaries of the South Fork Chena River lying within the Stuart Creek Impact Area are subject to impacts from large explosions in and near the water.

The relatively small acreage devoted to roads, trails, and other facilities and the miniscule amounts of habitat temporarily eroded following military disturbance of the ground cover vegetation are the most obvious negative impacts of military actions on habitat. The military also creates more habitat for grazers and browsers (and destroys an equal amount of wooded habitat) when it clears forests for bivouac sites and drop zones.

More noise may have some impact on wildlife behavior and populations. Ambient noise levels in wilderness areas range between 20 and 30 decibels. Measured from the position of the operator, weapons produce 112 to 190 decibels; small arms can be heard at levels above 70 decibels for a distance of four miles. Helicopters, which at fifteen hundred feet produce 95 decibels, are the next major source of noise produced by the Army. Jets of the Air Force, however, produce over 100 decibels at a slant distance of one thousand feet from the aircraft and some produce over 115 decibels one hundred feet directly under the aircraft.

Weapons' noise impacts will be greatest in the South Fork Chena River drainage near the Stuart Creek Impact Area. Moose are known to frequent this drainage. Helicopter noise impacts will be spread throughout the withdrawal. Air Force jet aircraft noise will affect wildlife over much of the withdrawal, but primarily in the Stuart Creek drainage. Disturbance of wildlife by vehicle noise will be concentrated around the largely ridge-top road system. Disturbances can affect feeding, migration, breeding, and reproduction. Extreme noises may interrupt reproduction. The long-term effects of noise are unknown. They include abandonment of habitat and, ultimately, a lower species population. None of these adverse effects, however, have been noted on the withdrawal.

Although no threatened or endangered falcons are known to occur in the withdrawal, some nest five miles to the south on Salcha Bluff. Moreover, with interior Alaska's population

of the birds increasing, some may eventually use Fort Wainwright. Helicopter and live firing noise may impact falcons, though that over the withdrawal will not impact the birds at Salcha Bluff because of the great distance. Winter maneuvers would cause very little impact in relation to other human disturbances.

Recreation, Subsistence, and Other Human Uses

Interrelated Effect

Recreation is the primary nonmilitary action which has occurred on the withdrawal. It will continue under all the alternatives except Alternative B. The Proposed Plan and some of the other alternatives may result in other uses, such as firewood and timber-gathering and mining. Military activities constrain all of these uses by limiting the ability of users to access resources. Moreover, military activities can detract from recreational experiences, most commonly through the noise of Air Force jets and Army helicopters. Because there is little or no subsistence activity on the withdrawal, little likelihood that it will become a focus of future subsistence activity, and little military and nonmilitary impact on wildlife habitat, there will not be a significant restriction of subsistence use on the Yukon Maneuver Area.

Socioeconomic Conditions

The Army and Air Force, which both use Fort Wainwright's Yukon Maneuver Area, account for a large proportion of the Fairbanks North Star Borough's employed population. In 1992 21 percent of the borough's nonagricultural workforce were in the military. An additional 5 percent are civilians employed by the military. The proportion of the borough's population represented by military employment has remained stable over more than a decade. The Army is paring down from a division to a brigade in Alaska, but it is uncertain at this time how great a decrease this will mean for the military's presence in the Fairbanks area.

Interrelated Impact

The Proposed Plan and Alternatives C and D have the potential for slightly increasing the area's population and employment, but these increases are insignificant compared to the borough's total economic life. Alternatives A and B will not create additional economic opportunity in the area. None of the alternatives would so increase civilian use of the withdrawal as to interfere with military use and thereby jeopardize the Army's continued contributions to the local community.

Summary of Section 810(a) ANILCA Findings

The Proposed Plan and the other alternatives have been evaluated in this chapter for their effect on subsistence uses and needs. None was found to have the potential to cause a significant restriction to subsistence uses. Nor would the cumulative impacts of the nonmilitary activities postulated in the Proposed Plan, its alternatives, and the military's continued use of the lands cause a significant restriction. This is because the level of ongoing subsistence usage of the YMA is low to nil, as described in Chapter 2. Thus, to even cut it off entirely, as would happen under the most access restrictive alternative (Alternative B) would only mean that potential subsistence users would use other lands closer to their residences, just as they do now.

Unavoidable Adverse Impacts

Besides the effects of the military activities for which the land has been withdrawn which are beyond the scope of this plan, there are unavoidable adverse impacts of each alternative.

ORV use would crush some vegetation, primarily near the road network. In particularly high use areas, ORVs would also disturb soils.

Surface mining would strip soil and vegetation and reduce wildlife habitat in the immediate vicinity of the operation. Some soil would erode and sediment would be transported into streams and lakes. Vegetative resources in many cases could require decades to fully recover.

Surface disturbing activities such as timber harvesting, construction of roads and recreation facilities, and mining would destroy or alter visual and cultural resources. These resources also would suffer from actions not within the government's discretion, such as vandalism, illegal collecting, natural erosion, and minimal wildfire suppression.

Short-term Uses versus Long-term Productivity

Harvesting a commercial timber stand under this plan would mean that that resource would be unavailable for some decades to come. Once sawtimber or house logs have been cut, it takes at least seventy years for the forest to mature again to produce these products. Deciduous fuel wood stands will become reestablished in twenty-five to thirty years. However, the practice of harvesting the withdrawal's timber on a sustained yield basis as proposed in several of the alternatives in this document would result in greater long-term productivity than the current practice of no commercial harvests.

Mining, by stripping surface vegetation and soils, can destroy commercial stands of timber. If the area is not logged before mining commences, the current timber would be lost, and another such stand would not likely reestablish itself for periods indicated in the above paragraph.

Alternative A, which allows use of ORVs on unstable soils, could have adverse long-term impacts on soils and vegetation. Regular use of ORVs in such areas can cause gullying and the loss of soil. The sliding of soil down hills can undermine current vegetation and greatly retard or completely prevent their reestablishment.

The above surface-disturbing actions could also have long-term impacts on wildlife by removing habitat. However, it is unlikely that the amount of habitat destroyed would be large enough to have a significant impact on animal populations.

Irreversible and Irretrievable Commitments of Resources

Few actions prescribed in any of the alternatives would irreversibly or irretrievably commit the resources of the withdrawn lands. This is particularly true if wildlife habitat is protected through proper mitigative actions. The removal of a mineral resource is an irreversible and irretrievable commitment of that specific resource.

Chapter 4

Public Participation and Government Consultation

Public Participation

The planning team initiated its public participation period in mid-July 1987. On July 21 the *Federal Register* published a Notice of Intent which announced the beginning of the planning process and listed the preliminary issues and criteria. The team mailed 194 brochures describing the planning process and purpose and outlining preliminary issues and criteria to a wide variety of agencies, organizations, interest groups, and individuals on July 15, 1987. In the same week a news release sent to nearly sixty newspapers, radio stations, and television stations in Alaska began to generate calls to BLM requesting copies of the pamphlet. Subsequent contacts with the public led to the distribution of additional copies of the brochure. In addition to the initial mailing, approximately one hundred pamphlets were distributed to interested members of the public through the Steese/White Mountains District Office, the BLM's Public Affairs office in Fairbanks, and public meetings held in August 1987 in Fairbanks. The mailing list for the scoping brochure is on file at the BLM Alaska State Office in Anchorage. Those receiving the brochure included Alaska's Congressional delegation, Alaska's governor, local mayors and State senators and representatives from Interior Alaska, a wide variety of federal and State agencies, various offices of the University of Alaska Fairbanks, members of the Northern Alaska Advisory Council, fifteen environmental and outdoor organizations, thirty-one business and development organizations, fourteen Native organizations, and thirty-three newspapers, journals, and radio and television stations.

This scoping pamphlet included a form with a prepaid return mailer, asking for public comments. Nine individuals and organizations responded in writing to the questions posed by the brochure.

The planning team held meetings to gather public comment on the preliminary issues and criteria on August 19, 1987 in Fairbanks. In addition, the Steese/White Mountains District Manager and a District planning team member spoke about the plan to, and encouraged comments from, the Fairbanks Chamber of Commerce and Fairbanks affiliates of the Alaska Miners Association, the International Right-of-Way Association, and the Lions Club.

The BLM distributed approximately three hundred copies of the DRMP/DEIS in the late summer of 1988. The parties receiving the document included those who received the brochure, plus similar groups and interested individuals. A complete list of those to whom drafts of the plan were sent is available at BLM's Division of Resources in its State Office. The planning team held a public meeting at Fairbanks on November 16, 1988. Only two members of the public participated. The team leader also gave a presentation on the planning effort to the Northern Alaska Advisory Council meeting in Fairbanks on December 7, 1988. Eleven individuals, organizations, and agencies sent written comments. These appear at the end of this chapter, along with responses to comments addressing particular inadequacies of the draft plan. No response is given for comments stating personal preferences, but these preferences were considered by the team and management.

Consultation, Coordination, and Consistency

The Bureau of Land Management, which has primary responsiblity for planning the nonmilitary use of the Fort Wainwright withdrawal, and the Army, which has carried on the day-to-day management of the land since creation of the withdrawal in 1958, jointly prepared this document. This joint effort was designed to pool the expertise of the two agencies, as well as to ensure the maximum coordination of military and nonmilitary planning for the withdrawal.

The planning team consulted with federal, state, and local agencies to ensure consistency between the alternatives outlined in the DRMP/DEIS and the management of adjacent land. Those parties receiving earlier drafts of the alternatives in that document included the Air Force, Alaska's Division of Government Coordination, and the North Star Borough. These offices also received the DRMP/DEIS.

Response to Public Comments

During the public comment period the Bureau of Land Management received eleven written comments on the Fort Wainwright Draft Resource Management Plan/Draft Environmental Impact Statement. These comments are rendered below in alphabetical order. The BLM and the Army appreciate the efforts put forth by the commentors; they have helped to make this a better plan.

STATE OF ALASKA
DEPARTMENT OF FISH AND GAME

STEVE COWPER, GOVERNOR

1300 COLLEGE ROAD
FAIRBANKS, ALASKA 99701-1599

November 29, 1988

Mr. James Ducker, Team Leader
Military Withdrawals Planning Team
Office of Management, Planning, and Budget (918)
Bureau of Land Management
701 C Street
Box 13
Anchorage, Alaska 99513

Dear Mr. Ducker:

RE: Draft RMP and EIS - Ft. Wainwright Manuever Area

The Department of Fish and Game has reviewed the Draft Resource Management Plan and Environmental Impact Statement for the Fort Wainwright Manuever Area and has the following comments.

The Preferred Alternative described in the document would allow public access to the withdrawal for recreational and development purposes, as constrained by safety rules and closures for military training. It is likely that the buildup of military forces from battalion to division levels will increase military use of the area in the future. Based on the area's importance to both military and civilian hunters, we strongly recommend that you amend the Preferred Alternative to curtail military training in the area during the moose hunting season, as contained in a provision of Alternative C. Closing the manuever area to hunters during that period would create more hunting pressure in the roaded areas around Fairbanks, where demand already exceeds the supply of harvestable moose. 1

We agree with the requirement for hunters to attend a safety seminar and obtain a permit for entering impact zones because of the potential public safety hazards there. However, we believe that the requirement for daily reporting for entering and leaving these areas is unecessarily restrictive and probably less effective at preserving safety than would an increase in presence of state and military enforcement personnel. Both the Stuart Creek and AFTAC areas should be posted regardless of any reporting requirements. 2

A further concern of the department's is the effect of the Draft RMP/EIS upon fire management. The Preferred Alternative would change the existing pattern of management (as described in Alternative A) by putting much of the manuever area into more restrictive categories. The justification given includes the statement that these designations match those of adjacent public lands. However, a glance at the maps provided in the Draft RMP/EIS show that lands east of the manuever area between the Chena and Salcha river corridors are designated as Modified Action, 3

while the proposal for the area itself is Full Protection. The department believes that fire is a natural and cost effective agent of habitat improvement within the Fort Wainwright Manuever Area. Since the Preferred Alternative considers habitat management issues to be important enough to warrant a Habitat Management Plan, the potential for an unplanned fire to create positive habitat changes should not be forfeited through wholesale changes to Full Protection. In our view, Modified Action is already a very restrictive way to manage wildland fires in this kind of area. Full Protection would virtually preclude the use of managed wildfire to achieve habitat management objectives.

The department recommends that you consider modifying the fire management proposal to better reflect the rationale given in the justification for the Preferred Alternative. Also, the proposal should emphasize defensible boundaries between the different suppression categories, rather than political lines. We suggest that the upper South Fork Chena drainage east of the Stuart Creek Impact Area be designated Modified Action. Based on land features and fuel types, the rest of the land in the manuever area outside the Stuart Creek impact zone could reasonably be identified for Full Protection. An exception to this is the upper Ninetyeight Creek drainage, which could be assigned Modified Action based on the fuel situation there, a result of past fires. The fire management pattern we propose more closely matches the situation on adjacent lands, and therefore fits the justification given in the Preferred Alternative better than the proposal given in the Draft RMP/EIS. Further, this pattern of fire suppression categories is compatible with the protection of Critical Protection sites cited in the plan. 3 cont.

We appreciate the opportunity to review this plan. If you have any questions regarding our comments, please contact this office.

Sincerely,

Alvin G. Ott
Regional Supervisor
Habitat Division
Department of Fish and Game

cc: Dick Bishop, Game-F
Roy Nowlin, Game-F
Mark McNay, Game-F
J. Clark - Sport Fish
F. Andersen - Comm. Fish
T. Haynes - Subsistence
E. Andrews - Subsistence

Responses

1-1. The military will make a maximum effort to prevent a conflict between training and hunting, particularly during the moose season. It cannot guarantee, however, that it will always be able to curtail training.

1-2. Opinion noted.

1-3. The commentor's suggestions are much appreciated. The proposed plan described on page 16 and an accompanying map reclassifies the South Fork Chena River drainage outside the fire line around the impact area as Modified and eliminates all political lines dividing fire suppression areas. The proposed plan also includes the area east of Ninetyeight Creek as Modified to correspond with changes or proposed changes in the suppression designation for that area on adjacent State land.

Letter 2
Alaska Department of Natural Resources

STATE OF ALASKA

STEVE COWPER, GOVERNOR

DEPARTMENT OF NATURAL RESOURCES

DIVISION OF PARKS AND OUTDOOR RECREATION

3601 C STREET
ANCHORAGE, ALASKA 99503
PHONE: (907) 561-2020

MAILING ADDRESS
PO Box 107001
ANCHORAGE, ALASKA 99510-7001

September 20, 1988

File No.: 3130-1R BLM

Subject: Fort Wainwright Draft Resource Management Plan and DEIS

BLM AK SO 974
Sep 23 | 37 PM '88

Military Withdrawals Planning Team
Office of Management, Planning and Budget (918)
Bureau of Land Management
Box 13
701 C Street
Anchorage, AK 99513

Dear Sirs:

We have reviewed the Draft Resource Management Plan and DEIS for Fort Wainwright for impacts on cultural resources. We offer the following comments:

Requirements of Section 106 of the National Historic Preservation Act as amended appear to be addressed by the document but several points need clarification. Specifically, which agency will be responsible for fulfilling the federal responsibilities of Section 106? The document refers to the "Historic Preservation Plan for U.S. Army Lands in Alaska", however, we have never been notified that the plan has been officially adopted and put into practice. 1 2

Overall inventory of cultural resources is mandated by Section 110(a)(2) of the National Historic Preservation Act as amended. This document needs to clarify how inventories will be completed under Section 110 but appears to address Section 106 almost exclusively. 3

A list of sites considered <u>not</u> eligible for inclusion on the National Register of Historic Places would be helpful so that completeness and accuracy of the list can be assessed. 4

Sincerely,

Neil C. Johannsen
Director

By: Judith E. Bittner
State Historic Preservation Officer

JEB:DR:dw

Responses

2-1. The RMP/EIS is designed to outline future management options. The BLM and the Army will sign a Memorandum of Understanding to implement the plan. The MOU will indicate the responsibilities of the agencies to carry out cultural resource programs. The BLM will forward a copy of the applicable sections of the MOU to the State Historic Preservation Officer.

2-2. The Army's adoption of the Fort Wainwright Resource Management Plan and the plan's implementing MOU acknowledges its adoption of the guidance contained in its Historic Preservation Plan for U.S. Army Lands in Alaska, so far as it applies to Fort Wainwright. The BLM and the Army also propose to develop a Cultural Resource Management Plan specific to Fort Wainwright (see page 15), which will indicate how the broad directives in the Army's historic preservation plan and the RMP are to be implemented.

2-3. The commentor is correct that Sec. 110(a)(2) of the National Historic Preservation Act of 1966, as amended, calls for an inventory program which would help in the development of a more comprehensive knowledge of cultural resources to better evaluate the respective significance of individual cultural resources. BLM and the Army carry out such work as their budgets allow and will incorporate plans for these investigations on the fort in the Cultural Resource Management Plan proposed in the Fort Wainwright RMP. (See page 15.)

2-4. The Corps of Engineers submitted this information to the State Historic Preservation Office. The SHPO will find the data in their files numbered 3130-1 (COE) and 3440 (COE).

Alaska Oil and Gas Association

121 W. Fireweed Lane, Suite 207
Anchorage, Alaska 99503-2035
(907) 272-1481

November 23, 1988

Mr. Jim Ducker
Military Withdrawals Planning Team
Office of Management, Planning &
Budget (918)
Bureau of Land Management
Box 13
701 C Street
Anchorage, Alaska 99513

Dear Mr. Ducker:

The Alaska Oil and Gas Association (AOGA) is a trade association whose members account for the majority of oil and gas exploration, production and transportation activities in Alaska. AOGA appreciates this opportunity to comment on the Fort Wainwright Draft Resource Management Plan and Environmental Impact Statement.

AOGA supports the preferred management alternative of the Fort Wainwright draft management plan. The plan should contain reasonable provisions for access, rights-of-way, mineral assessment and material extraction to accommodate potential economic development while recognizing the primary mission of the military and protecting the environment. We believe the Fort Wainwright plan contains such balanced provisions.]1

Thank you for this opportunity to comment.

Sincerely,

for WILLIAM W. HOPKINS
Executive Director

WWH:tp14:1468

Response

3-1. Opinion noted.

Letter 4
Fairbanks North Star Borough

Fairbanks North Star Borough

809 Pioneer Road PO Box 1267 Fairbanks, Alaska 99707 907 452-4761

April 13, 1988

Donald E. Runberg, District Manager
U.S. Bureau of Land Management
1541 Gaffney Road
Fairbanks, Alaska 99703-1399

Re: Military Land Withdrawal

Dear Sir:

The Fairbanks North Star Borough has reviewed your drafts of alternative management plans for non-military use of the Yukon Maneuver Area of Fort Wainwright, and the Fort Greely maneuver area.

Our management philosophy most closely matches that expressed in the economic development alternative as long as environmental and recreational uses are accommodated.

The mix of allowed uses under the Economic Development Alternative seems to provide for the fullest use of the area and the minimum interference with military operations in the withdrawal area. This is the closest alternative to being a truly "multiple use" management alternative, with appropriate consideration given to wildlife, recreation, environmental safeguards, and management of the resources for the benefit of the community.

We have no further comments on these alternatives but would like to be kept informed of any future plans. Thank you for the opportunity for review.

Sincerely,

Juanita Helms

Juanita Helms, Mayor
Fairbanks North Star Borough

JH/RM/bjs

Sep 26 | 42 PM '88

...AK 99 97...

Fairbanks North Star Borough

809 Pioneer Road PO Box 1267 Fairbanks, Alaska 99707 907 452-4761

September 21, 1988

Military Withdrawals Planning Team
Officer of Management, Planning, and Budget (918)
Bureau of Land Management
Box 13
701 C Street
Anchorage, AK 99513

Attn: Jim Ducker:

RE: Draft Resource Management Plan and EIS for Ft. Wainwright and Ft. Greely Maneuver Areas

Dear Sir:

Enclosed is a copy of a letter dated April 13, 1988 which was written in response to a similar request made by the Fairbanks office early last spring.

Our management philosophy has not changed since that time. We are still strongly in favor of the "economic Development" alternatives in each plan.]1

We have no further comments. However, we would appreciate copies of the final RMP/EIS when they are available. Thank you for the opportunity to review these plans once again.

Sincerely,

Rex A. Nutter

Rex A. Nutter, Director
Department of Community Planning

RAN/BS/bjs

Sep 26 | 42 PM '88

...AK 99 97...

Response

4-1. Opinion noted.

MEC
MINERALS EXPLORATION COALITION

Minerals Advocate
In Public Policy

Mailing Address:
Box 195
767 South Xenon Court
Lakewood, Colorado 80228
(303) 232-4310

Reply to:
Lakewood, Colorado
L.C. Lee

Washington Representative
L. Courtland Lee
3814 West Street
Landover, Maryland 20785
(301) 322-5782

November 21, 1988

Jim Ducker, Team Leader
Military Withdrawals Planning Team
Office of Management, Planning and Budget(918)
Bureau of Land Management
701 C Street
Box 13
Anchorage, Alaska 99513

Dear Mr. Ducker:

This letter constitutes the comments of the Minerals Exploration Coalition (MEC) on the Draft Resource Management Plan and Environmental Impact Statement for the Fort Wainwright Maneuver Area, Alaska. MEC represents companies and individuals engaged in exploration for hard minerals on federal lands.

MEC worked hard to add Section 12 to the P.L. 99-606, the Military Lands Withdrawal Act of 1986. This section provides access to military lands for the purpose of exploring for and producing locatable minerals. All areas of military bases not actively in use or containing hazardous materials should be open to mining.

MEC supports the Management Actions Common to All Alternatives, page 8. The map facing page 8 shows that most of Fort Wainwright would be open to nonmilitary activities. This conforms to the belief of MEC stated in the preceding paragraph.

MEC supports, with some reservations, both the Preferred Alternative and Alternative D.]1

Minerals, Preferred Action 14, provides for a mineral assessment prior to consideration of opening under Sec 12(a) of P.L. 99-606. Under this provision access for locatable mineral operations would be delayed until a mineral survey was conducted. Ultimately, access would be conditioned upon the results of that survey. We are concerned 1) that the mineral assessment might not provide the information necessary to proceed with confidence, 2) that the time required to conduct the assessment could be excessive and 3) the cost might limit the thoroughness of the assessment.]2

Moderate potential with direct evidence of mineralization is described on page 65. The proposed mineral assessment might add little useful information. The science and technology of conducting mineral assessments is advancing rapidly and economic conditions are ever changing. Much of the advancing knowledge and expertise resides by the mining companies. Without full use of "state of the art" technology, knowledge and methods and all tools available, including the drill and geophysical surveys, the assessment may not be adequate.

We are concerned about the delay inherent in an assessment. It might take years to find a competent contractor to conduct the field work, prepare the report and make it available to the public and finally make the decision concerning access.

We are concerned about costs of such a survey. In these days of federal budget cuts, funding for the assessment might be difficult to obtain. Funds might be inadequate to make a proper assessment.

Minerals, Alternative D, Action 15 provides that the lands be open for mineral location under regulations and procedures which would ensure that necessary military activities can be accomplished at the same time as exploitation and mining. This alternative action would allow immediate access to conduct locatable mineral operations. Mining companies would conduct the mineral assessments at no expense to the government.

We believe new regulations and procedures can be drawn, taking into consideration the provisions of Sec. 12(a)(2) of P.L. 99-606. These regulations would allow both military activities and locatable mineral operations to be accomplished. Whereas the terms of new regulations and procedures governing locatable minerals would be different from those for leasable minerals, one approach should be as compatible with military operations as the other.

MEC is prepared to meet with you to draft special regulations of locatable mineral operations. We propose that these regulations ensure that necessary military activities and locatable mineral operations can be accomplished. Drafting these new special regulations applicable to the unique situation and operations at Fort Wainwright should be given high priority.

The Minerals Exploration Coalition looks forward to communications regarding arrangements for our further contribution to drafting regulations and the mineral assessment.

Sincerely,

John D. Wells

John D. Wells
President

Responses

5-1. Opinion noted.

5-2. The Proposed Plan does not include provisions for a mineral assessment.

Letter 6
Tanana Chiefs Conference, Inc.

Tanana Chiefs Conference. Inc.
201 First Ave.
Fairbanks, Alaska 99701
(907) 452-8251

YUKON TANANA SUBREGION

September 8, 1988

Military Withdrawals Planning Team
Office of Management, Planning, and Budget (918)
Bureau of Land Management
701 C Street, Box 13
Anchorage, AK 99513

Dear Sir:

RE: FORT WAINWRIGHT MANEUVER AREA

Military use must remain predominant on the study area. Hunting, fishing, berry picking, and other recreational activities should be allowed to continue.] 1

The public needs to be warned that in the Stuart Creek Impact Area laser and laser-guided weapons are used. No access or use should occur in the area.

Thank you for your time and consideration.

Sincerely,

TANANA CHIEFS CONFERENCE, INC.

Oscar Frank, Jr.
Community Resource Coordinator

OFJr/alj

SEP 9 1 49 PM '88

97AA 0S AM ...

Response

6-1. Opinion noted.

DEPARTMENT OF THE AIR FORCE
REGIONAL CIVIL ENGINEER, WESTERN REGION (AFESC)
630 SANSOME STREET - ROOM 1516
SAN FRANCISCO, CALIFORNIA 94111-2270

OCT 05 1988

REPLY TO ATTN OF: ROVP (Tye/556-0557)

SUBJECT: Draft Resource Management Plan and Draft Environmental Impact Statement, Fort Wainwright and Fort Greely, Alaska

TO:
Military Withdrawals Planning Team
Office of Management, Planning and Budget (918)
Bureau of Land Management
Box 13
701 C Street
Anchorage, Alaska 99513

1. The AFRCE/WR appreciates the opportunity to review your draft RMP and EIS. Although this office has no comments at this time except to forward a comment provided by the Alaskan Air Command (AAC), we would appreciate your continued coordination of this project with our office.

2. From AAC letter dated 26 Sep 88: "The Preferred Alternative permits presently occurring actions to continue and actively promotes multiple-use with a sustained yield for all lands involved in the study. It is a ratification of the existing military land management plans for these locations. These plans complement the plans the Air Force is implementing at Eielson AFB." 1

PHILLIP E. LAMMI, Director
Environmental Planning Division

cc: HQ USAF/LEEV (Fordham)
HQ AAC/DEP
343 CSG/DEEV

Response

7-1. Opinion noted.

Letter 7
United States Air Force

Letter 8
United States Bureau of Land Management, Alaska Program Staff

1610 (310)

MAY 22 1989

Memorandum

To: Division of Planning and Environmental Coordination (AK 760)
Attn: Frosty Littrell

From: Alaska Programs Staff

Subject: Fort Greely and Fort Wainwright Draft RMPs/EISs

This office has reviewed the subject drafts and offers the following comments:

Fort Greely and Fort Wainwright - both drafts address the National Wildlife Federation v. Burford lawsuit and its preliminary injunction. On November 4, 1988, Judge Pratt issued an order vacating the injunction and dismissing the lawsuit. The Federation filed a Notice of Appeal on November 11, 1988 which, as of this date, has not been acted upon by the court. The progress of this case should continued to be monitored. 1

Fort Wainwright:

- Chapter 2, Affected Environment (Page 65): Second paragraph should be corrected to reflect signed grant for TAGS right-of-way. 2

- Appendix B, Management Situation Analysis Documents: The introductory paragraph is incomplete in that the final sentence is unfinished. 3

The review of the Fort Greely draft resulted in no additional comments.

cc: 310:RF; MIB-Rm 3653
LLM: 310:MIB Rm 3653:Lbrooks:lab:11-22-88:343-6511 — wg-68L
cc:AK 918/J Ducker

Responses

8-1. Discussion of the National Wildlife Federation v. Burford lawsuit has been deleted. It is no longer a factor in this RMP.

8-2. Corrections have been made on page 41.

8-3. Corrections have been made in the bibliography.

United States Department of the Interior

BUREAU OF MINES
Alaska Field Operations Center
201 E. 9th Avenue
Suite 101
Anchorage, Alaska 99501

November 18, 1988

Military Withdrawals Planning Team
Office of Management, Planning and Budget (918)
Bureau of Land Management
701 C Street
Box 13
Anchorage, Alaska 99513

Re: Fort Wainwright Draft Resource Management Plan, DEIS

Thank you for the opportunity to review the above plan. Jeff Foley of the Bureau's Fairbanks Office reviewed the document and provided most of the following suggestions. Feel free to contact him at 479-4277 or myself at the above address if you have any questions.

The geology and mineral resource sections are incomplete. Note that there is no Geology section in the document; rather, the only geologic description is inappropriately placed under a second-order heading titled "Locatable Minerals" within the section titled "Energy and Mineral Resources". A brief but slightly expanded "Geology" section should be inserted at the beginning of the "Energy and Mineral Resources" section. The "Geology section should include a description of Quaternary units which include gravel deposits from which some gravel production took place during construction of the Trans-Alaska Pipeline. 1

The plan summarizes past mineral-related activity in the management area and recognizes moderate mineral potential and evidence of "mineral" and "mineral materials" deposits. The plan also recognizes and asserts that there is little data available. In part, this situation prevails because the area has been closed to mineral entry. The report should recognize that the withdrawn area is in the Fairbanks Mining District which has a history of precious metal and strategic and critical mineral production, including tin, tungsten, and antimony.

The Fort Wainwright Management area is largely within the U.S.G.S. Big Delta Quadrangle, for which an entire U.S.G.S. AMRAP Folio is available. That information should be referenced and highlighted. For example, more data than included in the management plan is available on the gold and tin-bearing placers on Beaver Creek. U.S.G.S. Circular 783 contains a summary of information resulting from the AMRAP investigations in the Big Delta Quadrangle.

Also, the northeastern-most corner of the management area lies within a region identified by the U.S.G.S. as being "permissive for occurrence of contact metamorphic lead-zinc deposits and lead-zinc deposits associated with metasedimentary rocks".

The Bureau of Mines has published reports which may also be of interest to the Planning Team. These include:

Mulligan, John J. Mineral Resources of the Trans-Alaska Pipeline Corridor. BuMines IC 8626, 1974, 24pp. 9 figs.

Barker, J. Mineral Deposits of the Tanana-Yukon Uplands: A Summary Report. BuMines OFR 88-78, 1978, 33 pp., 8 figs.

Robert B. Hoekzema
Chief, Anchorage Branch

RBH:skb:1462M

cc: P. Gates, OEPR
M. Gloster, MLA Specialist

Response

9-1. The discussion of the withdrawal's geology in Chapter 2 has been revised substantially.

Letter 10
United States Environmental Protection Agency

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

[illegible] 1988

REPLY TO ATTN OF WD-136

Mr. Jim Ducker, Team Leader
Military Withdrawals Planning Team
Office of Management, Planning and Budget (918)
Bureau of Land Management
Box 13
701 C Street
Anchorage, Alaska 99513

Re: Fort Wainwright Draft Resource Management Plan (DRMP) and Environmental Impact Statement (DEIS)

Dear Mr. Ducker:

The Environmental Protection Agency (EPA) has reviewed the Fort Wainwright Draft Resource Management Plan (RMP) and the Draft Environmental Impact Statement (DEIS), a joint Bureau of Land Management and U.S. Army action under the Military Land Withdrawal Act of 1986.

This review has been carried out pursuant to EPA's authority under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act. We have the following two major comments.

First, the DEIS does not describe the cumulative effects of the military uses and the uses permitted by the various alternatives in the plan. Without this analysis, it is difficult to determine if the incremental effects from uses allowed in the plan will be significant. 1

Secondly, the DEIS identifies a number of additional plans (Habitat Management Plan, Recreation Activity Management Plan, Forest Management Plan, etc.) that are essential to provide comprehensive management of the Fort Wainwright Military Withdrawal. The Final EIS should describe when these plans will be developed, how monitoring will be incorporated into the plans to assure that the plan's objectives are being met, and if the plans will be subject to review under NEPA. 2

We have rated this DEIS EC-2 (Environmental Concerns - Insufficient Information). A copy of our rating system is enclosed.

[illegible]

[illegible] BLM AK SO [illegible]

Thank you for the opportunity to review your Resource Management Plan and Draft Environmental Impact Statement on the subject project. We look forward to receiving and reviewing the Final EIS for this plan.

If you would like to discuss our comments, you can contact Clark Smith, our Federal Facilities Coordinator, at (206) 442-1327.

Sincerely,

Ronald A. Lee, Chief
Environmental Evaluation Branch

Responses

10-1. We agree with this statement and have added a section addressing the cumulative impacts of military and nonmilitary uses of the withdrawal.

10-2. The Approved RMP will describe how monitoring will be accomplished. All activity plans will be subject to NEPA.

SUMMARY OF THE EPA RATING SYSTEM
FOR DRAFT ENVIRONMENTAL IMPACT STATEMENTS:
DEFINITIONS AND FOLLOW-UP ACTION *

Environmental Impact of the Action

LO--Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities with no more than minor changes to the proposal.

EC--Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EO--Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU--Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1--Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2--Insufficient Information

The draft EIS does not contain sufficient information for EPA fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3--Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

*From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment

Letter 11
United States Fish and Wildlife Service

IN REPLY REFER TO

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Northern Alaska Ecological Services
101 12th Ave., Box 20, Room 232
Fairbanks, AK 99701
November 12, 1988

Memorandum

TO: Military Withdrawals Planning Team,
Bureau of Land Management, Anchorage

FROM: Field Supervisor, Northern Alaska Ecological Services
U.S. Fish and Wildlife Service, Fairbanks

SUBJECT: Draft Resource Management Plan/Environmental Impact Statement for the Fort Wainwright Maneuver Area.

The U.S. Fish and Wildlife Service (Service) has reviewed the referenced draft document prepared in accordance with the Military Lands Withdrawal Act of 1986. The preferred alternative does not recommend dramatic changes from current uses of the area that would significantly affect fish and wildlife resources, except for potentially opening additional lands to mining (following a mineral assessment) and more aggressive fire suppression for the withdrawal area. Therefore, we have only a few comments on the draft document for your consideration.

Based on only limited information available on fish and wildlife resources of the military withdrawal, we are unaware of any areas that possess unique or crucial fish and wildlife resource values. However, the northwest corner of the Fort Wainwright Maneuver Area does include a significant area of wetland and riparian habitats, particularly in the vicinity of the Chena River, that provides moderate to high habitat values for many species of waterfowl, shorebirds, passerines, grouse, ptarmigans, moose and various species of furbearers. The Resource Management Plan/Environmental Impact Statement does not specifically discuss the fish and wildlife resource values of these wetlands. We recommend that any Habitat Management Plan developed for the Fort Wainwright Maneuver Area include management provisions to maintain or enhance habitat values of this area. 1 2

The draft management plan/impact statement neglects potential impacts to aquatic resources that would occur if the military withdrawal is opened to mineral development. Since the Preferred Alternative provides opportunity to open areas for mineral development, the document should address the impacts to aquatic resources, as well as those to terrestrial resources, that will occur as a result of mineral development. Several Department of the Interior draft cumulative environmental impact statements were recently prepared that address impacts from placer mining. Perhaps the Fort Wainwright Resource Management Plan/Environmental Impact Statement could provide a general synopsis of expected impacts, supplemented with references to the other documents that specifically address this issue. 3

We recommend that the "Threatened and Endangered Species" section of this document be revised to include the following information in order to more adequately and accurately address threatened and endangered species within the military withdrawals and the associated responsibilities for protection of such species.

Two federally listed species occur in the area, the threatened Arctic peregrine falcon and the endangered American peregrine falcon. The Arctic peregrine falcon breeds in northern Alaska and migrates through the area while the American peregrine falcon breeds in central Alaska, including areas near the Fort Wainwright Maneuver Area, and also migrates through the area. There are no known nest sites in the Fort Wainwright Maneuver Area, but given the currently increasing status of peregrine falcon populations in Alaska, it is possible that one or more pairs may find suitable nesting habitat in the area and attempt to breed there. It is unlikely that any of the alternatives will effect the migration of falcons through the area; however, should any occupied nest sites be discovered in the area, the "Recommended Protection Measures" in the Peregrine Falcon Recover Plan-Alaska Population will apply, regardless of the alternative selected. 4

All but one alternative (Alternative B) allows for continued public use of remote landing strips with specific identification of the Pine Creek Airstrip. It may be worthwhile to indicate in the document that much of the airspace over the Fort Wainwright Maneuver Area, including the airspace in the vicinity of Pine Creek Airstrip, is designated as "restricted" (R-2205) and also identify the requisites for using such airspace.

Thank you for the opportunity to comment on this draft document. If you have any questions or need further information, please contact Tony Booth in this office at 456-0324.

Responses

11-1. The text has been slightly expanded on page 38 to note the habitat value of this part of the withdrawal.

11-2. Opinion noted.

11-3. The Environmental Consequences chapter has been revised to give more consideration to the impacts of mining, particularly that to aquatic resources.

11-4. The Management Common to All Alternatives has been amended to direct that should any occupied American peregrine falcon nests be discovered in the withdrawal, the mandates of the Endangered Species Act will apply.

Appendix A
List of Preparers

The following individuals served as planning team members for this Resource Management Plan. They supplied resource expertise and assisted management in formulating the alternatives. Since most of the data contained in this document was obtained by 1990, the following information is current as of that year.

Pam Bissonnette
BLM Geologist
B.S. Geology, University of Montana
Experience: 3 years BLM

Billy Butts
BLM Recreation Planner
B.S. Agriculture, Sam Houston State Teachers College
Experience: 13 years BLM, 19 years Bureau of Indian Affairs, 2 years teaching

John Cook
BLM Archaeologist
Ph.D., Anthropology, University of Wisconsin
Experience: 10 years BLM, 6 years teaching at University of Alaska Fairbanks

Lee Douthit
BLM Subsistence Specialist
B.A., History, Texas Woman's University
M.A., Ph.D, Anthropology, University of Texas at Austin
Experience: 10 years BLM, 5 years university teaching

Jim Ducker
BLM Planning Team Leader
B.A. History, Villanova University
A.M., Ph.D. History, University of Illinois
Experience: 9 years BLM

Rod Everett
BLM Realty Specialist
Experience: 9 years BLM

Russ Hansen
BLM Forester
B.S., M.F. Forestry, University of Minnesota

Experience: 32 years BLM

Dwight Hovland
BLM Soil Specialist
B.A. Chemistry/Biology, St. Olaf College
M.S., Ph.D. Soils, University of Minnesota
Experience: 19 years BLM, 11 years university teaching and research

Junior Kerns
Army Fish and Wildlife Biologist
B.S. Wildlife Biology/Management, University of Missouri
Experience: 13 years Army

Lynette Nakazawa
BLM Vegetation Specialist
B.S. Soils, University of California, Berkeley
Experience: 9 years BLM, 2 years Forest Service

Bill Peake
Army Realty Specialist
B.S. Natural Resource Management, Ohio State University
Experience: 5 years Army, 5 years BLM, 2 years Ohio D.N.R.

Bill Quirk
Army Natural Resouce Specialist
B.S. Agronomy, M.S. Soil Service
Experience: 14 years Army, 1 year Forest Service, 1 year BLM

Kirk Rowdabaugh
BLM Forester and Fire Management Specialist
B.S. Biology, University of New Mexico
M.S. Forest Management, Colorado State University
Experience: 13 years BLM

Ken Spiers
Army Fish and Wildlife Biologist
B.S. Biology, Roanoke College (Salem Virginia)
M.S. Wildlife Management, Virginia Polytechinic Institute and State University
Experience: 9 years Army, 2 years State of Tennessee; 3 years U.S. Marines

The Proposed RMP has benefited from additional geological information furnished by BLM employees Bill Diel, Aden Seidlitz, and Ron Teseneer.

Carol Belenski, the State Office Planning Branch's Visual Information Specialist, served as Project Cartographer and Publishing Coordinator. Sue Steinacher and Kim Mincer provided illustrations.

Appendix B
Mineral Potential Maps

The following pages display the mineral potential for various resources on the Yukon Maneuver Area. The maps reflect the Mineral Potential Classification System as defined in Bureau Manual 3031. This system includes:

Levels of Potential

O The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for accumulation of mineral resources.

L The geologic environment and the inferred geologic processes indicate *low potential* for accumulation of mineral resources.

M The geologic environment, the inferred geologic processes, and the reported mineral occurrences and/or valid geochemical/geophysical anomaly indicate *moderate potential* for accumulation of mineral resources.

H The geologic environment, the inferred geologic processes, the reported mineral occurrences and/or valid geochemical/geophysical anomaly, and the known mines or deposits indicate *high potential* for accumulation of mineral resources. The "known mines and deposits do not have to be within the area that is being classified, but have to be within the area that is being classified, but have to be within the same type of geologic environment.

ND Mineral(s) potential *not determined* due to lack of useful data. This notation does not require a level-of-certainty qualifier.

Level of Certainty

A The available data are insufficient and/or cannot be considered as direct or indirect evidence to support or refute the possible existence of mineral resources within the respective area.

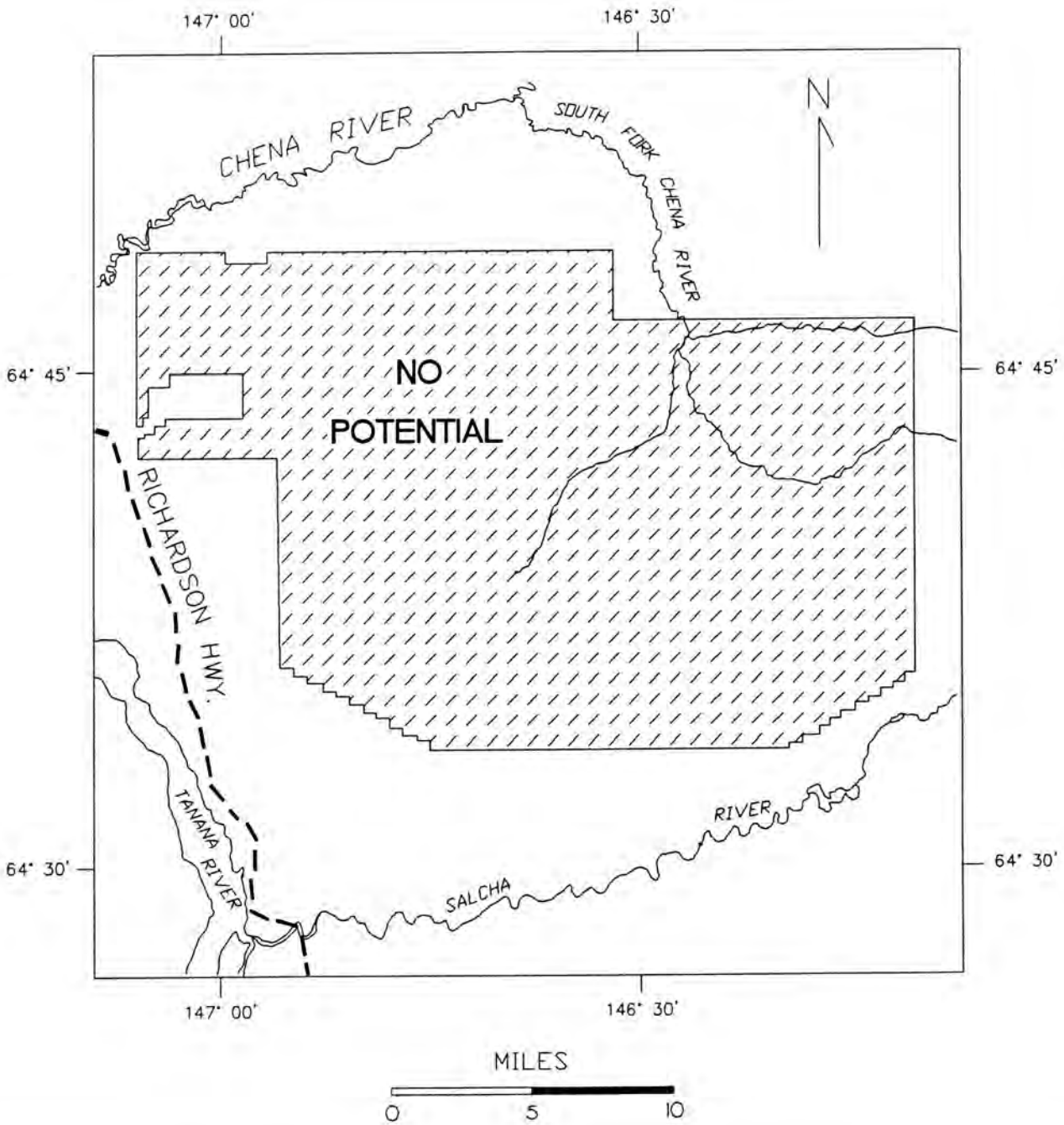
B The available data provide *indirect* evidence to support or refute the possible existence of mineral resources.

C The available data provide *direct evidence* but are quantitatively minimal to support or refute the possible existence of mineral resources.

D The available data provide *abundant direct* and *indirect evidence* to support or refute the possible existence of mineral resources.

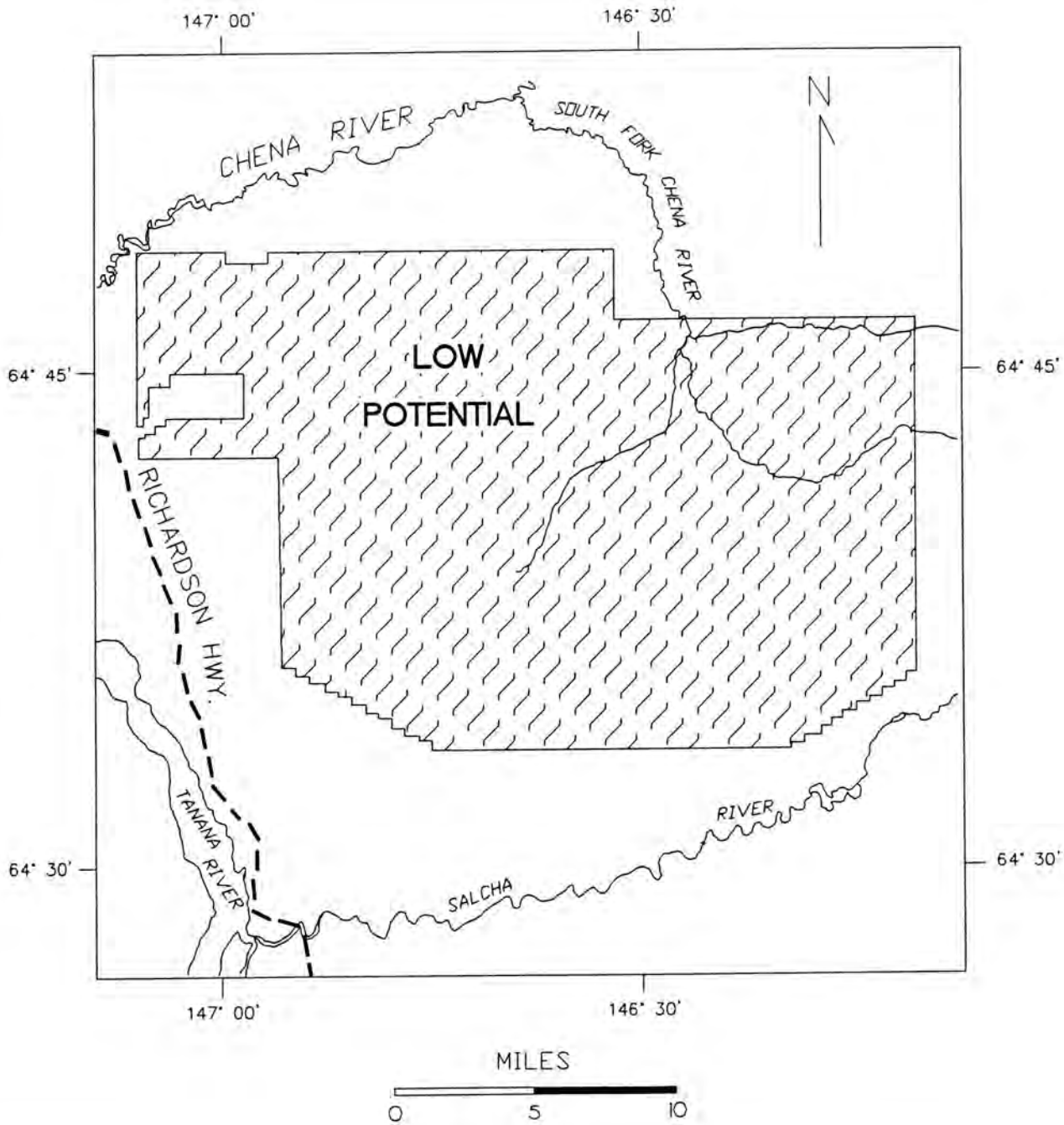
FORT WAINWRIGHT WITHDRAWAL
LEASABLE MINERAL POTENTIAL LEVEL

›››› OIL SHALE ‹‹‹‹
›››› COAL ‹‹‹‹
›››› GILSONITE ‹‹‹‹



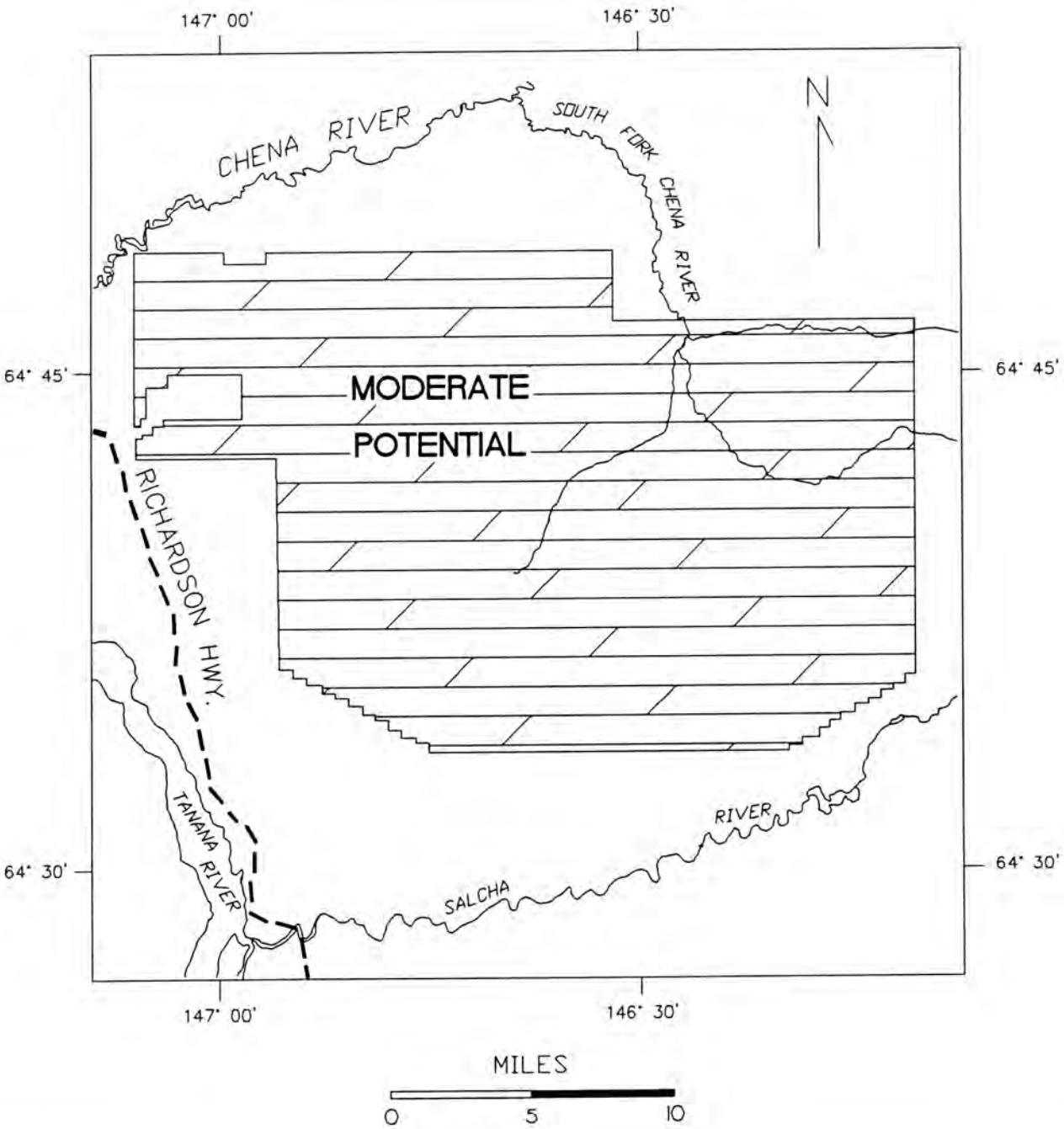
FORT WAINWRIGHT WITHDRAWAL
LEASABLE MINERAL POTENTIAL LEVEL

›››› OIL AND GAS ‹‹‹‹



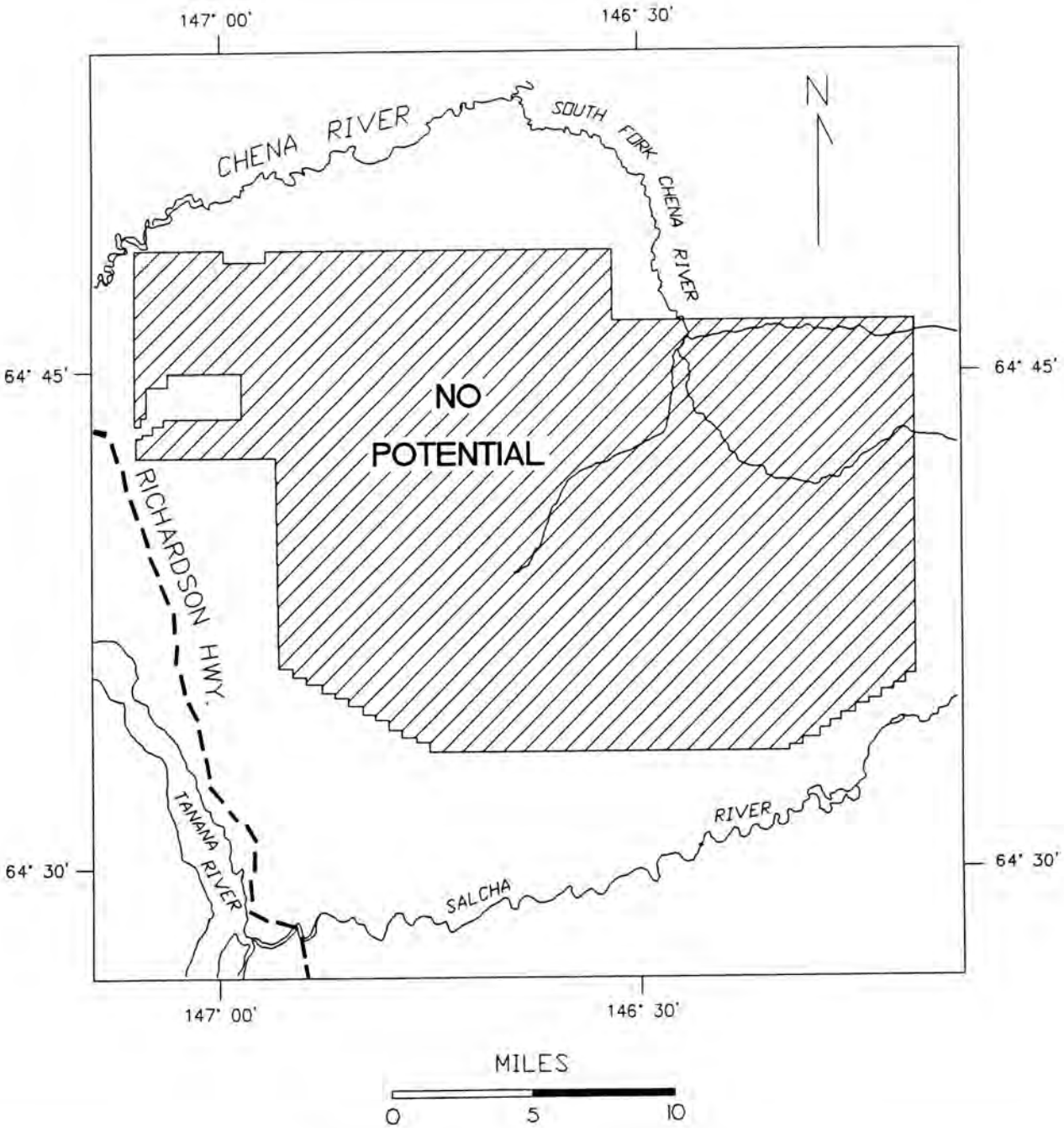
FORT WAINWRIGHT WITHDRAWAL
LEASABLE MINERAL POTENTIAL LEVEL

›››› GEOTHERMAL ‹‹‹‹

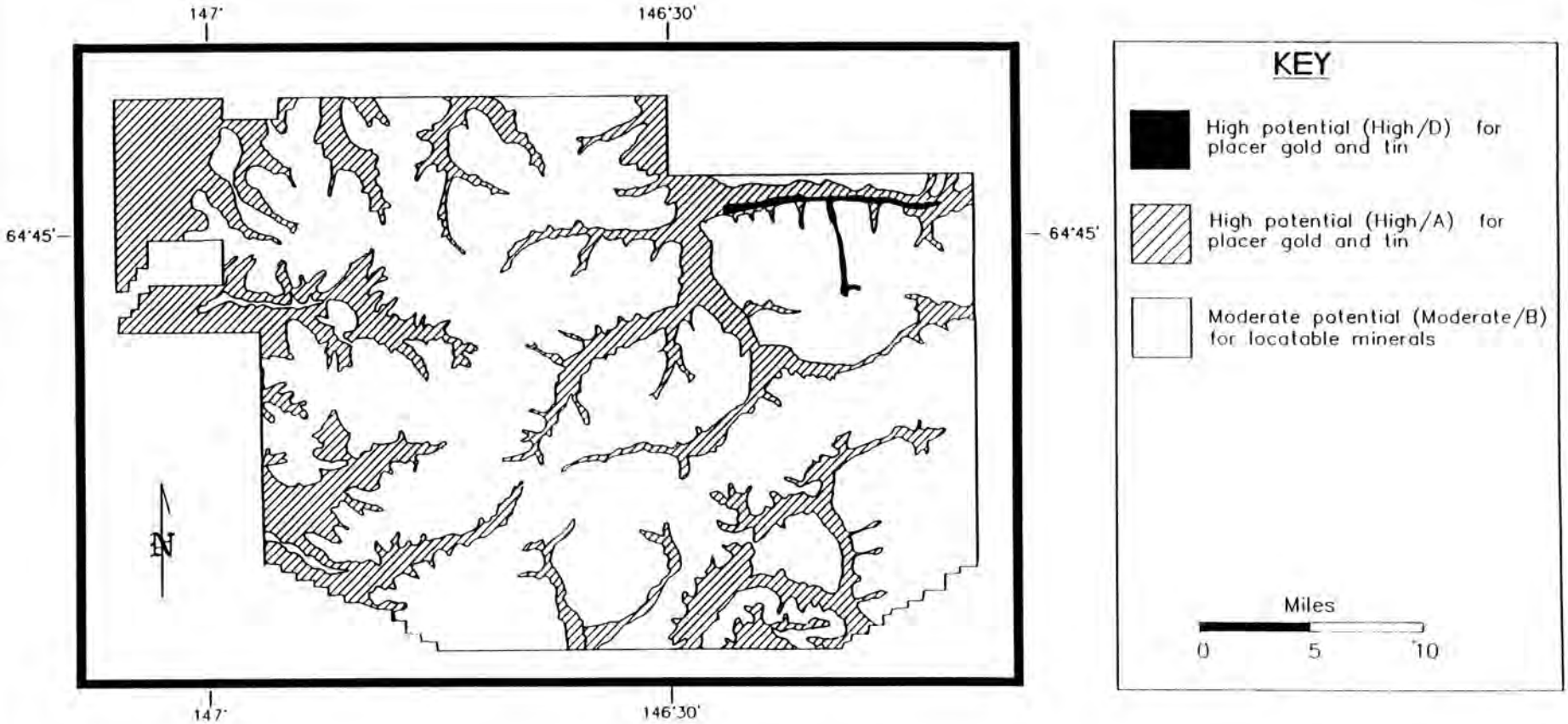


FORT WAINWRIGHT WITHDRAWAL
LEASABLE MINERAL POTENTIAL LEVEL

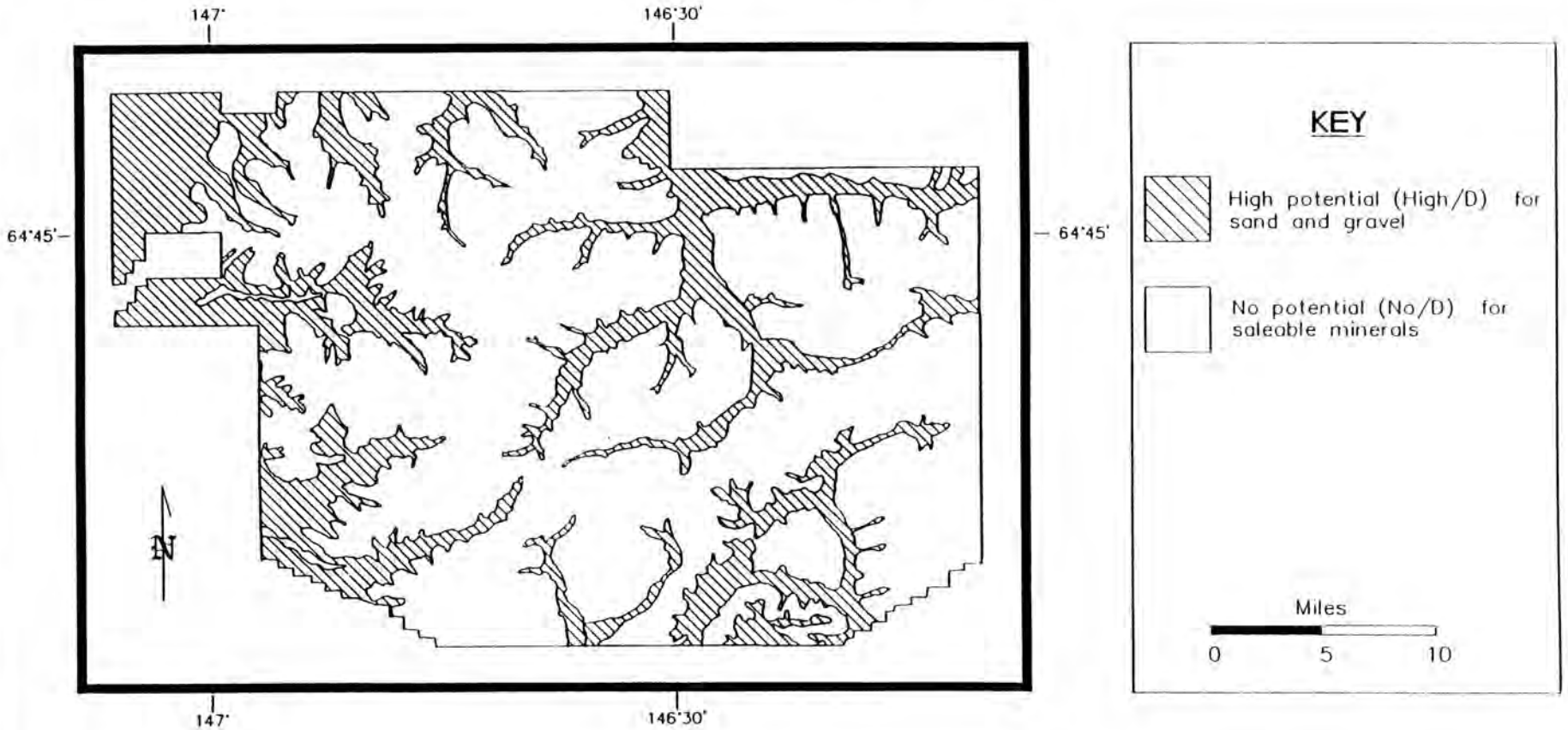
PHOSPHATE, SODIUM, AND POTASSIUM



FORT WAINWRIGHT WITHDRAWAL
LOCATABLE MINERAL POTENTIAL



FORT WAINWRIGHT WITHDRAWAL
SALEABLE MINERAL POTENTIAL



Appendix C
Bibliography

Management Situation Analysis Documents

Most of the resource and management information summarized in this report is addressed in greater detail in a series of reports, called Management Situation Analysis (MSA) documents, prepared by the planning team. The titles of the MSA reports differ. They are cited in the text by the author's name, MSA, and, if the author wrote such a report on more than one resource or use, by the name of the resource or use. These documents are listed below and are available in Anchorage at the BLM's Alaska State Office, Division of Resources and in Fairbanks at the agency's Steese/White Mountains District Office.

Bissonnette, Pam, Bill Diel, Aden Seidlitz, and Ron Teseneer. Coal, Fluid Minerals, Locatable Minerals, Mineral Materials, Non-Energy Leasable Minerals

Butts, Billy. Recreation, Visual Resources

Cook, John. Cultural Resources

Douthit, Lee. Subsistence

Everett, Rod. Lands, Rights-of-Way

Hovland, Dwight. Soils, Water and Air

Kerns, Junior. Fish and Wildlife Habitat

Nakazawa, Lynette. Vegetation

Rowdabaugh, Kirk. Fire Management

Smith, LaRalle. Forestry Resources

Books, Reports, Articles

Alaska. Department of Fish and Game. 1986. "Alaska Area and Community Socioeconomic Profiles." Juneau.

Alaska Department of Natural Resources. 1984. *Chena River State Recreation Area Master Plan.* Division of Parks and Outdoor Recreation.

Andrews, Elizabeth. 1975. "Salcha: An Athapaskan Band of the Tanana River and Its Culture." Master's thesis, University of Alaska, Fairbanks.

Andrews, Elizabeth. 1977. *Report on the Cultural Resources of the Doyon Region, Central Alaska.* Fairbanks: Cooperative Parks Study Unit, University of Alaska.

Andreasen, G. E., Clyde Wahrhaftig, and Isadore Zeitz. 1964. *Aeromagnetice Reconnaissance of the East-central Tanana Lowland, Alaska.* U.S.G.S. Geophysical Investigations Map GP-447.

Andrews, Elizabeth F. and Rebecca K. Napoleon. 1985. *Moose Hunting in the Minto Flats Management Area by Minto Permit Holders, 1984-85.* Technical Paper No. 122. Fairbanks: Alaska Department of Fish and Game.

Arctic Environmental Information and Data Center. 1986. *Alaska Climate Summaries.* Alaska Climate Center Technical Note Number 3, Fairbanks: University of Alaska.

Basescu, N., R. Boomquist, C. Higbee, D. Justus, and S. Simpson. 1980. *Alaska: A Guide to Geothermal Energy Development: Oregon Geothermal-Heat Utilization Center.* Prepared for U.S. Department of Energy Region 10, Seattle, Contract No. EY-77-C-06-1066.

Berg, Henry C., and Edward H. Cobb. 1971. *Placer Deposits of Alaska,* U.S.G.S. Bulletin 1246.

Cobb, Edward H. 1972. *Strategic Mineral Occurrences in Interior Alaska,* U.S.G.S. Bulletin 1374.

Cobb, Edward H. and G. D. Eberlein. 1980. "Summaries of Data on and Lists of References to Metallic and Selected Non-metallic Minerals in the Big Delta and Tanacross Quadrangles, Alaska." U.S.G.S Open File Report 80-1086.

Community Research Quarterly 15 (Fall 1992).

Community Research Quarterly 16 (Spring 1993).

"Contributions of the Military to the Fairbanks Community" *Community Research Quarterly* 10 (Spring 1987): 79-85.

"Economic Projections 1987-1992." *Community Research Quarterly* 10 (Summer 1987): 91-97.

The Fairbanks Factbook, 1983. 1983. Alaska Factbook Series. Anchorage: Research Design Productions, Inc.

"Fairbanks Demographics at Mid-Decade." *Community Research Quarterly* 9 (December 1986): 81-85.

Fairbanks North Star Borough, Community Research Center. 1985. *Fairbanks North Star Borough 1980 Census*, v. 2 *Social & Economic Characteristics*. Community Research Center Special Report No. 11.

Forbes, R. B. and F. R. Weber. 1975. "Progressive Metamorphism of Schists Recovered from a Deep Drill Hole Near Fairbanks, Alaska." *U.S. Geological Survey Journal of Research*. 3:6, 647-57.

Foster, H. L., R. M. O'Leary, S. K. McDanal, and A. L. Clark. 1978. "Analyses of Rock Samples from the Big Delta Quadrangle, Alaska: Samples from the Big Delta Quadrangle, Alaska." U.S.G.S.Open File Report 78-469.

Foster, H. L., F. R. Weber, R. B. Forbes, and E. E. Brabb. 1973. "Regional Geology of the Yukon-Tanana Upland, Alaska" in M. G. Pitcher, ed. *Arctic Geology—Proceedings of the Second International Symposium on Arctic Geology, February 1-4, 1971, San Francisco*: Memoir 19. Tulsa: American Association of Petroleum Geologists.

Fried, Neil. 1986. "1986 Beings [sic] New Economic Era". *Alaska Economic Trends* 7 (January): 23-25.

Fried, Neil. 1986. "Fairbanks' Civilian Side of the Military." *Alaska Economic Trends* 6 (December): 21-24.

Fried, Neil. 1987. "1986 Employment Downturn Underestimated." *Alaska Economic Trends* 7 (March): 29-32.

Gassaway, J. S. and B. S. Abramson. 1977. "Map and table showing districts of known thermal springs in selected igneous rocks in central Alaska." U.S.G.S Open File Report 77-168H.

Hessin, T. D., E. F. Cooley, R. T. Hopkins, C. M. McDougal, and D. E. Detra. 1978. "Geochemical Map Showing the Distribution and Abundance of Cobalt, Chromium, and Nickel in the Oxide Residue of Stream Sediment Samples of the Big Delta Quadrangle, Alaska." U.S.G.S. Open File Report 78-529-L.

"A Historical Perspective of Borough Government." *Community Research Quarterly* 10 (Fall 1987): 7-18.

Hutchison, O. Keith. 1967. *Alaska's Forest Resources*. Institute of Northern Forestry. U.S. Forest Service Resource Bulletin PNW 19. reprint 1968.

"Indicators of Change: The Present Population of the F.N.S.B." *Community Research Quarterly* 10 (Summer 1987): 81-85.

Joesting, Henry R. 1942. *Strategic Mineral Occurrences in Interior Alaska*, Alaska Department of Mines Pamphlet #1.

Jones, D. L., M. C. Blake, Jr., D. G. Howell, and D. C. Engebretson. 1985. *Applications of Tectnostratigraphic Terrane Analysis to Alaska*. Alaska Geological Society.

"The Largest Non-Government Employers in the FNSB." *Community Research Quarterly* 14 (Spring 1991): 26-29.

Lawver, L. A., A. H. Lachenbruch, and T. H. Moses, Jr. 1979. "Status of Regional Heat-Flow Studies in Alaska" in K. M. Johnson, and J. R. Williams, eds. *The United States Geological Survey in Alaska: Accomplishments During 1978*.

Liss, S. A., R. J. Motyka, and C. J. Nye. 1987. *Alaska Geothermal Bibliography*. Alaska Division of Geological and Geophysical Surveys.

"Looking Back at the Pre-Pipeline Years." *Community Research Quarterly* 10 (Fall 1987): 84-92.

Lopes, Roy F. and Robert J. Johnston. 1988. "A Technical Overview of Heap Leaching." Alaska Placer Miners Association Annual Meeting. March 1988.

McKennan, Robert A. 1981. "Tanana." in *Handbook of North American Indians*. Vol. 6, *Subarctic*, ed. June Helm, 562-76. Washington, D.C.: Smithsonian Institute.

Menzie, W. D. and H. L. Foster. 1978. "Mineral Resources Map of the Big Delta Quadrangle, Alaska." U.S.G.S. Open File Report 78-529-D.

Mertie, J. B. Jr. 1937. *The Yukon-Tanana Region, Alaska*. U.S.G.S. Bulletin 872.

Miller, T. P., Ivan Barnes, and W. W. Patton, Jr. 1973. "Geologic Setting and Chemical Characteristics of Hot Springs in Central and Western Alaska." U.S.G.S Open File Report 73-188.

"The Mining Industry and the Fairbanks North Star Borough." *Community Research Quarterly* 10 (Summer 1987): 5-8.

Pewe, T. L., Clyde Wahrhaftig, and Florence Weber. 1966. *Geologic Map of the Fairbanks Quadrangle, Alaska*. U.S.G.S. Miscellaneous Investigations Map I-455.

Rieger, Samuel, Dale B. Schoephorster, and Clarence E. Furbush. 1979. *Exploratory Soil Survey of Alaska.* U.S. Department of Agriculture, Soil Conservation Service.

Shinkwin, Anne and Martha Case. 1984. *Modern Foragers: Wild Resource Use in Nenana Village, Alaska.* Technical Paper No. 91. Fairbanks: Alaska Department of Fish and Game.

Spurr, Joseph. Edward. 1898. "Geology of the Yukon Gold District, Alaska," in *Eighteenth Annual Report of the United States Geological Survey to the Secretary of the Interior, 1896-1897.* Washinton, D.C.: GPO.

Stanley, R. G. 1986. "Effects of Weathering on Petroleum-source Evaluation of Coals from the Suntrana Formation Near Helay, Alaska" in *Geologic Studies of Alaska by the U.S. Geological Survey, 1986.*

Sturman, A. G. 1986. *Mining Claim Information for the Big Delta Quadrangle, Alaska (1985).* Alaska Division of Geological and Geophysical Surveys Report of Investigations 86-18.

U.S. Army. 1980. *Final Environmental Statement Concerning Proposed Land Withdrawal for the 172nd Infantry Brigade (Alaska) at Fort Wainwright.*

U.S. Army. 1988. "Population Profile as of December 1988."

U.S. Army, Corps of Engineers, Alaska District. 1986. *Historic Preservation Plan, U.S. Army Installations and Satellites in Alaska: Inventory of Cultural Resources and Overview, Phase 1.*

U.S. Bureau of the Census. 1981. *1980 Census of Population.* PC80-1-A3.

U.S. Bureau of the Census. 1982a. *1980 Census of Population.* PC80-1-B3.

U.S. Bureau of the Census. 1982b. *1980 Census of Population.* PC80-3-3.

Weber, Florence L., Helen L. Foster, E. C. Keith, and Cynthia Dusel-Bacon. 1978. "Preliminary Geologic map of the Delta Quadrangle, Alaska." U.S.G.S Open File Report 78-529-A

Weber, Florence, T. E. Smith, M. H. Hall, and R. B. Forbes. 1985. *Geologic Guide to the Fairbanks-Livengood Area, East-central Alaska.* Alaska Geological Society.

"Who's Been Paying for Borough Government." *Community Research Quarterly* 14 (Winter 1991): 62-63.

Government Records

Alaska. Department of Labor. 1986. Research and Analysis Section, ES202, 1986. Anchorage.

U.S. Bureau of Land Management. Division of Resources. Military Withdrawals File. Anchorage.

U.S. Soil Conservation Service. 1986. Tanana Valley State Forest Inventory digitized maps. Supplied by Alaska, Department of Natural Resources in Anchorage and by Resource Data Consultants of Bountiful, Utah.

Interviews and Correspondence

Bruce W. Campbell. 1987. (Alaska Division of Mining, Fairbanks). Conversation with Pam Bissonnette, September 29, 1987.

Fort Wainwright

Proposed Resource Management Plan

Proposed Resource Management Plan

Introduction

The Fort Wainwright Proposed Resource Management Plan is the result of a joint BLM-Army planning effort which began shortly after passage of the Military Lands Withdrawal Act of 1986. It fulfills that law's requirement to plan for the nonmilitary use of the fort. It has benefited from comments from the public and public agencies at the outset during public meetings to help define issues in 1987 and after publication of the Draft Resource Management Plan late in 1988.

The PRMP is the same as the Proposed Plan described in the Final Environmental Impact Statement portion of this volume and is based on the Preferred Alternative contained in the DRMP. Substantive changes from the Preferred Alternative are explained in footnotes. The maps for the PRMP are the same as those contained in the FEIS; please refer to those maps, which can be located using the Table of Contents at the beginning of this volume.

Goals and Objectives

The Military Lands Withdrawal Act of 1986 provides the essential goals and objectives of the PRMP for Fort Wainwright's withdrawal. The law dictated that the lands be reserved for military use, but called for a plan to include provisions "necessary for proper management and protection of the resources and values" of the area. Therefore, the general goal of the planning process has been to identify appropriate multiple-use resource management which will not hinder the military from carrying out its necessary activities.

The actions in this PRMP preserve the primary function of the withdrawal—military training—and allow economic development and continued recreational activities within certain environmental constraints. The military's need for large tracts of undisturbed lands, the healthy state of the withdrawal's current habitat, the rather modest prospects for economic development, and the desirability of emphasizing undeveloped recreational activities in most of the withdrawal make such a diverse multiple use plan particularly attractive. This management prescription also recognizes the critical safety questions, both for civilians and soldiers, inherent in utilizing areas in which troops train with live ammunition.

Management Prescriptions

The following statements contain the prescriptions for management of the withdrawal during the life of this plan. The initial section includes the steps included in the "Management Common to All Alternatives" section of the FEIS.

Management Common to All Alternatives

Access

1. Due to the dangers of unexploded munitions inherent in impact areas, the Stuart Creek Impact Area is closed to all public access and use. Because of the national security interest in not disturbing the ground in the AFTAC site, it too is closed to all public access and use, except as permitted by Proposed Action 4. (See Closed Areas map.) Uses, such as mining, timber harvest, and scientific investigations, may be conducted in these areas if they are allowed by the plan and if they are approved by the authorizing officer. These areas are closed to off-road vehicle (ORV) use, unless specifically approved for particular use.
2. If additional potentially dangerous sites are found, the federal government would close them to public use.
3. When firing occurs into the impact area, the affected portion and a two mile buffer adjacent to it are off limits to all access and use.
4. All portions of the withdrawal are subject to temporary closures when the military needs them to conduct training and testing. Such closures would be for the minimum areas and periods necessary for the military's exclusive use.
5. Unless explicitly opened to public use by the plan or, on a case by case basis, by the Army, all military structures would be off limits to nonmilitary use.
6. The Army would clean up asbestos and other debris around the two Nike battery sites as funding is made available. Until this is done, these buildings and the grounds immediately around them are off limits to nonmilitary personnel. This does not preclude driving by the sites on Johnson and Manchu roads.
7. Mining and other activities which involve substantial ground disturbance are prohibited from all drop zones and landing fields, where a relatively smooth surface is necessary for safe military operations, and within one mile of all existing roads and major trails (see Roads and Major Trails map), because most military training occurs near the road system. Mineral material sites are exceptions to this. They may be placed within one mile of extant roads with the concurrence of the military. Timber harvests do not normally result in the type of substantial ground disturbance contemplated in this restriction.

8. Signs would be maintained at all major road and trail entrances to the withdrawn lands. The signs would identify the property and the requirements for entering.
9. No ORVs would be allowed to run along the Trans-Alaska Pipeline System's work pad used for maintenance along its line without the permission of Alyeska Pipeline Service Company, BLM, and the District Corps of Engineers. ORVs weighing less than 1,500 pounds may cross the pipeline. ORVs weighing more than 1,500 pounds would need approval to cross the pipeline.

Air, Soil, Water, and Vegetation

Nonfederal uses of the withdrawal must conform with applicable federal, state, and borough laws and regulations concerning protection of air, soil, and water. Federal uses would comply with federal law, and with state and local law to the extent consistent with the federal mission.

All proposed activities, military and nonmilitary, for the withdrawn lands are evaluated, under the authority of NEPA, for impact on air, soil, water, and vegetative resources. Activity plans will comply with the Bureau of Land Management policy on riparian resources management, and sites disturbed by nonmilitary activities will be restored in accordance with Bureau riparian guidance.

Application of all herbicides and pesticides would only be conducted in accordance with the Fort Wainwright Pest Control Plan and all applicable laws and regulations.

Fish and Wildlife Habitat

Pursuant to the Sikes Act, the 6th Infantry Division (Light) has entered into a Cooperative Agreement with the U.S. Fish and Wildlife Service (F&WS) and with the Alaska Department of Fish and Game (ADF&G). The agreement calls for the development of fish and wildlife management programs which, within the constraints of the Army's needs to fulfill its mission, would improve habitat, determine "the extent of equitable military and nonmilitary access" to harvesting and enjoyment of fish and wildlife, determine a consensus on the "need and means for controlling, protecting, stocking, or restoring" desirable species, and develop with F&WS and ADF&G an inventory of fish and wildlife resources on the YMA. BLM associates itself with these responsibilities through adoption of a Resource Management Plan and associated implementing Memorandum of Understanding. BLM would participate with the Army, F&WS, and ADF&G in developing these programs through a Habitat Management Plan for the withdrawal and would join as a signatory agency in any revision of the Cooperative Agreement.

There are no known peregrine falcon nests in the withdrawal. But their population is increasing in the state. Should any occupied nests be discovered on the withdrawal, the mandates of the Endangered Species Act will apply.

Forestry

Any sale of timber on the withdrawn lands would be governed by common BLM timber management practices, contract stipulations, and the mandates of the State's forest practices regulations.[1] Common requirements include:

a. the construction, improvement, and maintenance of safe and environmentally sound road systems. Loggers may be required to properly locate and install culverts, stabilize cuts and fills, and properly grade roads.
b. the felling and yarding of timber in such a way as to protect soil and water quality, residual trees, and human safety. Some provisions may be aerial yarding to protect fragile sites, limbing before yarding to protect residual trees or soil or water quality, and directional felling to protect buffer strips, streams, and adjacent stands.
c. the treatment of a logged site to prepare it for the next generation of trees. Some ways to prepare a site are to rip compacted skid roads, abandoned haul roads, and landings and to scarify, slash, pile, and underburn the logged site.
d. the disposal of logging slash for silvicultural and/or fire hazard reduction purposes.
e. mitigation measures for protecting wildlife habitat. Examples of some measures are the removal of debris dams from streams, and leaving wildlife trees within a cutting area.
f. other miscellaneous provisions, where appropriate, such as meeting minimum fire requirements and application of disease control measures.

Cultural Resources

The Army prepared a historic preservation plan (*Historic Preservation Plan for U.S. Army Lands in Alaska*) in June 1986. In accordance with Sec. 106 of the National Historic Preservation Act, the Army's plan requires that an inventory be completed before all ground-disturbing activities and, where appropriate, mitigation of cultural resources. The general program established by this historic preservation plan, as modified by this RMP and any Cultural Resource Management Plan mandated by this RMP, will guide cultural resource management during the period of the withdrawal.

Recreation

The Army conducts its outdoor recreation management role on the withdrawn lands so as to furnish equal opportunity to the public for recreation activities and to furnish as wide a variety of recreation as conditions allow.

Lands

Congress has designated the withdrawn lands as appropriate for military use. Consequently, neither the Proposed Plan nor the alternatives propose that any of these lands be made available for disposal, including State or Native selection, sales

---

[1] This statement was revised to assure that timber practices would comply with the State's new forest practices regulations.

under FLPMA or the Recreation and Public Purposes Act, or exchanges.

Rights-of-Way

There is a right-of-way on the YMA for a corridor for the Trans-Alaska Pipeline, which passes through the extreme southwestern corner of the withdrawn lands. No rights-of-way would be allowed in any of the closed areas of the withdrawal.

Private individuals and the State may accept directly a congressionally granted right-of-way under the authority of Revised Statute 2477, if constructed prior to the withdrawal of these lands in 1958. The federal government would work cooperatively with the State to identify all rights-of-way claims made pursuant to RS 2477 on public lands for administrative purposes only. The validity of such claims can only be determined in a court of competent jurisdiction.

Minerals

The military may use sand and gravel for its purposes; this authority flows from the military withdrawal act itself.

Measures to safeguard resource values outlined in 43 CFR 3100, 43 CFR 3600, and 43 CFR 3809 will apply to mineral development on the withdrawn lands.

Under the terms of the Military Lands Withdrawal Act of 1986, should the withdrawn lands be opened to mineral location, mineral patents would convey title to locatable minerals only. These patents would also carry the right to use as much of the surface as is necessary for mining under the guidelines established by the Secretary of the Interior by regulation.

Subsistence

The federal government would follow the procedural requirements mandated by Section 810 of the Alaska National Interest Lands Conservation Act where appropriate in the development of any additional discretionary plans or actions affecting all or portions of the military lands.

Proposed Plan

Access

Proposed Action 1

The public may enter the post after gaining permission from the Army at Fort Wainwright. This pertains to all forms of access. They are expected to comply with all rules concerning restricted access and permanently and temporarily closed portions of the withdrawal.

Proposed Action 2

The public may use unimproved remote landing areas after complying with notification requirements and provided that this use does not interfere with military activities or incur liability to the federal government.

Proposed Action 3

Appropriate signs would be erected to warn the public and prevent public access into the impact area and onto the AFTAC site. Signs would warn of the potential closure of the buffer area around the impact area which encompasses some of the road network.

Proposed Action 4

Nonmilitary use of off-road vehicles (ORVs) and road vehicles is permitted in some portions of the withdrawal and under certain conditions. The Stuart Creek Impact Area and the AFTAC site are closed to ORV use as indicated in the management common to all alternatives, and use of the remainder of the lands is limited as follows:

Road Vehicles and ORVs of 1,500 pounds or more — Vehicles of more that 1,500 pounds gross vehicle weight (GVW) may travel on Johnson, Skyline, Quarry, Manchu, Transmitter and Beaver Creek[2] roads and Brigadier Trail. (GVW is the manufacturer's maximum laden weight, which is the vehicle weight plus its recommended maximum load.) Roads may be added or deleted from this list as necessary to protect the environment or enhance the military's mission. A permit is required to use vehicles of this size off of these routes. Generally permission to use these vehicles off these routes would only be granted when there is no danger of such use interfering with military operations, damaging the habitat, or detracting from the recreational value of the withdrawal.

---

[2]Beaver Creek Road has been added to the list of those roads on which vehicles can travel. In contrast to the Preferred Plan, the Proposed Plan allows travel on this road through the AFTAC site. All other nonmilitary access and use of the AFTAC is generally prohibited. (See the first Access element listed under Management Common to All Alternatives.)

ORVs of less than 1,500 pounds — No permit would be required for nonmilitary use of ORVs less than 1,500 pounds GVW. General summer use of these ORVs would be limited to the roads listed above and to trails with low erosion potential. These ORVs may operate off these roads and trails during periods with snow cover adequate to prevent disturbance of the vegetative cover. The military may also exclude public use of ORVs in certain areas where their use would be detrimental to the military's mission.

An accompanying ORV Use map indicates the roads on which road and off-road vehicles may operate, the trails on which ORVs of less than 1,500 pounds can travel, and the AFTAC site and impact area from which ORVs are generally excluded. Trails suitable for ORVs of less than 1,500 pounds may be added to or deleted from those displayed on the map. The authorized officer, as established in the BLM-Army Memorandum of Understanding to implement this plan, may permit addition or deletion of summer use of ORVs or road vehicles on specific trails for specific purposes or under certain ground conditions. During the winter, ORVs generally can use all areas of the withdrawal, except the AFTAC site and the impact area.

Vegetation

Proposed Action 5

In the course of developing the military, recreational, and economic potential of the withdrawn lands, the federal government would seek to take advantage of opportunities to improve the fort's vegetation. Military and nonmilitary activities outside of the impact area would limit vegetation disturbance, particularly to wild food sources such as berries, as much as possible consistent with military needs and the goals of recreation and economic development.

Visual Resources

Proposed Action 6

The withdrawal is classified as Visual Resource Management (VRM) 4. The management objective for VRM 4 areas is to provide for activities which require major modifications of the existing character of the landscape.

Fish and Wildife Habitat

Proposed Action 7

Develop and implement a Habitat Management Plan (HMP) to manage existing habitat. The HMP should manage toward the ADF&G's goals for species. Among other questions, the HMP should consider what, if any, water quality control program is necessary, the implementation of a riparian resource inventory, and enhancement programs for riparian sites in less than good condition. The HMP should be coordinated with the Forest Management Plan outlined in Proposed Action 8. The plan would be consistent with the military's mission.

Forestry

Proposed Action 8

Develop a Forest Management Plan to determine the opportunity for harvest and the sustainable allowable cut of timber and fuel wood. Such a plan must remain within the constraints of the military mission; public safety and preservation of habitat and recreation are other values which should be considered. It may, for example, mandate the maintenance of uncut buffer strips along streams and lakes. (It is understood that forests in the withdrawal fall under BLM's restricted category for management; that is, management of the withdrawal is primarily for the military, but timber harvests are permitted. The Forest Management Plan should address allowable harvest levels, reforestation methods, and appropriate silvicultural methods by measuring the impact of each on military needs, recreational opportunities, and economic considerations.)

Cultural Resources

Proposed Action 9

The BLM and the Army will develop a Cultural Resource Management Plan in consultation with the State Historic Preservation Officer. The CRMP will address the requirements of Sec. 110 of the National Historic Preservation Act. It will follow the general directions outlined in the *Historic Preservation Plan for U.S. Army Lands in Alaska.* In addition it will provide for testing and evaluation of archaeological site XBD-095. If this site is significant, it will be excavated. Other cultural resources will be inventoried and, if necessary, mitigated prior to anticipated ground-disturbing activities. Any resources found will be excavated and cleared. Cultural resources will be managed for their information potential.[3]

Trespass

Proposed Action 10

Only the federal government and private developers authorized by the government may erect or maintain structures on the withdrawal. All unauthorized use of the land or resources will be investigated and either permitted or stopped. All unauthorized structures are subject to possession by the government following proper notice.[4]

Recreation

Proposed Action 11

All those who enter the withdrawn lands must comply with the military's rules. These presently require:

---

[3] This action has been expanded to call for the development of a Cultural Resource Management Plan. The CRMP will indicate how the general directives in the Army's *Historic Preservation Plan for U.S. Army Lands in Alaska* and in this RMP will be carried out and will address the Sec. 110 requirements of the National Historic Preservation Act, thus rectifying short-comings cited by the State Historic Preservation Office.

[4] The management action has been expanded to address all forms of trespass, not just unauthorized cabins.

a. all those who enter to hunt, fish, or trap must sign a liability release form and attend a Hunting/Trapping/Fishing briefing prior to undertaking these activities each year.
b. hunters and trappers must submit completed harvest reports to the appropriate Army office.

Proposed Action 12

Guides, outfitters, and air taxi services may operate on the withdrawal, provided they comply with other regulations concerning nonmilitary use of the land. Guides, outfitters, and air taxi services are responsible for ensuring that their clients comply with these rules. Guides and outfitters must obtain a permit to use federal lands and comply with other provisions of 43 CFR 8372.

Lands

Proposed Action 13

The BLM may issue leases and permits pursuant to 43 CFR 2920. These use authorizations are subject to approval by the Army, which may reject the proposal or require additional stipulations to assure the military's unhindered use of the withdrawal.

Rights-of-Way

Proposed Action 14

Rights-of-way may be granted if they do not conflict with the military's mission. They should be subject to terms and conditions to assure that military needs are met.

Minerals

Proposed Action 15

The withdrawal will remain closed to the operation of the Mining Law of 1872, the mineral Leasing Act of 1920 as amended, the Mineral Leasing Act for Acquired Lands of 1947, and the Geothermal Steam Act of 1970. Pursuant to Sec. 12(a) of the Military Lands Withdrawal Act, the Army and BLM, by 1996 and at least every five years thereafter, will jointly reconsider whether it would be appropriate to open portions of the withdrawal to the operation of the mineral laws.[5]

Proposed Action 16

Pursuant to Section 1 of the Military Lands Withdrawal Act of 1986, the withdrawal is closed to all forms of mineral

---

5 The Preferred Alternative in the DRMP called for a mineral assessment before consideration of any mineral opening. Under the Proposed Plan the determination on whether to open parts or all of the withdrawal to mineral development rests solely on such activities' compatibility with the military's need for training.

material disposal, both sale and free use, other than that which supports military activity.[6]

Fire Management

Proposed Action 17

The withdrawal would be divided into three fire management areas and a number of Critical fire suppression sites. Virtually all the area within the firebreak surrounding the Stuart Creek Impact Area would be in a Limited fire protection area. The exceptions would be those Air Force facilities in the impact area which now receive Critical protection under the Army's fire protection plan, and any future such facilities for which the Army or Air Force seek protection. These specific sites, as well as similar sites outside the firebreak, would receive Critical protection under this plan. The area east of a trail from Brigadier Trail down Ninety-eight Creek would be designated a Modified fire protection area. The remainder of the YMA would have Full fire protection. (See the Fire Management Categories Map.) Future changes in suppression management can be effected through the Interagency Fire Management Plan with the concurrence of the military.[7] The BLM, with the concurrence of the Army, will draft a Fire Management Plan to reduce the fire hazard on the withdrawal.

Consistency Determinations

The Bureau of Land Management strives to have its plans conform to those of other federal agencies and with the land use plans of state and local governments. In formulating the Fort Wainwright Resource Management Plan, the BLM has benefited from the participation of members of the 6th Infantry Division (Light)—the primary users of the withdrawal—on its planning team and on a steering committee overseeing the work of the planning team. The U.S. Air Force, which conducts extensive training on this withdrawal, has assisted in building this RMP, both through direct meetings with the planning team and indirectly by communicating its needs through the Army.

The plan has also benefited from the comments of various state and local agencies. Several comments made by these bodies resulted in changes in the Preferred Alternative reflected in the Proposed Plan. Additionally, a copy of this

---

6 Sec. 1 of the Military Lands Withdrawal Act of 1986 closed the withdrawal to mineral material disposals. Thus, the Preferred Action had to be altered to exclude the disposal of mineral materials.

7 The Preferred Alternative in the DRMP used a political boundary about ten miles long dividing fire suppression areas. This is unwise. The Proposed Plan rectifies this situation and also conforms suppression classifications within the YMA with changes the State intends to make to classifications for its lands outside the withdrawal.

Proposed Plan has been submitted to the Governor of Alaska for a consistency review.

The plan is consistent with plans adopted by the U.S. Army for these lands as well as with the *Fairbanks Northstar Borough's Comprehensive Plan.* It designated nearly all of the land adjacent to the withdrawal as either "Open Space/Natural Area" or "Reserve Area." (Reserve Area is considered appropriate for hunting, trapping, fishing, mining, recreation, or agriculture.) The borough assigned a portion of the withdrawal directly north of the AFTAC site for remote settlement and designated an area just south of the withdrawal in the Little Salcha drainage as "Preferred Forest Land."