

CHAPTER II: ALTERNATIVES

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CHAPTER II: ALTERNATIVES

2.1 INTRODUCTION

This chapter presents the four alternative approaches to achieving the purpose and need of the Northeast NPR-A IAP/EIS described in **section 1.2**. These alternatives present a range of actions in terms of the amount of additional lands in the planning area that would be opened to oil and gas leasing, and the types of protective measures that would be taken to protect surface resources within the planning area from the impacts of oil and gas development. The four alternatives in this Supplement are almost entirely unchanged from those presented in the Amended IAP/EIS. The limited substantive changes that have been made to the alternatives are noted below in this chapter.

2.2 FORMULATION OF THE ALTERNATIVES AND MITIGATION MEASURES

2.2.1 Overview

The alternatives presented in this Supplement derive primarily from the previous two plans conducted by BLM for the planning area. Alternative A is the decision contained in the 1998 ROD for the Northeast NPR-A IAP/EIS and was also presented as Alternative A in the Amended IAP/EIS (Map 2-1). Alternatives B, C and D are, with minor modifications, the same as Alternatives B, C and D, respectively, in the Amended IAP/EIS (Maps 2-2, 2-3 and 2-4).

The range of alternatives presented in the Amended IAP/EIS was developed by an interdisciplinary team consisting of BLM staff from the agency's Alaska State Office and Northern Field Office (now termed the Fairbanks District Office). The Amended IAP/EIS process greatly benefited from ideas offered by other federal agencies; tribal, state, and local governments; and the public through 1) initial scoping of ideas, issues, and concerns; 2) comments on the Draft Amended IAP/EIS, with meetings held in key communities within and adjacent to the planning area, as well as in Anchorage, Fairbanks, and Bethel, Alaska, and in Washington D.C.; and 3) from public comments received during ANILCA 810 hearings held in key communities within and adjacent to the planning area concerning the potential impacts of the various alternatives on subsistence resources and activities. In addition, we received comments from the public on the Final Amended IAP/EIS.

BLM initiated the process to supplement the Amended IAP/EIS by publishing a notice of intent to do so in the *Federal Register* on December 4, 2006. The notice of intent indicated that a formal scoping process would not be undertaken, but did request comments and suggestions from the public regarding concerns on issues of interest, particularly recommended mitigation measures. Based upon comments received on the Final Amended IAP/EIS, BLM has modified Alternative D by modifying some protective strips and ROPs to increase protections of sensitive wildlife and subsistence resources and to clarify their intent, and has deleted confusing language. These modifications are reflected in Appendix A of the 2006 Northeast NPR-A ROD. Additionally, in response to the notice of intent for the Supplement and upon internal BLM review, BLM and the North Slope Borough (NSB), which is participating in the supplemental planning process as a cooperating agency, made minor modifications and clarifications to the language of Alternatives B

through D. The process resulted in clarifying the language in several stipulations and required operating procedures (ROPs), removing the redundant exception clause from Alternatives B through D, addressing summer overland travel in a ROP rather than in a statement of policy in Sec. 2.4 (“Management Actions Common to All Alternatives”; a ROP adopted in a ROD has the force and effect of law, while statements of policy do not), and making a number of other editorial and clarification modifications elsewhere in this chapter and other sections of the IAP/EIS.

With the above exceptions, the alternatives in this Supplement remain the same as those previously analyzed in the Amended IAP/EIS. As required by 43 CFR § 2361.1, each of the four alternatives analyzed in this Supplemental IAP/EIS process contains measures to mitigate or avoid unnecessary surface damage and minimize ecological disturbance throughout the planning area to the extent consistent with the purposes of the NPRPA for the exploration of the planning area. Also, as described in section 2.2.2 below, each alternative presents a different approach to providing maximum protection to surface resources within the two designated Special Areas in the planning area—the Teshekpuk Lake Special Area and the Colville River Special Area (Map 1-4).

“Mitigation measures,” as the term is used in BLM’s NEPA Handbook (p. V-20), are introduced in the environmental consequences analysis in Chapter 4. Such mitigation measures are not part of the alternatives, unlike lease stipulations and ROPs (for a discussion of stipulations and ROPs, see **section 2.3.5**). Rather they are suggestions of additional means to lessen impacts that are identified in the impact analysis in Chapter 4, specifically in **sections 4.3.8, 4.4.8, 4.5.8, and 4.6.8 on Birds and 4.3.19, 4.4.19, 4.5.19, and 4.6.19 on Public Health**, given that in this case the “mitigation measures” all pertain to birds and public health issues. Some may not be within BLM’s authority to implement, and thus would require the involvement of other agencies to effectuate them. These mitigation measures, along with a description of their effectiveness to mitigate impacts as well as any impacts these measures would themselves create, are included to allow for public consideration and comment. The ROD will identify which mitigation measures identified in Chapter 4 BLM will adopt.

The NSB is participating in the supplemental planning process as a cooperating agency in order to maximize use of available resources and special expertise and minimize duplication in those areas of overlapping responsibilities. In this role as a cooperating agency, the NSB is assisting BLM in drafting an IAP/EIS that is in compliance with NEPA. Cooperating agency status does not, however, indicate the NSB’s implicit or explicit support for any particular alternative.

2.2.2 Special Areas and Other Areas with Additional Protections

The planning area includes portions of two designated Special Areas (see **section 3.3.1** and Map 1-3). The Teshekpuk Lake Special Area was designated primarily to protect important nesting, staging, and molting habitat for a large number of waterfowl. The area also provides important habitat for caribou and serves as an important area for subsistence resources and uses. The Colville River Special Area within the planning area lies along that river and two of its larger tributaries, the Kogosukruk and Kikiakrorak rivers. It was designated to protect raptor species that inhabit bluffs within the Special Area, particularly the peregrine falcon, which was listed as an endangered species at the time of designation.

Each alternative also identifies other areas with exceptionally important surface resources, many of which overlap the two designated Special Areas. These other areas are not in themselves administrative or legislative designations, and they carry with them no formal regulatory special status. They simply are areas that BLM has identified, through the planning process, where

resource concerns exist that may require consideration of special protections. Some of these spatially defined “protection areas” were first identified in the 1998 Northeast NPR-A IAP/EIS and were referred to as Land Use Emphasis Areas, or LUEAs (Maps of LUEAs can be found in the 1998 Northeast NPR-A Final IAP/EIS. See Figures II.B.1 to II.B.14, pages II-4 to II-17 therein). In developing the Amended IAP/EIS and this Supplement, the concept of identifying key resource or “protection areas” remains, but the term LUEA is no longer used. They are referenced in stipulations and ROPs and their geographic extent is reflected in maps depicting one or more of the alternatives. The “protection areas” used in the Amended IAP/EIS and carried forward in this Supplement were also modified to some degree from those presented in the 1998 Northeast NPR-A IAP/EIS if a more logical organization was identified. For example, in the 1998 Northeast IAP/EIS, the Fish Habitat LUEA included deepwater lakes and some rivers within certain geographic bounds. Under the Amendment’s and Supplement’s Alternatives B, C, and D, Rivers Area and Deep Water Lakes are identified separately. The “protection areas” defined for Alternatives B, C, D in the Amendment and this supplement are the Rivers Area, Deep Water Lakes, Teshekpuk Lake, Goose Molting Area, Teshekpuk Lake Caribou Habitat Area, Coastal Area, Colville River Raptor, Passerine, and Moose Area, and Pik Dunes. In addition, three additional “protection areas” were developed exclusively for Alternative D in the Final Amended IAP/EIS. These are the Caribou Movement Corridor, Southern Caribou Calving Area, and Lease Tracts areas. These area-specific protections, in conjunction with the general Planning Area-wide lease stipulations and ROPs, enhance BLM’s management of the planning area and particularly ensure that BLM meets the requirements of the NPRPA to provide maximum protection of surface values in the Teshekpuk Lake Special Area and the Colville River Special Area consistent with the purpose of the NPRPA.

The following provides additional information about the protection areas:

2.2.2.1 Rivers Area

The Rivers Area includes areas on the east side of the Ikpikpuk River; both sides and the bed of the Miguakiak River; the west side of the Colville River; both sides of the Tingmiaksiqvik River (also identified as the Ublutuoch River on USGS quadrangle maps; this river would receive special protections only under Alternative B and Alternative D); from the top of the bluff (or bank if there is no bluff) on both sides of the Kikiakrorak and Kogosukruk rivers and several of the Kogosukruk River tributaries; and both sides of portions of Fish and Judy creeks.

These rivers and creeks provide important spawning, migration, rearing, and over-wintering habitat for both anadromous and resident species of fish. Fishing use includes a substantial subsistence harvest by the residents of Barrow and Nuiqsut and a commercial take at the mouth of the Colville River.

2.2.2.2 Deep Water Lakes

Deep Water Lakes includes numerous waterbodies with a depth greater than 13 feet [4 meters] (Mellor 1985). Generally these lakes provide important spawning, migration, rearing, and over-wintering habitat for both anadromous and resident species of fish. Some of these lakes also provide important habitat for molting waterfowl and loafing and foraging habitat for shorebirds, and are important subsistence, cultural, and traditional use areas for NSB residents. The Deep Water Lakes protection area extends ¼ mile around the perimeter of any deepwater lake within the planning area.

2.2.2.3 Teshekpuk Lake

Teshekpuk Lake is a dominant geographic feature of the region. Teshekpuk Lake's range of habitat types includes a 20- to 40-foot deep basin and a complex shoreline that features bays, spits, lagoons, islands, beaches, and extensive shoal areas. Teshekpuk Lake provides over-wintering habitat for fish and breeding habitat for waterfowl and shorebirds and is an important resource for subsistence-based cultures in the region.

2.2.2.4 Goose Molting Area

The Goose Molting Area includes suitable habitats in and around (including the lakes north and northeast of) Teshekpuk Lake. This area is the most important molting habitat for black brant, Canada geese, and greater white-fronted geese in the Arctic (see **section 3.3.6.3; Waterfowl**). Up to 30% of the Pacific flyway population of brant molt in this area (36,817 were counted in 2001). Up to 34,930 molting greater white-fronted geese, and 3,914 snow geese were counted in recent years with an increasing trend through time. Approximately 26,680 Canada geese were observed in 1984, but numbers have declined since that point, with a more recent high of approximately 18,000 in 2001 (Mallek 2006). Molting geese, which are highly sensitive to human disturbance, are present in the area from late June to mid- to late August. This area also provides important breeding habitat for several species of shorebirds.

2.2.2.5 Teshekpuk Lake Caribou Habitat Area

The Teshekpuk Lake Caribou Habitat Area includes suitable habitats in the Teshekpuk Lake region that are essential for all season use by caribou, including calving and rearing, insect-relief, and migration. Caribou of the Teshekpuk Lake Herd calve from late May to mid-June. Studies show that the main areas for calving can shift somewhat within the broad area, with concentrations occurring in several different locations around the lake from year to year (see **section 3.3.7.1, Terrestrial Mammals**). For the remainder of the summer, areas of shorelines, barren dunes, and ridges can provide relief from intense insect harassment, which can affect caribou energy budgets and productivity of cows. The land between Teshekpuk Lake and the Beaufort Sea from the Ikpikuk River to the Kogru River is particularly valuable for this purpose.

2.2.2.6 Coastal Area

The Coastal Area includes those areas within $\frac{3}{4}$ miles of the Beaufort Sea, extending from the western portion of the planning area just east of Smith Bay, to the Colville River Delta, including the Kogru River. The Coastal Area is important for caribou movement within coastal insect-relief areas, and for preventing contamination of marine waters, loss of important bird habitat, alteration or disturbance of shoreline marshes, and impacts to subsistence resources activities.

2.2.2.7 Colville River Raptor, Passerine, and Moose Area

The Colville River Raptor, Passerine, and Moose Area extends one mile west or northwest of the bluffs of the Colville River, from approximately Ocean Point to the southern end of the Planning Area and 2 miles on either side of the Kogosukruk and Kikiakrorak rivers and tributaries of the Kogosukruk River. The lower two-thirds of the Colville River support the highest concentrations of raptors, passerines, and moose on Alaska's North Slope. More than half of the known peregrine, gyrfalcon, and rough-legged hawk territories along this reach are in the planning area. Overall,

the population of peregrine falcons has increased since its low in 1973, when it was listed as endangered under the ESA. The species has since been de-listed, and population levels should be maintained if the peregrine is to remain off the list. The raptors nest on bluffs adjacent to the river and are sensitive to disturbance. The area is also an important subsistence, cultural, and traditional use area for NSB residents, particularly for those of Nuiqsut.

2.2.2.8 Pik Dunes

The Pik Dunes are located in the extreme southcentral part of the Teshekpuk Lake Special Area. This area was added to the Teshekpuk Lake Special Area in 1999 as a result of the 1998 Northeast IAP/EIS ROD. The dunes complex occupies roughly 15 square miles, with a maximum north/south extent of 5½ miles, and a maximum east/west extent of 5 miles. The Pik Dunes, which form a basin containing five lakes, are part of a larger dune area that has been stabilized and or vegetated for at least several thousand years. The Pik Dunes are unique, because they are still exposed and active. Beyond their geologic and scenic uniqueness, the dunes provide: 1) insect-relief habitat for caribou, 2) habitat for several uncommon plant species, and 3) data critical to understanding major climatic fluctuations over the last 12,000 years.

2.2.2.9 Caribou Movement Corridor Area

The Caribou Movement Corridors consists of two locations within the Teshekpuk Lake Special Area. One is located east of Teshekpuk Lake and encompasses 45,000 acres. The other is located between the northwest shore of Teshekpuk Lake and Smith Bay and encompasses approximately 9,700 acres. Lakes and other natural surface features in these areas result in relatively narrow passages that restrict caribou movement during both the calving and insect-relief seasons.

2.2.2.10 Southern Caribou Calving Area

The Southern Caribou Calving Area is found southeast and southwest of Teshekpuk Lake and is entirely within the Teshekpuk Lake Special Area. This area of approximately 233,000 acres provides important caribou calving, post-calving, and insect-relief habitat.

2.2.2.11 Lease Tracts Area

The Lease Tracts Area is found north of Teshekpuk Lake. This area would be delineated into seven large lease tracts that would range in size from approximately 46,000 to 59,000 acres. This area provides important caribou calving, post-calving, insect-relief habitat, and sensitive goose molting habitat.

2.3 DESCRIPTION OF THE ALTERNATIVES

The alternatives presented in the Supplemental IAP/EIS are nearly identical to those presented in the Northeast NPR-A Final Amended IAP/EIS. The same land would be made available for oil and gas leasing under each of the alternatives as provided for in the Amended IAP/EIS.

Alternative A is the same as Alternative A in the Amended IAP/EIS. There have been some minor changes to Alternative D between the Final Amended IAP/EIS and this Supplement thereto, most of which were reflected in the ROD for the Amended IAP/EIS. There have been some very minor changes in the text of several stipulations and ROPs in Alternatives B, C, and D

for clarification, but only one substantive ROP added to these alternatives. The Supplement adds ROP L-1 to clarify how BLM would regulate summer vehicle tundra travel, an aspect of oil and gas operations that the 1998 IAP/EIS and the Amended IAP/EIS had not addressed.

BLM does not have a preferred alternative at this time. The agency wants to hear from the public before selecting a preferred alternative. The preferred alternative identified in the Final Supplemental IAP/EIS may be one of the alternatives presented in this document, may be created by combining aspects of these four alternatives, or may reflect aspects of one or more alternatives proposed in public comments on this document.

The alternatives presented below differ among themselves in two important areas: 1) the amount of land that would be made available for oil and gas leasing, and 2) the types of lease stipulations and/or ROPs that would be used to protect surface resources (Table 2-1). It should be understood that BLM has discretion to offer for a lease sale all or only a portion of the lands determined in a Record of Decision to be made available, thus making possible phased leasing and development over multiple lease sales. The following sections discuss these elements in more detail for each alternative. In addition, two tables (Table 2-2 and 2-3) found at the end of this chapter are used to compare the protective measures and their effectiveness across alternatives and to describe the likely effects of actions taken under each alternative.

2.3.1 Alternative A – No Action Alternative

Alternative A is the No Action Alternative and is comprised of decisions established in the ROD for the 1998 Northeast IAP/EIS. The decisions described in this alternative constitute the existing management practices of the Northeast NPR-A.

Under this alternative, approximately 87% (4 million acres) of the planning area's approximately 4.6 million acres would continue to be available for oil and gas leasing (Map 2-1) and approximately 825,000 acres available for leasing would continue to prohibit all permanent oil and gas facilities, with in some cases exceptions for essential pipeline and road crossings. Management practices would emphasize prescriptive-based stipulations on surface activities, consultation with local residents, and coordinated scientific studies to protect wildlife habitat, subsistence use areas, and other resources. Table 2-2, found after subsection 2.10, compares and evaluates the effectiveness of the prescriptive-based stipulations developed for this alternative with the performance-based stipulations and ROPs developed for alternatives B, C, and D. All the stipulations under Alternative A are subject to an exception clause (see Appendix D).

2.3.2 Alternative B

Alternative B would make available approximately 95% (4,387,000 acres) of the planning area's approximately 4.6 million acres for oil and gas leasing (Map 2-2), including approximately 387,000 acres that were unavailable in the 1998 ROD. The additional lands made available by Alternative B are within areas of high oil and gas potential in the Northeast Planning Area, and are within the Teshekpuk Lake Special Area. On approximately 977,000 acres available for leasing the alternative would prohibit permanent oil and gas facilities, except pipelines and, in some cases, roads. Management practices would emphasize performance-based stipulations and ROPs on surface activities, consultation with local residents, and coordinated scientific studies to protect wildlife habitat, subsistence use areas, and other resources. In addition, approximately 213,000 acres northeast of Teshekpuk Lake that are currently unavailable for oil and gas leasing would remain unavailable for leasing, to provide for protection of wildlife and subsistence resources.

Performance-based stipulations and ROPs (patterned after those developed for the northwest portion of the National Petroleum Reserve – Alaska) would be used to mitigate the impacts of BLM-authorized activities, provide flexibility to BLM to adapt management decisions to uncertain or changing environmental conditions, and provide more consistent management by BLM across the entire northern portion of NPR-A. The stipulations and ROPs for this alternative are presented in Table 2-2, as are summaries of their relative effectiveness compared to the stipulations and ROPs in the other alternatives.

Additional seasonal and spatial restrictions are applied to provide protection of specific environmentally sensitive areas. These areas are described in **section 2.2.2, *Areas with Additional Protections***, and the restrictions are described in Table 2-2. These stipulations would also apply to the approximately 387,000 acres that are unavailable for leasing under Alternative A, but would be made available under Alternative B. Environmentally sensitive areas and their applicable stipulations are listed below.

- Rivers Area (see Lease Stipulation K-1)
- Deep Water Lakes (see Lease Stipulation K-2)
- Teshekpuk Lake Shoreline (see Stipulation K-3)
- Goose Molting Area (see Lease Stipulation K-4)
- Teshekpuk Lake Caribou Habitat Area (see Lease Stipulation K-5)
- Coastal Area (see Stipulation K-6)
- Colville River Special Area (see Lease Stipulation K-7)
- Pik Dunes (see Lease Stipulation K-8)

2.3.3 Alternative C

Alternative C would make 100% of the planning area's 4.6 million acres available for oil and gas leasing (Map 2-3). On approximately 1,113,000 acres available for leasing the alternative would prohibit permanent oil and gas facilities, except pipelines and, in some cases, roads. It would utilize the same performance-based stipulations and ROPs developed for Alternative B (except for a setback on the Tingmiaksiqvik River; see Stipulation K-1g, which only applies to Alternative B) to mitigate the impacts of energy development and other land uses on resources in the planning area. These protective measures would mitigate the impacts of energy development and other land uses, provide flexibility to BLM to adapt management decisions to uncertain or changing environmental conditions, and provide more consistent management by BLM across the entire northern portion of NPR-A. These restrictions are presented in Table 2-2 and pertain to the same activities and include the same seasonal and spatial restrictions as Alternative B.

2.3.4 Alternative D

Alternative D would make available approximately 95% (approximately 4,389,000 acres) of the planning area's 4.6 million acres for oil and gas leasing (Map 2-4). On approximately 1,451,000 acres available for leasing the alternative would prohibit permanent oil and gas facilities, except pipelines and, in some cases, roads. Management practices would emphasize performance-based stipulations and ROPs on surface activities, consultation with local residents, and coordinated

scientific studies to protect wildlife habitat, subsistence use areas, and other resources. Under Alternative D, Teshekpuk Lake (approximately 211,000 acres) would be indefinitely deferred from leasing. This deferral would preclude exploratory drilling and pipeline construction. Current leases would not be affected by the deferral.

Alternative D makes available approximately 389,000 acres that were unavailable in the 1998 ROD. The additional lands made available by Alternative D are within the area of highest oil and gas potential in the Northeast Planning Area, and are within the Teshekpuk Lake Special Area (TLSA). Several major protective measures have been developed as requirements/standards to protect important resources and subsistence activities in the TLSA:

- Areas in and around identified lakes north of Teshekpuk Lake within the GMA, that are important for molting brant and other sensitive waterfowl would be protected with a restricted surface occupancy lease stipulation (approximately 240,000 acres) (Map 2-4). (Note: The Amended IAP/EIS referred to this and similar restrictions that would prohibit all permanent oil and gas facilities *with the exception of pipelines and in some cases roads* as No Surface Occupancy, or NSO, restrictions. The Supplemental IAP/EIS uses the phrase restricted surface occupancy, or RSO, to refer to the same level of restriction. Readers should examine the wording of specific stipulations or ROPs to clarify what facilities would be prohibited). Lakes and adjacent lands identified as important habitat for molting geese and other waterfowl are included in the RSO area. Because many of these lakes are in very close proximity, the buffer areas around the lakes often overlap resulting in the RSO area depicted on Map 2-4. In addition to providing protection to molting geese and other waterfowl, this restriction would also provide protection for caribou calving and insect-relief habitats. While providing important protections to key resources, this lease stipulation would allow for exploration of the region. Within the RSO area(s), permanent oil and gas facilities would be prohibited, but a pipeline(s) would be allowed on conditions determined during a workshop to be convened to identify the best area for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources and users. Exploration activities would be allowed within the RSO, including seismic acquisition and exploratory drilling. Exploratory drilling would not be allowed within the GMA between June 15 and August 20. Within the GMA, BLM, after conferring with appropriate federal, state, and NSB agencies, would develop a research study of the effects of disturbance on molting brant and other geese that utilize the lakes north of Teshekpuk Lake. The study would be completed prior to any authorization of construction of permanent facilities within the GMA. The study would include at least 3 years of data collection and would focus on 1.) providing baseline data for detection and/or measurement of disturbance, 2.) identifying significant development-related disturbance factors, 3.) evaluating consequences to geese from disturbance with the GMA considering relevant stipulations and ROPs, 4.) identifying additional mitigation measures to protect molting geese that may be considered necessary as a result of the study, including recommendations for appropriate placement of permanent facilities based on the study's identification of development-related disturbance factors. In addition, the study results would be used to identify specific location of facility(s) within the approximately 5,000 acre parcel of land (as depicted on Map 2-5) available within the GMA Lease Tracts F and G. See Lease Stipulations K-4, K-5, and K-11.
- Two Caribou Movement Corridors would receive additional protection. The area extending from the eastern shore of Teshekpuk Lake eastward towards the Kogru Inlet would be protected with a RSO stipulation (approximately 45,000 acres). This area is currently identified as important for caribou movement during the calving and insect-

relief seasons. The area encompasses a relatively narrow passage between Teshekpuk Lake and Kogru Inlet that is inundated with many smaller lakes, and is currently identified as a “bottleneck” to caribou north/south movement. The area adjacent to the northwest corner of Teshekpuk Lake would be protected with a RSO lease stipulation (approximately 9,700 acres). This area is currently identified as important for caribou movement during the calving and insect-relief seasons. Within the RSO areas, permanent oil and gas facilities other than pipelines would be prohibited. Pipelines would be allowed on conditions determined during a workshop to be convened to identify the best area for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources. Exploration activities, such as seismic acquisition and exploratory drilling, would be allowed within these RSO areas during the winter season only. See Lease Stipulation K-9 and Map 2-4.

- The Southern Caribou Calving Area southwest and southeast of Teshekpuk Lake would be protected with a RSO stipulation (approximately 233,000 acres). This area has been identified as important for caribou calving and post-calving, and providing insect relief. Within this RSO area, permanent oil and gas facilities would be prohibited, but pipelines would be allowed on conditions determined during a workshop convened to identify the best area for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources and users. Exploration activities would be allowed within each RSO, such as seismic acquisition and exploratory drilling during the winter season only. See Lease Stipulation K-10 and Map 2-4.
- The area north of Teshekpuk Lake is delineated into seven large lease tracts. These tracts range from 45,900 to 58,000 acres. A maximum limit of 300 acres of permanent surface disturbance resulting from new oil and gas activities is established for each tract. This further reduces the potential impacts of oil and gas development by limiting impacts to a defined amount of surface disturbance. See Lease Stipulation K-11 and Map 2-4.

As with Alternatives B and C, performance-based stipulations and ROPs (patterned after those developed for the northwest portion of the National Petroleum Reserve – Alaska) would be used to mitigate the impacts of BLM-authorized activities, provide flexibility to BLM to adapt management decisions to uncertain or changing environmental conditions, and provide more consistent management by BLM across the entire northern portion of NPR-A. The stipulations and ROPs for this alternative are presented in Table 2-2, as are summaries of their relative effectiveness compared to the stipulations and ROPs in the other alternatives.

Table 2-1. Alternative Summary Comparison Table

Alternative	Lands Available for Use	Protective Measure	Leasing and Occupancy Restrictions
No Action Alternative (Alternative A; 1998 Northeast IAP/EIS ROD)	Approximately 4,000,000 acres (87%) available for leasing	79 prescriptive stipulations as described in the 1998 Northeast NPR-A IAP/EIS ROD and listed in Table 2-2 and Appendix D	Areas north and east of Teshekpuk Lake unavailable for leasing (approximately 600,000 acres) No Surface Activity Restriction (approximately 250,000 acres southwest, south, and southeast of Teshekpuk Lake) Restricted Surface Occupancy near streams and lakes (approximately 825,000 acres)
Alternative B	Approximately 4,387,000 acres (95%) available for leasing	Performance-based stipulations and ROPs as listed in Table 2-2 and Appendix E	Goose molting/caribou habitat use area north of Teshekpuk Lake unavailable for leasing (approximately 213,000 acres) Restricted Surface Occupancy near streams, lakes, and coast (approximately 977,000 acres)
Alternative C	4,600,000 acres (100%) available for leasing (entire Planning Area)	Performance-based stipulations and ROPs (same as Alternative B, except Stipulation K-1g)	All areas available for leasing Restricted Surface Occupancy near streams, lakes, and coast (approximately 1,113,000 acres)
Alternative D	Approximately 4,389,000 acres (95%) available for leasing	Performance-based stipulations and ROPs, similar to those identified for Alternatives B and C, but including 3 additional site specific stipulations. These stipulations and ROPs are listed in Table 2-2 and Appendix F	Teshekpuk Lake (211, 000 acres) lease indefinitely deferred from leasing Restricted Surface Occupancy total 1,451,000 acres <ul style="list-style-type: none"> • 240,000 acres north of Teshekpuk Lake within the Goose Molting Area restricted to no permanent oil and gas development other than pipelines. (No alternative procedures will be approved.) • 288,000 acres within Caribou Movement Corridors and Southern Caribou Calving Areas restricted to no permanent oil and gas development other than pipelines • 7 Lease Tracts north of Teshekpuk Lake; permanent surface disturbance resulting from oil and gas activities other than pipelines is limited to 300 acres within each lease tract • No permanent oil and gas facilities within a ¼ mile of the ordinary high water mark of Teshekpuk Lake

Additional seasonal and spatial restrictions are applied to provide protection of specific environmentally sensitive areas. These areas are described in **section 2.2.2, Areas with Additional Protections**, and the restrictions are described in Table 2-2. Some of these stipulations would apply in part or in whole to the approximately 389,000 acres that are unavailable for leasing under Alternative A, but would be made available under Alternative D. Environmentally sensitive areas and their applicable stipulations are listed below. The last three areas listed are unique to Alternative D.

- Rivers Area (see Lease Stipulation K-1)
- Deep Water Lakes (see Lease Stipulation K-2)
- Teshekpuk Lake Shoreline (see Stipulation K-3)
- Goose Molting Area (see Lease Stipulation K-4)
- Teshekpuk Lake Caribou Habitat Area (see Lease Stipulation K-5)
- Coastal Area (see Stipulation K-6)
- Colville River Special Area (see Lease Stipulation K-7)
- Pik Dunes (see Lease Stipulation K-8)
- Caribou Movement Corridor Area (see Lease Stipulation K-9)
- Southern Caribou Calving Area (see Lease Stipulation K-10)
- Lease Tracts Area (see Lease Stipulation K-11)

2.3.5 Stipulations and Required Operating Procedures

In addition to the land allocation decisions regarding what portions of the planning area would be made available to oil and gas leasing, the alternatives differ in the protective measures that would be imposed on oil and gas activities and non-oil and gas activities. The protective measures in Alternative A are those adopted in the 1998 Northeast NPR-A ROD. Pursuant to the purpose of this IAP/EIS, BLM developed two sets of performance-based protective measures analogous to those developed in the Northwest NPR-A IAP/EIS.

The performance-based protective measures are of two types—stipulations and required operating procedures. Most requirements identified here as stipulations represent a legal “taking” in that they could take from the value of an oil and gas lease. For example, a stipulation that does not allow permanent facilities within a large area could result in a well being located far enough from the lessee’s optimum site for a well that it would prevent an oil reservoir from being fully developed. To legally take such value from a lease, the requirement is attached to the lease. Thus, the lessee knows that the lease being purchased comes with this impediment to full development. As part of a lease contract, lease stipulations are specific to the lessee. All oil and gas activity permits issued to a lessee will comply with the lease stipulations appropriate to the activity under review.

Required Operating Procedures, or ROPs, are requirements to achieve specified objectives through best management practices (referred to in this Supplemental IAP/EIS as requirements/standards) that BLM will impose as necessary through the permitting process. As used in this Supplemental IAP/EIS, they refer both to oil and gas activities and non-oil and gas activities. An oil and gas lease does not in itself authorize any on-the-ground activity. Seismic operations, drilling, pipeline and gravel road and pad construction, etc. require additional land use authorizations. Any applicant requesting such authorization will have to address the required operating procedures either before submitting the application (e.g., subsistence consultation, surveys), as part of the application proposal (i.e., including in the proposal statements that the applicant will meet the objective of the ROP and describe how the applicant intends to achieve that objective), or as a term imposed by BLM in a permit. Requirements that are met prior to submission of the application, as well as procedures, practices, and design

features that are an integral part of a proposal, would not need to be required as a term of a permit. Note that at the permitting stage, BLM's Authorized Officer (AO) would not include those ROPs that, because their geographic or other inapplicability, are not relevant to a specific permit application. Note also that at the permit stage the AO may establish additional requirements that would be warranted to protect the land and resources pursuant to the BLM's responsibility under relevant laws and regulations.

The stipulations and ROPs of all the alternatives are presented in Table 2-2. The table provides the easiest means to compare the stipulations and ROPs among the alternatives. A stand-alone description of the stipulations for Alternative A are provided in Appendix D. Similar stand-alone descriptions of the stipulations and ROPs for Alternatives B and C are provided in Appendix E, and for Alternative D in Appendix F, respectively.

The performance-based stipulations and ROPs in Alternatives B through D differ from the prescriptive-based stipulations of Alternative A in three general ways:

- The stipulations and ROPs in Alternatives B through D do not include actions that already exist in the form of law and regulation. Some stipulations in Alternative A replicate requirements in law and regulation.
- In developing the Amended IAP/EIS and this Supplement thereto, BLM has reexamined the utility and effectiveness of requirements of the 1998 stipulations and analyzed *substantive* changes in the types of protection to be provided in the action alternatives in the performance-based stipulations and ROPS in Alternatives B through D. Examples in the action alternatives include allowing refueling and permanent oil and gas facilities a minimum of 100 feet of non-fish-bearing lakes (instead of requiring that such activities be at least 500 feet away from such lakes as was done in the 1998 Northeast NPR-A ROD), allowing for water withdrawals from lakes less than 7 feet deep with non-sensitive fish (instead of forbidding water withdrawal from all fish-bearing lakes under 7 feet deep), and requiring that aboveground pipelines be elevated 7 feet above the ground at each vertical support member (instead of 5 feet above the ground along its entire length). The action alternatives also analyzed stipulations and ROPs that specifically addressed protections from oil and gas activities for lands that Alternative A would not make available for oil and gas leasing or would have restricted use with no surface activity restrictions.
- A fundamental difference between performance-based and prescriptive protective measures is their *approach* to, and *procedures* for, protecting resources and uses. The prescriptive stipulations require that certain actions be taken (or not taken) by a lessee/permittee to protect resources and uses of the planning area, while the performance stipulations and ROPs require that certain objectives for protecting resources and uses be achieved. For example, Stipulation K-5 is a performance-based stipulation designed to "Minimize disturbance and hindrance of caribou, or alteration of caribou movements through portions of the Teshekpuk Lake Caribou Habitat Area that are essential for all season use, including calving and rearing, insect-relief, and migration." One of its requirements/standards states that major construction would be suspended from May 20 to August 20 unless approved by the AO. To achieve the objective, on the one hand, it may be satisfactory to allow construction in a part of the Teshekpuk Lake Caribou Habitat Area during at least a part of the period if caribou are absent from that portion of the area during a portion of the three-month period. On the other hand, the AO may extend the period for suspended construction if calving or insect relief activities extend beyond the dates provided in the requirement/standard. By focusing on the results or performance to

achieve an objective for a stipulation or ROP, the performance-based protective measures provide BLM's land managers and industry with greater flexibility in how to achieve resource protection objectives and, BLM believes, efficacy in protecting surface resources. There is a high degree of natural variation and inherent complexity associated with the North Slope environment. Performance-based stipulations and ROPs provide BLM with the flexibility to adapt management by tightening or relaxing restrictions on development in order to meet surface protection goals as the agency benefits from emerging information from study and experience.

During scoping for the Amended IAP/EIS, several respondents expressed concern that the protective measures developed for the Northwest IAP/EIS (and, analogously, for Alternatives B, C, and D for the Amended IAP/EIS and this Supplemental thereto) would not be as effective, or provide similar levels of protection, as the stipulations developed for the 1998 Northeast IAP/EIS. It should not be assumed, however, that increased flexibility would result in no, inadequate, or even weakened protection of the resources and uses of the planning area. This is so for several reasons.

First, BLM is required by law to protect surface resources. BLM cannot abrogate its regulatory responsibility to take such action as deemed necessary to mitigate or avoid unnecessary surface damage and to minimize ecological disturbance throughout the National Petroleum Reserve – Alaska, consistent with the requirements of the Naval Petroleum Reserves Production Act, 42 USC § 6501, et seq., and its implementing regulations at 43 CFR 2360 and to take whatever action is required to prevent unnecessary or undue degradation of the public lands under the Federal Land Policy and Management Act, 43 USC § 1732.

Second, as demonstrated by Table 2-2, in some instances the prescriptive stipulations of Alternative A may provide more protection than the performance stipulations of the other alternatives, but in other instances greater protection is provided by the performance stipulations and ROPs. The evaluation in the table is not based upon the prescriptive rather than performance approach and procedures, but on the substantive level of protection incorporated into the requirements/standards versus the prescriptive stipulations. For example, the performance ROP E-7 in the performance-based alternatives is adjudged to provide greater protection to caribou movement than Stipulation 37 in Alternative A because it has a standard for pipeline height of 7 feet at VSMs, while Stipulation 37 only mandates a height of 5 feet, not because of the approach and procedures associated with performance-based protective measures. Similarly, while Alternatives A and C do not require any setback of permanent oil and gas facilities from the Tingmiaksiqvik River, Alternatives B and D would require protection for the resources of that river at a standard equal to that of prohibiting permanent oil and gas surface facilities, except essential transportation crossings, within a ½ mile of the stream. Consequently, Alternatives B and D would be more effective than Alternatives A and C in protecting water quality and other resources associated with the Tingmiaksiqvik River if oil development were to occur in the general area of that stream.

Third, the performance-based stipulations and ROPs will provide the BLM enhanced ability to mitigate impacts when a lessee or would-be permittee applies to BLM for approval of on-the-ground activity. On-the-ground oil and gas activity, including, but not limited to, seismic surveys, exploratory drilling, ice or gravel road and pad construction, and facility construction and abandonment require BLM's approval, as does non-oil and gas activity. Prior to issuing such an approval, BLM would conduct appropriate additional NEPA. The prescriptive stipulations *require that certain actions be taken (or not taken)* by a lessee/permittee to protect resources and uses of

the planning area. These prescriptions remain unchanging in the leases, regardless of whether new science or updated technology suggests that better protection can be achieved through other means. In contrast, the performance stipulations and ROPs *require that certain protections of resources and uses be achieved*. Requirements and standards listed with the performance-based stipulations and ROPs (see Table 2-2) represent BLM's current understanding of how lessees/permittees would achieve the objectives of the stipulation or ROP. Performance-based stipulations and ROPs, however, allow BLM at the permitting stage to better utilize 1.) the latest and best understanding of the North Slope environment and possible impacts to it, 2.) the latest advances in technology and techniques relevant to North Slope oil and gas activities, and 3.) the more site- and project-specific information that is available at the permit stage. If BLM finds through monitoring or as a result of other studies that a prescribed action is not effective or if new technology or techniques have been shown to lessen impacts, the prescriptive stipulations of Alternative A do not give the agency the ability to require the lessee/permittee to undertake other measures instead of those required by the stipulations. Under Alternatives B through D if, after experience or additional study, BLM concludes that a requirement/standard is not achieving or is unlikely to achieve a the protective objective when applied to a specific future on-the-ground action or would not do so as well as the use of recently proven technology or techniques, BLM could, under the terms of the performance-based stipulation or ROP, impose other restrictions to meet the objective.

The procedures that would allow a deviation from the requirements of the stipulations of Alternative A differ from those that would allow a deviation from the requirements/standards associated with the resource/use objectives of the other alternatives. Under all alternatives, a deviation could occur if the Northeast NPR-A Supplemental IAP/EIS ROD was itself modified. If this were a significant change it would require that BLM conduct a public NEPA process in which such a modification would be subject to public review and comment. Under Alternative A, deviations from the stipulations could also be allowed through the exception process. Exceptions could be granted if 1.) the objectives of the stipulation could be fully satisfied by the alternative process proposed by the lessee/permittee *and* 2.) to comply with the stipulation would be either “technically not feasible,” or “economically prohibitive,” or if the alternative offered by the lessee/permittee is “environmentally preferable.” Under the other alternatives, a lessee/permittee may propose a deviation from the requirements/standards of stipulations and ROPs and BLM could grant such a deviation if it determines that the *alternative procedure* proposed by the applicant would meet the objective. (Note: The Amended IAP/EIS included the exception clause for Alternatives B and D. It has been deleted in the Supplemental IAP/EIS for those alternatives because it would be redundant. Under the three action alternatives, an applicant for a BLM authorization could obtain a deviation from requirements/standards if the BLM determines that the alternative procedure will meet the objective(s) of the stipulation or ROP. If the applicant's proposed deviation does not meet the objective through this process, it is not going to meet the first prong of the exception clause listed above, i.e., that the “objectives of the stipulations . . . be fully satisfied by the alternative process.”) For more information on the exception process in Alternative A, see Appendix D; for a similar discussion on how deviations from the requirements/standards can be achieved under the other alternatives, see Appendix E (for Alternatives B and C) and Appendix F (for Alternative D).

Fundamental to the concept of performance-based management is learning and adaptation to new information. The stipulations and ROPs currently represent BLM's best understanding of the protective measures necessary to achieve the desired outcome. However, our knowledge is not perfect, individual stipulations and ROPs may be adequate, inadequate, or overly restrictive. Indeed, a single stipulation or ROP may be all of those things depending on where it is applied. By accepting this uncertainty, defining the stipulations and ROPs as desired outcomes

(performance), and incorporating a mechanism to adapt to new information as exploration and development proceed and our understanding of the components of the arctic ecosystem and its response to exploration and development, BLM strives to provide the necessary protection to surface resources while minimizing restrictions to oil and gas development.

While not the “Adaptive Management” of Walters (Walters, 1986), this approach can be seen as a form of adaptive management as limited by the nature of oil and gas exploration and development on the North Slope. In most other types of land management where adaptive management is proposed, the amount, quality, quantity, and location of the resource to be managed is known. Management actions can be treated as experiments to further knowledge. Scale (temporal and spatial), magnitude and variation can all be manipulated with relatively limited cost compared to conventional management actions. Oil and gas, however, are not visible, not randomly distributed, and difficult and expensive to extract. Manipulation of the basic components (e.g. pads, pad location, and the types of structures and activities) cannot be done easily and certainly not inexpensively; quite the opposite in fact. Construction of a pad in a location necessary to test a hypothesis where there is not oil or in a sub-optimal location is a financial impracticability. The adaptive management envisioned here incorporates learning through time and flexibility.

BLM expects that development will occur on a linear trend. As noted above, BLM may choose a phased approach whereby only some of the lands designated as available are offered for lease in a given lease sale. Moreover, oil and gas are expected to be discovered over many years and not all development will be constructed at once. This could result in enhanced protection of surface resources by giving BLM the opportunity to learn from the previous exploratory drilling and development activities, to modify the standards and requirements of the stipulations and ROPs and to adopt additional permit requirements. Further, this approach is an incentive to industry to develop and implement new technology and operating procedures; adapting their management practices to achieve the goals of the stipulations and ROPs while allowing them to optimize the placement of infrastructure and their operations.

BLM will ultimately be responsible for determining how the objectives of the stipulations and ROPs will be achieved. In undertaking this responsibility, BLM may confer with other federal, state, and local agencies with expertise and/or authority to manage certain resources or activities. Indeed, a number of stipulations and ROPs specifically state that BLM’s Authorized Officer (AO) will consult with other agencies. It should be emphasized, however, that any statement in a stipulation or ROP that BLM will discuss a specific matter with another agency does not in any way diminish BLM’s authority and responsibility to make a land management decision.

2.4 MANAGEMENT ACTIONS COMMON TO ALL ALTERNATIVES

Before considering the various management strategies put forward for consideration in these alternatives, readers should be aware that some management actions will occur under all alternatives. These actions include fulfilling BLM’s responsibility to convey land to individual Alaskan Natives and to Native corporations under the Native Allotment Act and the Alaska Native Claims Settlement Act (ANCSA), respectively. In cooperation with other federal, state, and NSB resource management agencies, BLM also will conduct studies, such as the inventory and monitoring of resource populations and conditions under all alternatives. These studies will assess the health of biological resources, the location and significance of other resources, and the effectiveness of management practices in protecting these resources. The scope of these studies

will reflect the level of impacting actions allowed and the protective measures imposed under the plan adopted through this Supplemental IAP/EIS.

BLM is required to consult with the USFWS and NOAA Fisheries Service on any action that could impact threatened and endangered species in the planning area. The bowhead whale, spectacled eider, and Steller's eider may occur near areas that could be affected by oil and gas development in the planning area. The polar bear has been proposed to be listed as threatened. BLM is required to Conference on any activity that could jeopardize the continued existence of polar bear or adversely modify or destroy proposed critical habitat. The bowhead whale is listed as an endangered species under the ESA, while the two eider species are listed as threatened.

Appendix J contains a list of species that BLM has identified as species of special status in Alaska. Most of the species listed in Appendix J are not found in the NPR-A. Only those species likely to be found in or near the planning area are discussed in the Supplemental IAP/EIS. The BLM will manage all permitted activities, pursuant to BLM Manual Section 6840 (*Special Status Species Management*), to ensure that actions requiring authorization or approval by BLM are consistent with the conservation needs of special status species and do not contribute to the need to "list" any of them under the provisions of the ESA of 1973, as amended.

2.5 ALTERNATIVES CONSIDERED BUT ELIMINATED FROM DETAILED ANALYSIS

2.5.1 Making Less Land Available for Leasing

Neither the Amendment nor this Supplement thereto considers alternatives that would make less land available for oil and gas leasing than the 1998 Northeast NPR-A IAP/EIS.

As described in **section 1.2**, the underlying purpose of the IAP/EIS is to evaluate additional lands to be made available for leasing in order to address the Nation's need for additional energy sources. In 2001, the President created the National Energy Policy Development Group (NEPDG), consisting of the Vice-President and other key cabinet members. The primary task of the group was to "develop a national energy policy designed to help the private sector, and, as necessary and appropriate, state and local governments, and promote dependable, affordable, and environmentally sound production and distribution of energy for the future" (NEPDG 2001). In May 2001, the NEPDG released the National Energy Policy report, a comprehensive list of findings and key recommendations that form the basis of the President's National Energy Policy. Specifically, the policy directs the Secretary of the Interior to "consider additional environmentally responsible oil and gas development, based on sound science and the best available technology, through further lease sales in the National Petroleum Reserve – Alaska," and states that "such consideration should include areas not currently leased within the northeast corner of the National Petroleum Reserve – Alaska." The Amended IAP/EIS and this Supplement thereto are part of the process by which the Secretary carries out that policy direction. Accordingly, considering not leasing lands that were available for leasing in earlier lease sales would be contrary to the purpose and need of the IAP/EIS, and is therefore outside the scope of the IAP/EIS.

2.5.2 Analyzing a Different Mix of Prescriptive and Performance Measures and Land Allocation Decisions

Alternative A considers prescriptive stipulations and makes no new lands available for oil and gas leasing. Alternatives B, C, and D consider somewhat different versions of performance stipulations and ROPs and each would make a different set of additional lands available for oil and gas leasing. BLM considered analyzing one or more other alternatives that would mix performance stipulations with making no more lands available for leasing or making more lands available for leasing, but with prescriptive stipulations. BLM has rejected such additional alternatives.

These additional alternatives would be substantially the same as other alternatives already analyzed in this Supplemental IAP/EIS and would result in environmental impacts that are substantially the same as those presented in this document. An alternative that made the same amount of land available for leasing as Alternative A, but proposed use of performance-based stipulations and ROPs, and alternatives that made the same amount of land available for leasing as Alternatives B, C, and D, but proposed prescriptive stipulations, would still make the same amount of land available for leasing and the same amount of oil and gas susceptible to discovery and development, with generally the same resultant environmental consequences. Nor would such a mix of decisions on lands to lease and the type of stipulation and ROP package result in notably different impacts because neither package of protective measures would provide clearly superior environmental benefits. As demonstrated in the analysis in Chapter 4 and more specifically in Table 2-2, in a great many cases the prescriptive stipulations of Alternative A and the corresponding performance-based stipulations and ROPs in the other alternatives have been adjudged to offer the same or essentially the same protection for resources and uses. In some cases this is the result of using identical or similar wording in the stipulations of Alternative A and the requirements/standards to meet the objectives of the performance-based stipulations of Alternatives B, C, and D. For example, the requirement/standard for ROP A-1 for Alternatives B, C, and D and Stipulation 6 of Alternative A both read, “Areas of operation shall be left clean of all debris.” In other cases, while the wording of the prescriptive and performance-based measures is different, their effectiveness in protecting resources and uses is not. Also, as discussed in Section 2.3.5, while the substantive requirements of some prescriptive stipulations in Alternative A are more protective than those included in the requirements/standards of the performance-based stipulations and ROPs in the other alternatives, there also are some performance-based stipulations that offer more protection than the prescriptive stipulations. On the balance, the protective effectiveness of the substantive requirements of performance-based stipulations and ROPs is roughly the same as that of the prescriptive stipulations. Therefore, analyzing an alternative that would make the same lands available for oil and gas leasing as Alternative A, but propose performance-based protective measures, or analyzing an alternative that makes the same lands available of leasing as Alternative B, C, or D, but proposes prescriptive stipulations would not add substantively to the impact analysis.

2.5.3 Considering Wilderness Designation

Wilderness designation within the planning area is not being considered in any alternative for two reasons. First, the underlying purpose of the IAP/EIS relates to oil and gas leasing, exploration, and development, including making more lands available for leasing. (See **section 1.2**). Because creating new wilderness designations is inconsistent with this management objective, alternatives proposing such an action are outside the scope of the Amended IAP/EIS and this Supplement thereto. Second, wilderness designation is not being considered in

authorized activities in the planning area, and would be developed in consultation with the communities. See Appendix G for examples of elements that may be made part of the plan taken from development experiences elsewhere in the world.

