Executive Summary

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The Bureau of Land Management (BLM) initiated the Northwest National Petroleum Reserve-Alaska (NPR-A) Integrated Activity Plan/Environmental Impact Statement (IAP/EIS) to determine the appropriate multiple-use management of 8.8 million acres of the Northwest NPR-A Planning Area (Maps 1 and 2), consistent with existing statutory direction for its management. To carry out its management responsibilities, BLM is addressing three major questions: 1) What lands should BLM offer for oil and gas leasing? 2) What measures should be developed to protect important surface resources from oil and gas activities? 3) Consistent with the existing statutory direction for the area, what non-oil and gas land allocations should be considered for this portion of the NPR-A?

In addressing these questions BLM has focused on the relationships of the current and potential uses of the Planning Area and the impact of those uses on the natural and human resources of the area. In this analysis, specific resources, uses, and portions of the Planning Area have stood out as especially significant.

The potential use of the area for oil development is a major focus of the IAP/EIS. In examining this potential, BLM fulfills a mandate of the President's energy policy directing 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." Congress, in a 1981 amendment to the Naval Petroleum Reserves Production Act (NPRPA), 42 U.S.C. 6508, also has directed that BLM undertake oil and gas leasing in NPR-A. North Slope oil production, centered at the massive Prudhoe Bay field, is key to the Nation's domestic oil supply. The North Slope contributes about 16 percent of America's current domestic production. The oil industry has discovered and developed other fields both to the east and west of Prudhoe. However, production is in decline from these older fields, and there are indications that the Planning Area contains oil and natural resources that could help to stem the decline.

Subsistence activities--particularly hunting and fishing--in the Planning Area are exceedingly important to local residents, including the Inupiat, the Native people of Alaska's North Slope. Subsistence hunting and fishing are central to the Inupiat's ages-old cultural system. Moreover, subsistence activities provide critical sustenance for people who live off Alaska's road network at an extreme distance from the Nation's food-distribution system.

Several portions of the Planning Area have particularly important surface values. A small portion in the extreme northeast part of the Planning Area falls into the Teshekpuk Lake Special Area designated to protect waterbird habitat; while the northern bank of the Colville River in the southernmost part of the Planning Area is in the Colville River Special Area, designated to protect raptors (Map 34). The Kasegaluk Lagoon at the far northwestern corner of the Planning Area offers primitive recreation experiences, including kayak and small boat paddling along the coast (Map 12). It is also rich in wildlife, including migratory birds and marine mammals, and features marine tidal flats that are rare on the North Slope. The hills and mountains in the southern part of the Planning Area have special values (Map 12). They are particularly remote, being far from any of the region's communities, and relatively rarely visited even by subsistence hunters. They also feature good hiking and scenic vistas in high terrain.

The IAP/EIS analyzes a No Action Alternative and four other alternative future management plans for making part or all of the Northwest NPR-A Planning Area available for oil and gas leasing in a manner consistent with responsible protection of other important surface resources. These alternatives present a range of actions that BLM could take to manage the surface and subsurface resources of the Planning Area consistent with statutory direction for management of the NPR-A.

Each alternative includes management actions and mitigation measures that broadly apply to the Northwest NPR-A Planning Area. For example, there are stipulations and required operating procedures addressing: waste prevention, handling and disposal; spill prevention and response; potential impacts of oil and gas exploration and development; protection of subsistence activities; and protection of vegetation, raptors, and cultural and paleontological resources. This IAP/EIS also includes land allocation decisions, stipulations, and required operating procedures specific to portions of the Planning Area. These address, in part, some of the issues raised by the public during scoping as well as decisions BLM is directed to address in land management plans.

The alternatives presented in the IAP/EIS are consistent with the purposes of the NPR-A's governing statutes. Each alternative offers a different balance between serving the "total energy needs of the nation," a goal of the NPRPA, and protecting surface resources from "unnecessary and undue degradation," as required by the Federal Land Policy and Management Act. See Table II-01 for a comparison of these alternatives. The alternatives are:

No Action Alternative (Map 14): The No Action Alternative reflects current BLM management of the Planning Area. Under this alternative, no new oil and gas leasing would occur; no new designations such as Special Areas, Wilderness Study Areas (WSA's), or Wild and Scenic Rivers (WSR's) would be proposed; no Visual Resource Management (VRM) classifications or off-highway vehicle (OHV) designations would be made; and no rights-of-way would be designated. Existing Special Area designations for the Colville River and Teshekpuk Lake areas and stipulations BLM applies when permitting activities would continue to provide protection of surface resources. Stipulations listed in the 1983 oil and gas leasing EIS for the NPR-A apply under this No Action Alternative. However, because oil and gas leasing do not occur under this alternative, the stipulations from that EIS have no practical effect. Under this alternative, two options exist with regard to seismic activity. Winter seismic activity could occur throughout the Planning Area (the existing management situation), or seismic activity could be prohibited.

Alternative A (Map 15): Alternative A would make all BLM-administered lands in the Planning Area available to oil and gas leasing. Under this alternative, no Special Areas, WSA's, or WSR's would be proposed. The entire Planning Area would be open to OHV use. Protective measures include applying stipulations and required operating procedures, and identifying VRM areas. Additional protection may be introduced following future additional NEPA analysis on specific activities.

Alternative B (Map 16): Alternative B would make 96 percent of the BLM-administered lands in the Planning Area (100 percent of the area of high oil and gas potential) available for oil and gas leasing. The proposed Kasegaluk Lagoon Special Area would not be available for leasing and no permanent oil and gas facilities would be allowed either in the Special Areas or--excepting two right-of-way sites to be designated near Peard Bay and near Wainwright--in and along the shores of the coastal bays and lagoons (including islands in those bays and lagoons). Stipulations and required operating procedures would place further restrictions on the placement of permanent oil and gas facilities around lakes, rivers, and important habitat. Offshore exploratory drilling would only be allowed in winter in the coastal bays and lagoons from bottom-fast ice pads, natural islands, and human-made gravel islands. Protective measures include applying the relevant stipulations and required operating procedures, recommending the Kasegaluk Lagoon area be designated a Special Area, limiting OHV and airboat use, and identifying VRM areas. Additional protection may be introduced following future additional NEPA analysis on specific activities.

Alternative C (Map 19): Alternative C would make 47 percent of the BLM-administered lands in the Planning Area available for oil and gas leasing while emphasizing protection of specific surface resources through barring

lease sales, excluding permanent oil and gas facilities, or both in potentially sensitive areas. The areas withheld from leasing include all those identified as being of concern for: estuarine areas, deep-water lakes, and river and riparian habitat; caribou movement and migration areas; raptors, loons, brant, and eiders; cultural and paleontological resources; subsistence cabins and camps; three proposed WSA's; and one proposed wild river and 21 proposed scenic river corridors. In addition, under this alternative Federal subsurface oil and gas below surface lands owned or selected by the Alaska Native Claims Settlement Act village corporations for Atqasuk, Barrow, and Wainwright would not be available for leasing.

Under Alternative C, less than 2 percent of the area considered as being high in oil and gas resource potential would be made available for leasing. Except for two right-of-way sites to be designated on previously disturbed ground near Peard Bay and near Wainwright, permanent oil and gas facilities would be prohibited in and along the shore of major bays and lagoons (including islands in those bays and lagoons). Other protective measures include applying relevant stipulations and required operating procedures, limiting OHV and airboat use, and identifying VRM areas. If Congress were to adopt recommendations in this alternative to create three Wilderness Areas, then all oil- and gas-related structures, as well as ice roads, ice pads, and seismic studies would be prohibited in those areas. Prior to such Congressional designation, however, ice roads, ice pads, and seismic studies could be allowed in the proposed WSA's, if they could be shown not to impact permanent wilderness values. Additional protection may be introduced following future site-specific NEPA analysis.

Preferred Alternative (Map 18): Under the Preferred Alternative, all BLM-administered lands (including Federally-owned subsurface) within the Northwest NPR-A Planning Area would be made available for oil and gas leasing; however, leasing would be deferred for 10 years on approximately 1,570,000 acres (about 17%) of the the Planning Area in the vicinity of Wainwright. Within the lease deferral area, the Preferred Alternative would recommend the establishment of a 102,000-acre Kasegaluk Lagoon Special Area. Kasegaluk Lagoon would be subject to a no-permanent-surface-occupancy stipulation. Outside the deferral area, additional no-surface-occupancy stipulations would be imposed along coastal areas, key rivers, and deep-water lakes. In total, these restrictions would apply to approximately 1,515,000 acres, which is about 16 percent of the total Planning Area. Stipulations and required operating procedures would provide clearly defined setbacks, restrictions (including seasonal restrictions), and guidance for all aspects of oil and gas and related operations. These measures would provide protection for important natural resources including water quality, vegetation, wetlands, fish and wildlife habitat (including habitat for Threatened and Endangered species), cultural and paleontological resources, subsistence uses and access, and scenic and recreation values. The Preferred Alternative would identify special study areas for brant and caribou. Multi-year surveys would also be required on a Planning Area-wide basis to prevent the taking of spectacled and Steller's eiders, which are listed as threatened species under the Endangered Species Act, and for yellow-billed loons. Special restrictions would also be imposed on oil and gas development activities within the Colville River Special Area to minimize loss of raptor foraging habitat. Other protective measures would include designating the Planning Area as Limited for recreational use of off-highway vehicles (OHV's) and identifying Visual Resource Management (VRM) areas (Map 23). No WSA's or WSR's would be proposed under this alternative.

Summary of Impacts: The analyses of the potential impacts of the alternatives (Sections IV.B, IV.C, IV.D, IV.E and Section V.B) are based on the scenarios presented in the IAP/EIS (Section IV.A). The analyses assume that the stipulations and required operating procedures Section II.C.6) are adopted under each alternative. The stipulations and required operating procedures for the Preferred Alternative are presented in Section II.C.6. The analyses also assume compliance with existing laws and regulations. The impacts of the first sale and multiple sales under each alternative are summarized below. A comparison of the overall impacts of the first sale and multiple sales under each alternative is presented in Appendix 2.

Impacts are of several general types. Except for overland moves, non-oil and gas activities generally occur during the summer. They commonly are of short duration (e.g., aircraft flight or landing) and localized (e.g., a research or recreational camp). These are unlikely to have more than a short-term and localized impact.

Seismic activities, overland moves, and exploratory drilling, all occur during the winter when the ground is frozen and snow-covered and many species have migrated out of the area. These activities can briefly impact the species that remain through the winter. Their effects can linger into the following summer and longer in the form of varied impacts to vegetation and soils, ranging from the compression of standing-dead vegetation to crushed tussocks and dead or broken shrubs.

The fall and winter harvest seasons are times when subsistence resources are available well beyond the coastal areas and rivers that are accessible during the summer. Winter allows access to an expanded harvest area for ungulates and furbearers, which could potentially lead to greater frequency of industry/hunter contact and consequent disruption of harvest activities. Winter also is a time when wildlife are exposed to natural environmental stresses--limited forage, severe cold, high winds, and compacted snow cover. The effects produced by seismic surveying activities on subsistence resources already under environmental stresses (as well as on the harvest of these resources) may be more pronounced during winter.

The greatest impacts are associated with oil and gas development. Placement of gravel drilling pads, roads, airstrips, staging areas, and docks and the activities that take place on them, as well as construction of oil and gas pipelines, will permanently disturb or destroy soil and vegetation; impound and disturb water; disturb, displace, or kill fish and wildlife; risk disturbing or destroying paleontological and cultural (archaeological and historic) resources; and potentially adversely affect subsistence (by affecting species or impeding user access) and recreation. The impacts from developing and using these facilities vary among resources. Because the land likely to be disturbed is a very small percentage of the 8.8 million surface acres BLM manages in the Planning Area, impacts to soil, vegetation, water, and paleontological and cultural resources will almost certainly be negligible to minor. Impacts to fish and wildlife and subsistence and recreation extend beyond the immediate vicinity of the disturbed ground and, depending on location and protective measures, can be out of proportion with a development's small footprint. If a development leads to a crude-oil or refined-fuel spill, particularly one that extends beyond a pad, impacts could be more severe.

Alternative A will have the greatest impact primarily because it would likely lead to the most seismic surveys, exploratory drilling, and development. Impacts in most instances would be minor. The footprint would be unlikely to destroy more than 1,500 acres of soil or vegetation. Individual fish, mammals, and birds would probably die or be displaced, but it is likely that few or no populations would be measurably affected. Impacts to subsistence and recreation generally would not exceed minor levels. Three potential occurrences could increase the level of impact to some resources under Alternative A. One is oil field development in the caribou insect-relief area. Development in this area could interfere with caribou movements and have adverse reproductive consequences. This in turn could adversely impact subsistence hunters and those dependent on them. Secondly, an oil spill could also increase impacts above minor if it occurred in or entered a river delta or nearshore area occupied by waterbirds. If development activities were to have effects on a rare or vulnerable species, moderate or severe impacts could result. Certain vulnerable bird species (those with declining or with small or sensitive populations, including the threatened spectacled eider) could be moderately impacted if development occurred where a species was concentrated. Rare plants could be impacted severely if development overlapped the area in which such plants exist.

Alternative B would have slightly less impact than Alternative A.

Alternative C would have a significantly reduced impact primarily because development is considered unlikely under this alternative. If development did occur, however, impacts for some species would still be significantly reduced from that anticipated under Alternatives A and B. Areas that would not be available for oil and gas leasing include important bird habitat and much of the caribou insect-relief area.

The Preferred Alternative would have less impact than either Alternative A or Alternative B. Although all BLM-administered lands would be made available for leasing as under Alternative A and the level of projected

activities would be comparable to that under Alternative B, the stipulations and ROP's under the Preferred Alternative would provide greater protection to resources of concern.

Impacts from the No Action Alternative would generally be negligible to minor, temporary, and localized.

The cumulative analysis (Section IV.F.8) discusses the effects that past, present, and reasonably foreseeable future actions might have on important resources in the Planning Area and the surrounding area. In addition to the potential effects of actions in the Northwest NPR-A Planning Area, the cumulative analysis includes the potential effects of activities elsewhere that may affect the important resources of the Northwest NPR-A and surrounding areas. The conclusions of the cumulative analyses are summarized below.

Cumulative impacts to soils, paleontological resources, water resources, water quality, air quality, freshwater and marine fish, wild and scenic river values, and visual resources are expected to be minimal, short-term, and or localized. Long causeways with inadequate breeches could have measurable, long-term impacts on hydrologic conditions; no such causeways are projected for any of the alternatives. Global climate change could alter the composition of vegetation species, increasing deciduous shrubs and decreasing sedges and grasses. Activities in the Northwest NPR-A are not expected to contribute significantly to greenhouse gas emissions. Opportunities for primitive recreation will continue to be reduced by oil and gas activities on the North Slope. Oil and gas activities will continue to impact visual resources of the North Slope with long-term impacts related to the long-term presence of production pads, support facilities, roads, and pipelines. Over the next 20 to 30 years, the onshore and offshore oil industry in and near Prudhoe Bay is expected to decline with a parallel decline in the economic indicators within the North Slope region.

Normal oil and gas activities are expected to cause the loss of small numbers of seaducks through disturbance effects on survival and productivity, and collisions with structures. However, cumulative effects of North Slope oil industry activities (primarily mortality in the unlikely event of a large oil spill) could be substantial for loon species, long-tailed ducks, and king and common eiders. Any substantial loss of long-tailed ducks or king or common eiders would represent a significant effect.

Routine oil and gas activities may result in small losses or declines in productivity of spectacled or Steller's eiders, but are not likely to cause a significant adverse population effect. However, cumulative effects, particularly any substantial losses resulting from an oil spill, could represent a significant effect, which would prevent the populations' recovery from threatened status.

North Slope oil and gas development could result in a long-term displacement and/or functional loss of habitat for Central Arctic herd (CAH), Teshekpuk Lake herd (TLH), and Western Arctic herd (WAH) of caribou. Oil development in the Prudhoe Bay-Kuparuk area may be a cause of an observed shift in CAH calving distribution away from its calving range near the oil fields. Calving by TLH caribou may be reduced near the pipeline corridors, a potential long-term (several-generation) effect on the distribution of the TLH caribou. The No Action Alternative and Alternative C would not allow development in the TLH insect-relief habitat. The alteration of tundra habitat in the Prudhoe Bay area has not had any apparent effect on the distribution and abundance of other terrestrial mammals, with the possible exception of arctic foxes, which have apparently increased in numbers near the oil fields.

Access to subsistence-hunting areas and subsistence resources, and the use of subsistence resources would change if oil development reduces the availability of subsistence resources or alters their distribution patterns. The communities of Point Lay, Wainwright, Barrow, Atqasuk, and Nuiqsut would be most affected. Caribou could become unavailable, undesirable for use, or experience long-term population and productivity effects for a period longer than 5 years. These effects could chronically disrupt sociocultural systems in the communities that are reliant on caribou for subsistence, which would be a significant adverse effect. Effects would be expected to disrupt community activities and traditional practices for harvesting, sharing, and processing subsistence

resources, but not displace sociocultural institutions, social organization, or sociocultural systems. Disproportionate, high adverse effects to the subsistence communities of the North Slope are expected as a result of cumulative impacts from oil and gas activities.

Table II-01
Land Management Designations:
Potential Wilderness/Special Areas and Wild and Scenic River

Issue/Action	No Action	Alternative A	Alternative B	Alternative C	Preferred Alternative
Potential Wilderness Study Area (WSA) or Special Area Designation	No WSA or Special Area designations proposed	No WSA or Special Area designations proposed	Kasegaluk Lagoon area proposed for Special Area designation	Kasegaluk Lagoon, Foothills, and Mountain areas proposed for WSA designation	Kasegaluk Lagoon area proposed for Special Area designation
Wild and Scenic Rivers (WSR)	No WSR's recommended	No WSR's recommended	No WSR's recommended	Colville River recommended for wild WSR designation; 21 streams recommended for scenic WSR designation: Alataktok, Alaktak, Avak, Avalik, Chipp, Inaru, Ivisaruk, Kaolak, Ketik, Kigalik, Kuk, Kungok, Meade, Nokotlek, Ongorakvik, Oumalik, Titaluk, Topagoruk, and Tunalik, Usuktuk Rivers, and Maybe Creek	No WSR's recommended

Note:
Portions of the existing Teshekpuk Lake and Colville River Special Areas are in the Planning Area. Their designations are not altered in any alternative.

WSA = Wilderness Study Area.

WSR = Wild and Scenic Rivers.

Table II-01
Land Management Designations (continued)
Visual Resource Management

Issue/Action	No Action	Alternative A	Alternative B	Alternative C	Preferred Alternative
Visual Resource Management (VRM) Designations (See Maps 21-24 for depictions of VRM units for Alternatives A through C)	None	For an area up to ½ mile from rivers and estuarine areas: VRM II: Colville River VRM III: estuarine and 21 rivers* VRM IV: rest of Planning Area	For an area up to 1 mile from rivers and estuarine areas: VRM II: Avak, Colville, Nokotkek, Ongoravik, and Tunalik Rivers, estuarine area, and Kasegaluk Lagoon Special Area VRM III: 17 Rivers* VRM III-IV: rest of Planning Area	For an area up to 5 miles from rivers and estuarine areas: VRM I: Colville River; and the 3 proposed wilderness areas VRM II: other WSR corridors and estuarine area VRM III: rest of Planning Area	For an area up to 3 miles from rivers and estuarine areas: VRM I: Colville River VRM III: estuarine and 21 rivers* VRM IV: rest of Planning Area

Notes:
Visual Resource Management classes are described in Appendix 3. The extent of VRM objective classes from the rivers and estuarine areas would be less than the above distances where land features limit the viewshed.

VRM = Visual Resource Management.

*Rivers are those recommended for scenic WSR status under Alternative C but not recommended for scenic status under Alternative B.

Table II-01
Land Management Designations (continued)
Travel Management

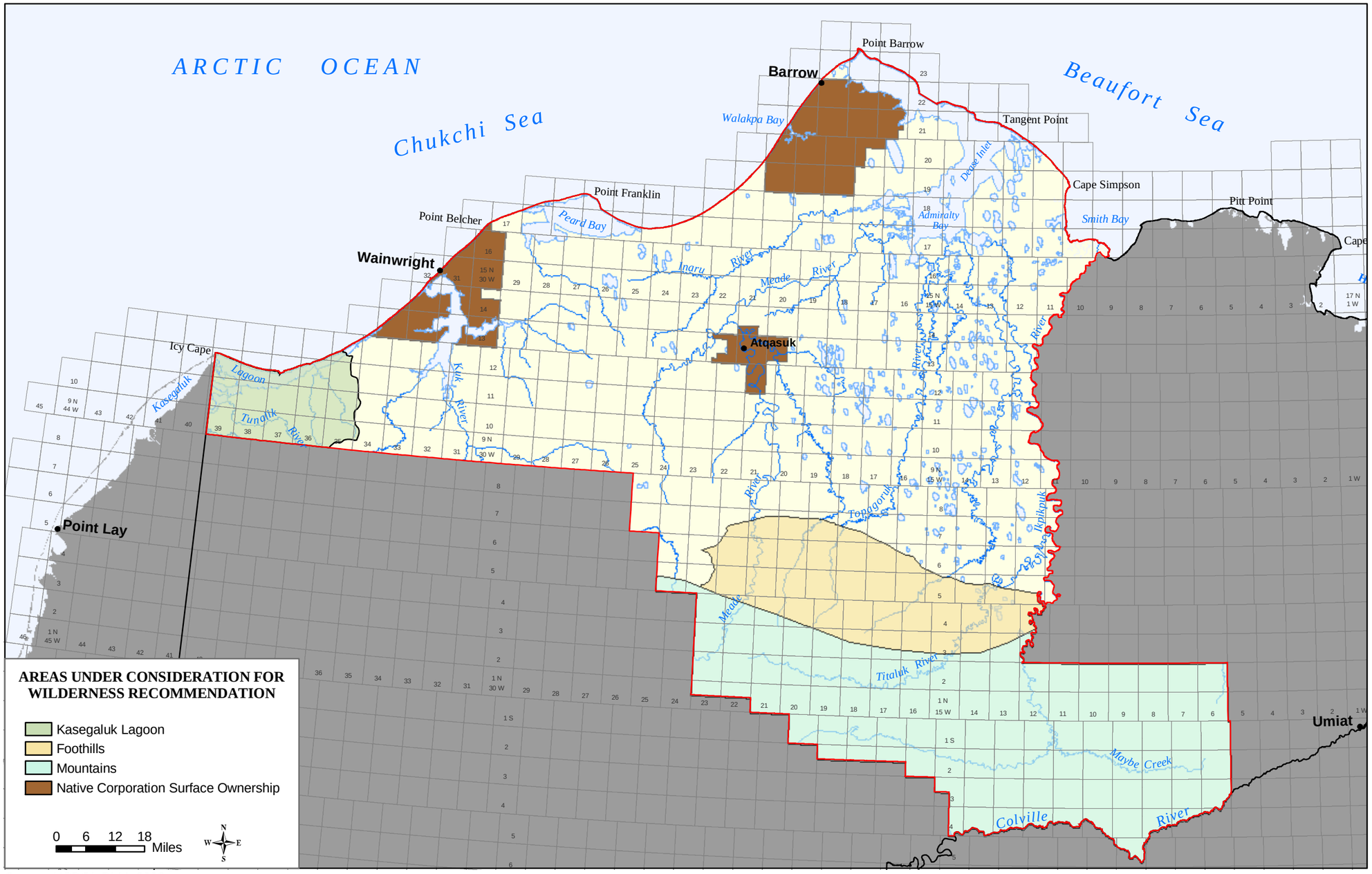
Issue/Action	No Action	Alternative A	Alternative B	Alternative C	Preferred Alternative
1. Off Highway Vehicle (OHV) Designations	The Planning Area would remain Undesignated.	Designated Open to all OHV use throughout the Planning Area.	Designated Limited: a. winter use by snowmachines and other low-ground-pressure vehicles; and b. summer use of OHV's with ground pressure ≤ 2.2 psi on designated trails only (none in the Kasegaluk Lagoon Special Area).	Designated Limited: a. winter use by snowmachines and other low-ground-pressure vehicles (closed to summer use); and b. no summer recreational use of motorized vehicles.	Designated Limited: a. winter use by snowmachines and other low-ground-pressure vehicles; and b. no summer recreational use of motorized vehicles.
2. Subsistence and Authorized Uses	No restrictions on subsistence use; specific authorizations may stipulate use.	No restrictions on subsistence use; specific authorizations may stipulate use.	Airboat use in summer would be limited to streams, lakes, and estuaries that are seasonally accessible by motorboats; airboat use would be prohibited in seasonally flooded tundra and shallow waters with vegetation adjacent to streams, lakes, and estuaries. Specific authorizations may further stipulate use of airboats and OHV's.	Airboat use in summer would be limited to streams, lakes, and estuaries that are seasonally accessible by motorboats; airboat use would be prohibited in seasonally flooded tundra and shallow waters with wetland vegetation adjacent to streams, lakes, and estuaries. Specific authorizations may further stipulate use of airboats and OHV's.	Airboat use in summer would be limited to streams, lakes, and estuaries that are seasonally accessible by motorboats; airboat use would be prohibited in seasonally flooded tundra and shallow waters with wetland vegetation adjacent to streams, lakes, and estuaries. Specific authorizations may further stipulate use of airboats and OHV's.

Note:
With the exception of airboats, the above restrictions do not apply to boats.
OHV = Off Highway Vehicle(s)

Table II-01
Land Management Designations (continued)
Lands Available for Oil and Gas Leasing; Fire Management

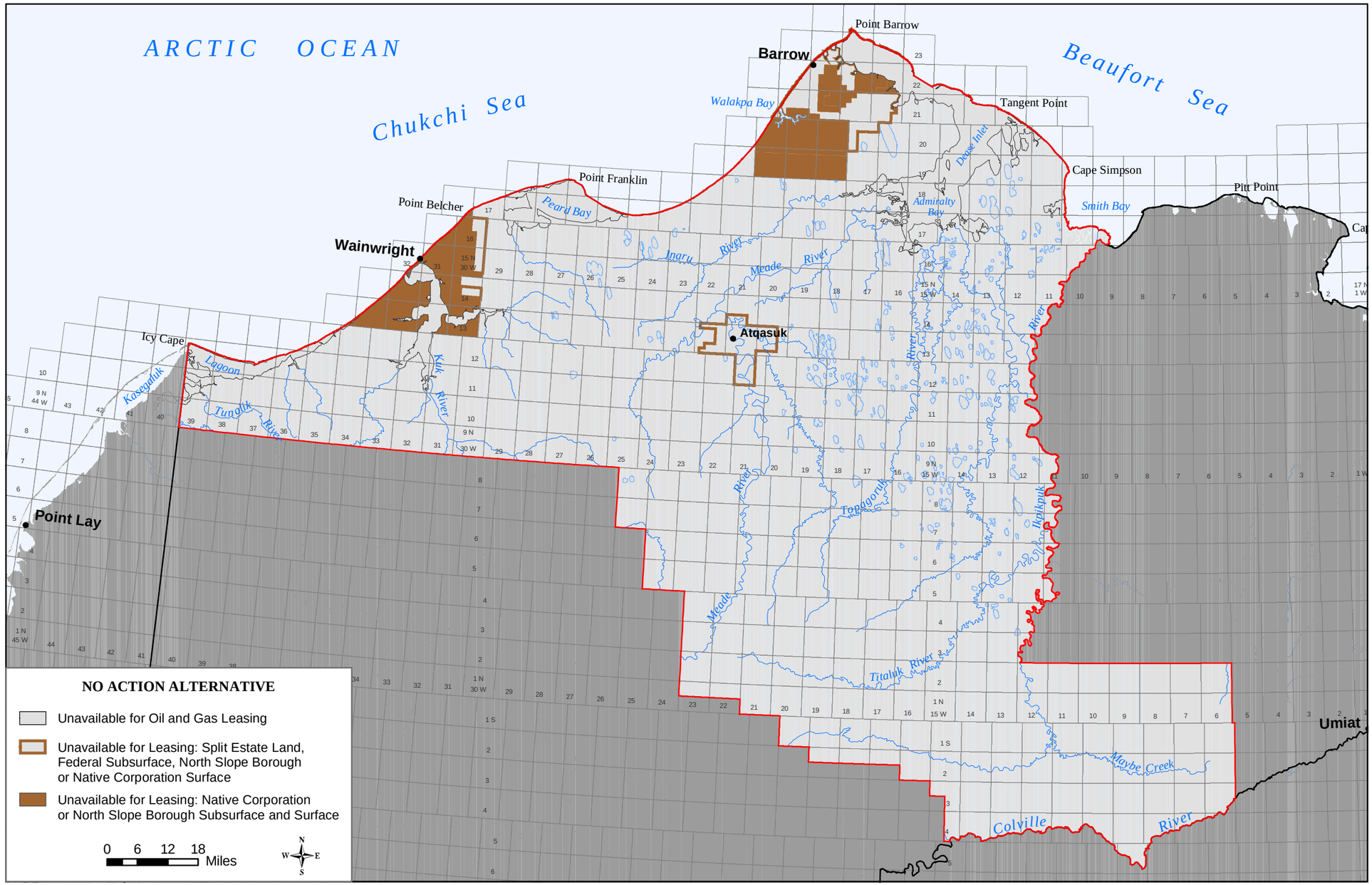
Issue/Action	No Action	Alternative A	Alternative B	Alternative C	Preferred Alternative
Lands Available for Oil &Gas (O&G) Leasing	None	All federal oil and gas resources in the Planning Area: 100% of BLM subsurface; 100% of high oil and gas potential BLM subsurface.	All federal oil and gas resources in the Planning Area except the Kasegaluk Lagoon Special Area: 96% of BLM subsurface; 100% of high oil and gas potential BLM subsurface.	All federal oil and gas resources in the Planning Area, except in areas associated with important surface resources or under non-federal surface lands: 47% of BLM subsurface <2% of high oil and gas potential BLM subsurface.	All federal oil and gas resources in the Planning Area: 100% of BLM subsurface; 100% of high oil and gas potential BLM subsurface. Leasing would be deferred for 10 years on the 17% of lands that are located in the western part of the Planning Area.
Fire Management (See Appendix 6 for Fire Management Constraints)	None	No constraints. BLM may use management-ignited fires to improve vegetation conditions for specific resources.	No constraints. BLM may use management-ignited fires to improve vegetation conditions for specific resources.	No constraints. BLM may use management-ignited fires to improve vegetation conditions for specific resources.	No constraints. BLM may use management-ignited fires to improve vegetation conditions for specific resources.

Note:
O&G = Oil and Gas



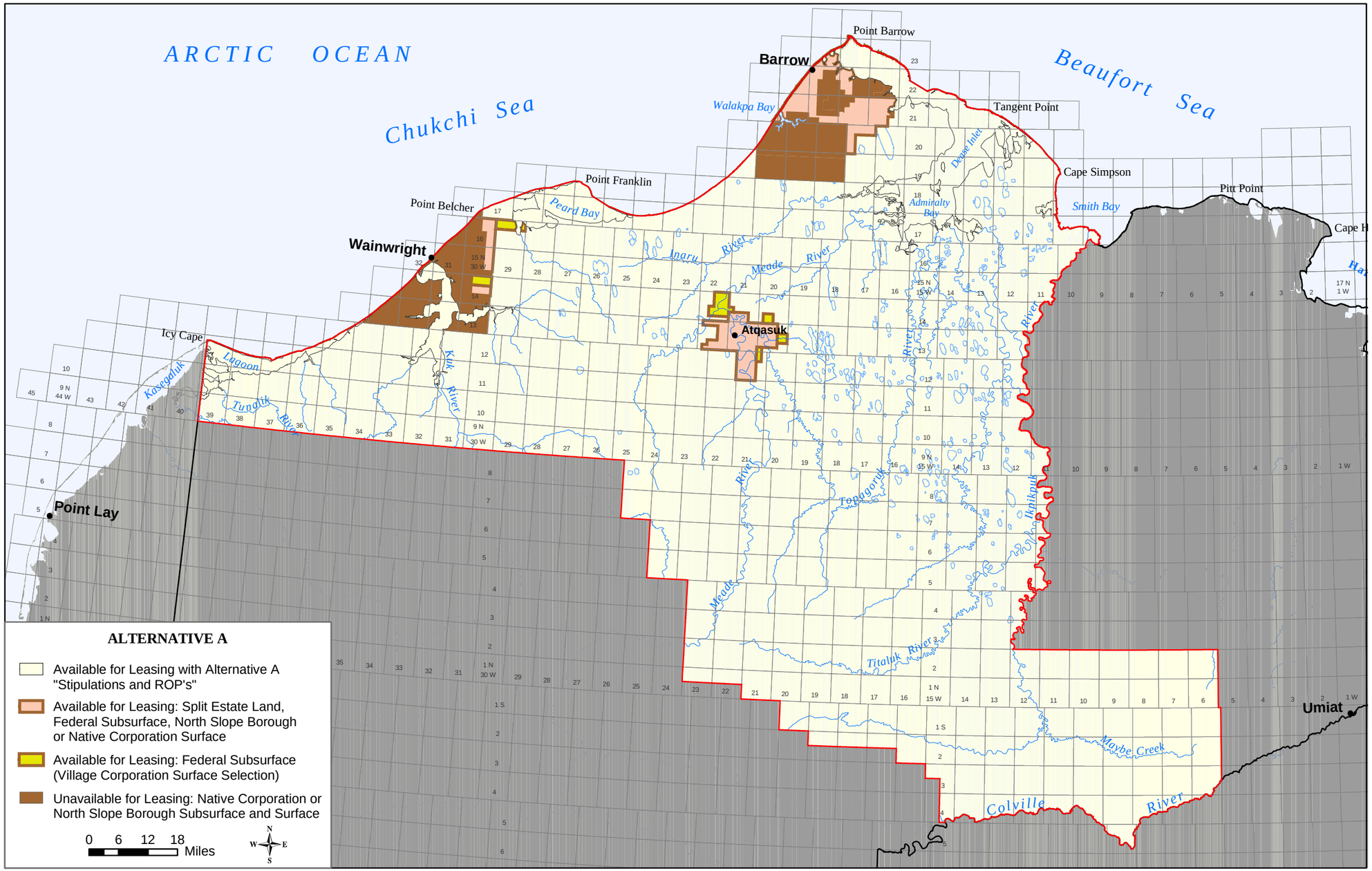
Source: USDOI, BLM, 2002

Map 12. NW NPR-A Areas Under Consideration for Wilderness Recommendation: Mountains, Foothills, and Kasegaluk Lagoon



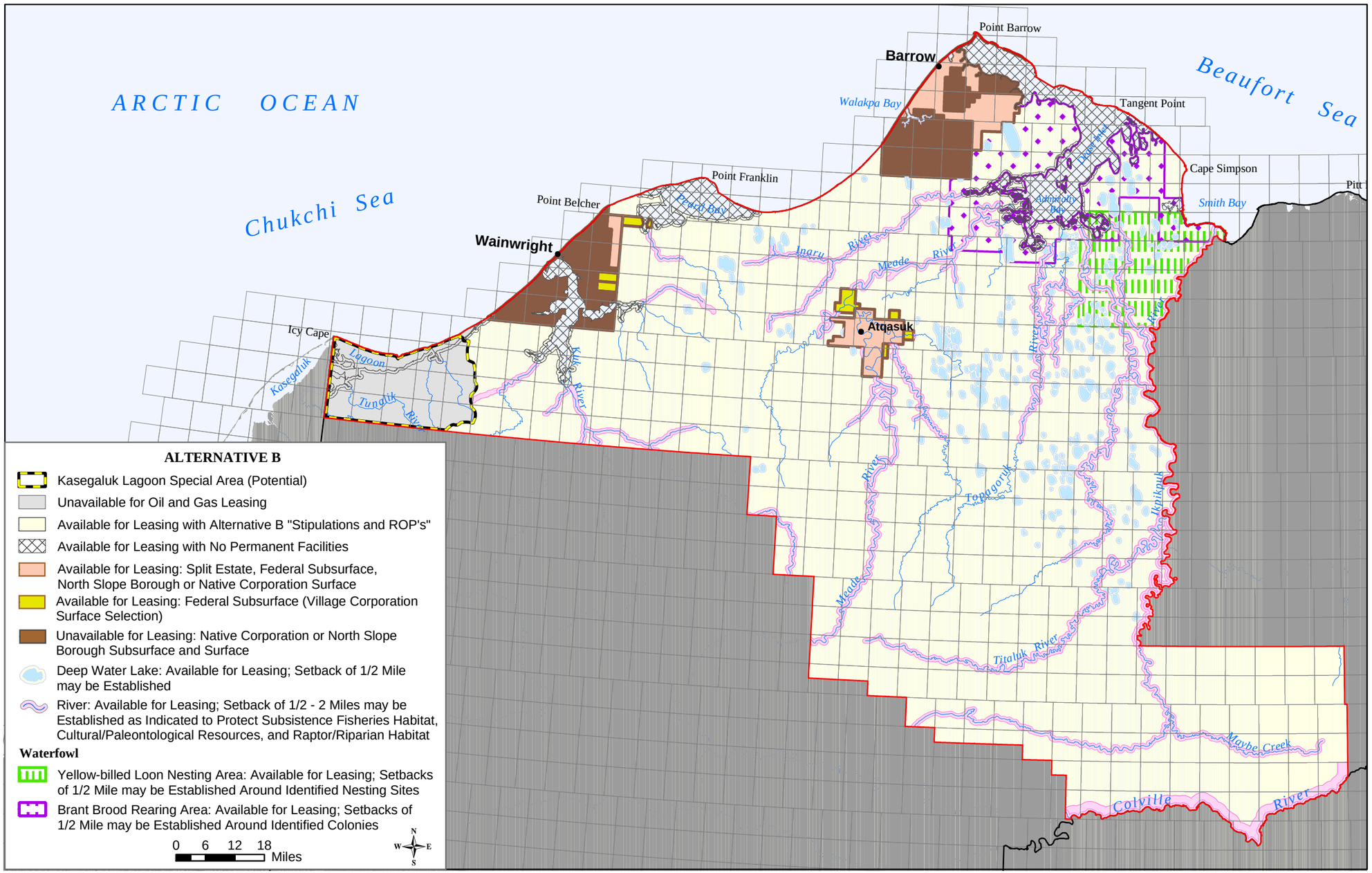
Source: USDOI, BLM, 2002

Map 14. NW NPR-A No Action Alternative



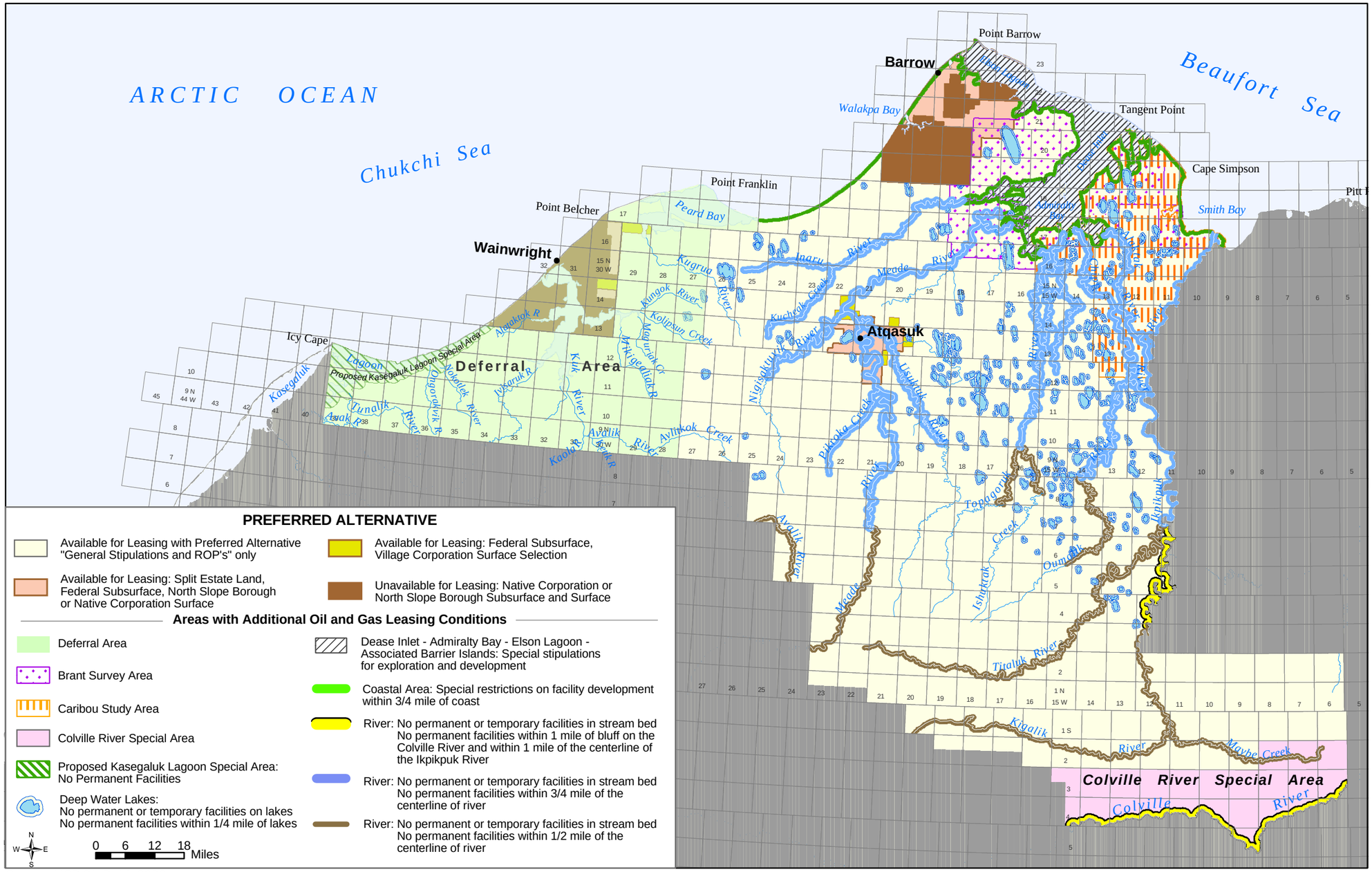
Source: USDOI, BLM, 2002

Map 15. NW NPR-A Alternative A: Areas Available for Oil and Gas Leasing



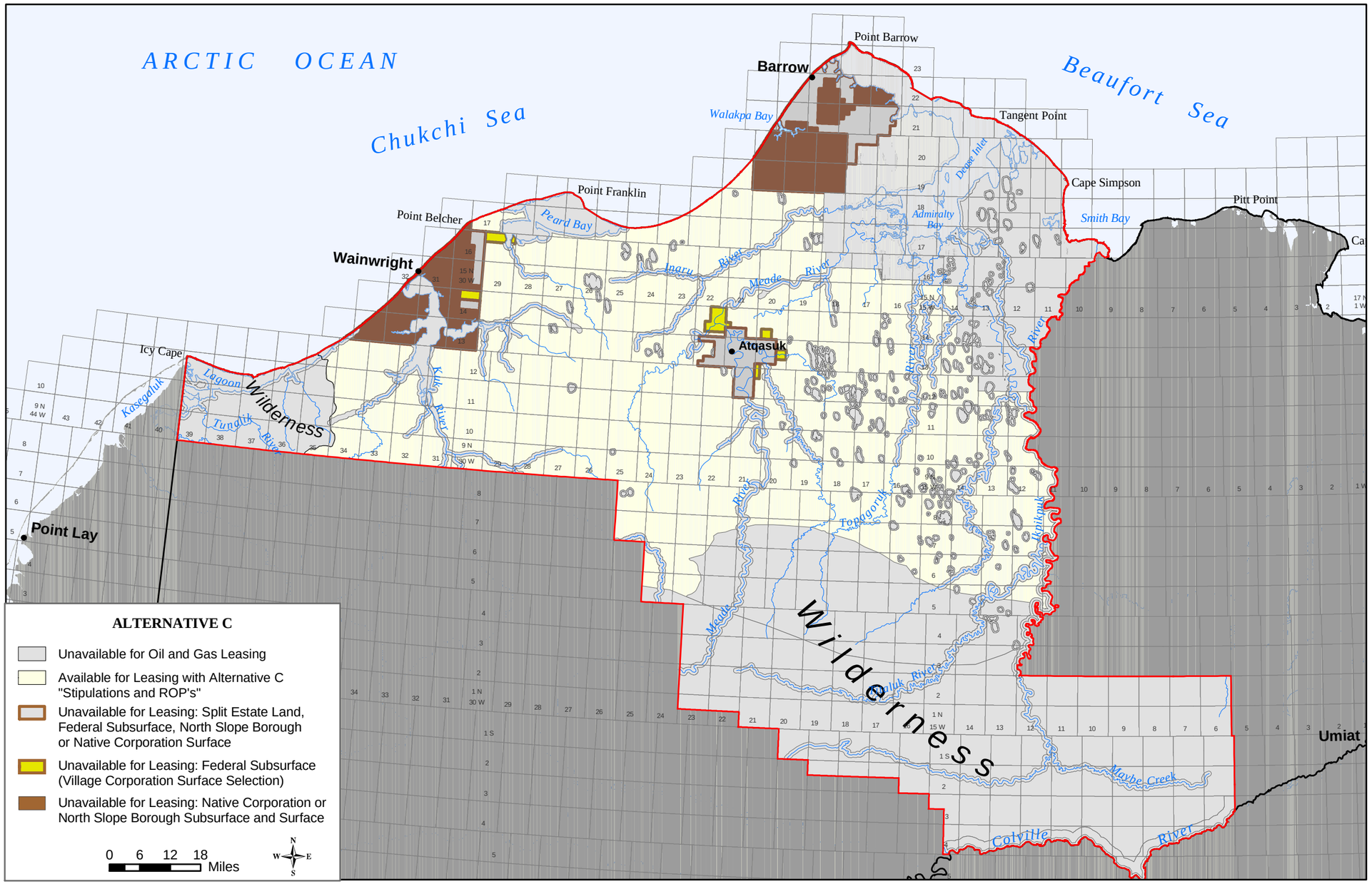
Source: USDOI, BLM, 2002

Map 16. NW NPR-A Alternative B: Areas Available for Oil and Gas Leasing



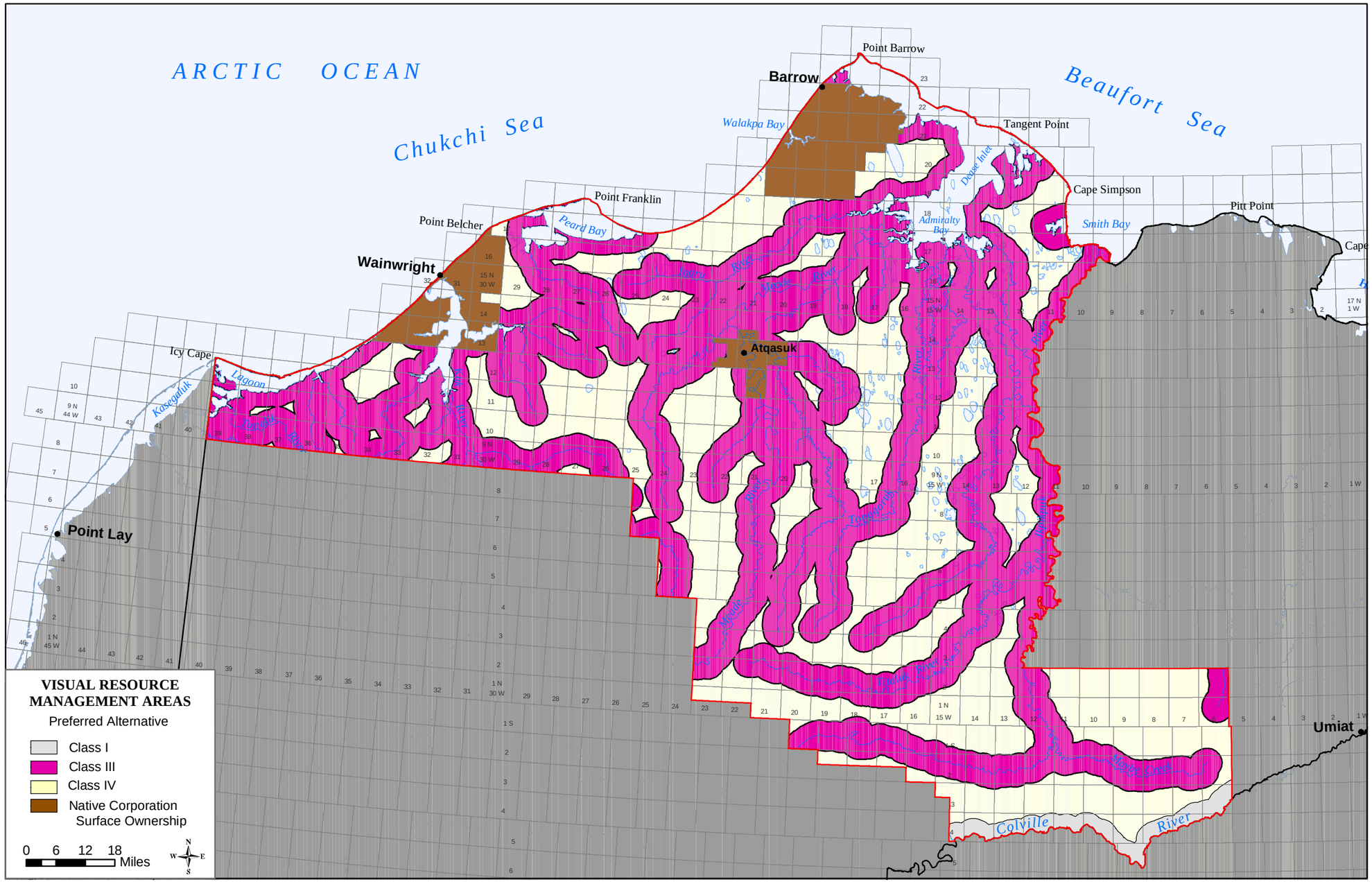
Source: USDOI, BLM, 2003

Map 18. NW NPR-A Preferred Alternative



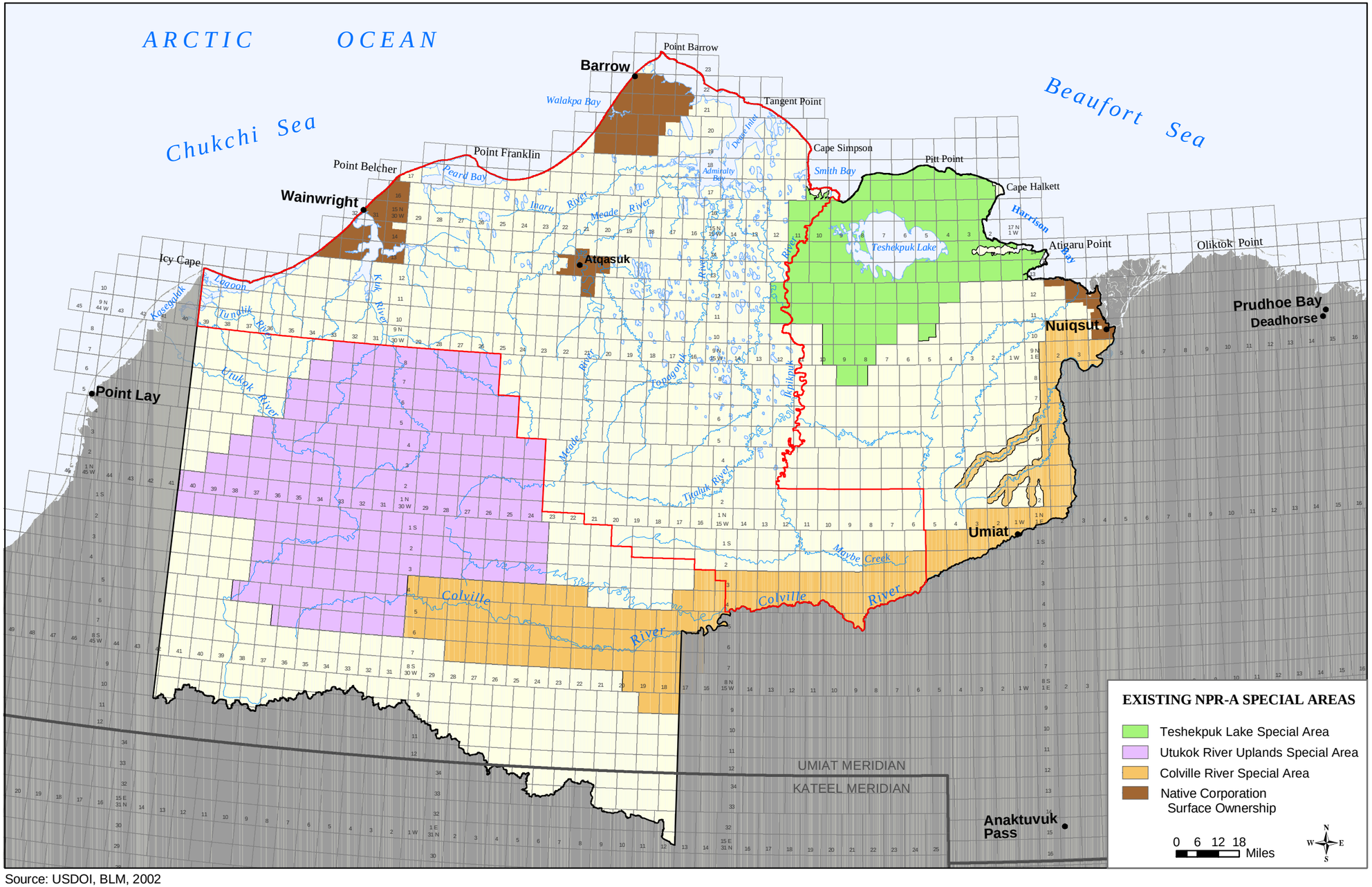
Source: USDOI, BLM, 2002

Map 19. NW NPR-A Alternative C: Areas Available for Oil and Gas Leasing



Source: USDOI, BLM, 2002

Map 23. NW NPR-A Preferred Alternative Visual Resource Management Areas and Class Designations



Source: USDOI, BLM, 2002

Map 34. NPR-A Designated Special Areas