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Habitat Conservation Strategy for the National Petroleum Reserve - Alaska

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1. INTRODUCTION

The National Petroleum Reserve – Alaska (NPRA) is one of the last and largest intact landscapes remaining in the US, as well as the single largest federal land management unit in the nation. Accounting for roughly one-third of the entire North Slope, the 22.1 million acre NPRA hosts a great diversity of arctic habitats vital to migratory birds, two of Alaska's largest caribou herds, multiple predator species, and marine mammals. While officially designated a petroleum reserve, Congress has also long-recognized the importance of protecting special areas and important surface values within the NPRA. In 1976, Congress transferred management of NPRA from the Navy to the Department of the Interior and expressly recognized that significant subsistence, recreational, wildlife, historical, and scenic values exist within the NPRA that warrant protection. Congress accordingly provided the Secretary of the Interior broad authority to establish conditions, restrictions, and prohibitions as the Secretary deems necessary or appropriate to mitigate reasonably foreseeable and significantly adverse effects on the surface resources of the Reserve.

Audubon Alaska is not opposed to oil and gas development in the NPRA but believes that such activities should be conducted in a balanced manner that also identifies and protects exceptional, high-value surface resources. Today's spatial tools and increasing biological information allow us to study and plan for large landscapes in ways not possible in past decades. Much of Alaska's North Slope and the NPRA are places where we still have the opportunity to plan resource development starting from a clean slate, using the best available technology and conservation tools. This proactive approach allows policymakers to balance conservation and responsible resource development.

Audubon Alaska, founded in 1977, has been involved in conservation of Alaska's Arctic for over 30 years, working to promote the conservation of outstanding natural lands and wildlife habitats in the region. In 2002, Audubon Alaska published *Alaska's Western Arctic: A Summary and Synthesis of Resources* (Schoen and Senner, eds.), documenting key areas of biological importance in the NPRA. That report and the associated atlas of maps brought together a diverse set of biological and spatial information, highlighting important habitat areas for nesting and molting birds, the Western Arctic and Teshekpuk caribou herds, large mammals such as wolves, grizzly bears, and wolverines, and coastal marine mammals including polar bear, beluga whales, walruses, and ice seals. That biological information was integrated with information on oil, gas, and coal resources to identify areas of greatest conservation concern.

In 2003, a map was produced that summarized Audubon Alaska's Habitat Conservation Strategy based on the information synthesized in the 2002 report.

With the great increase in spatial data in the last decade and our improved understanding of the biological significance of the NPRA, Audubon Alaska updated the atlas of maps with more recent available data. In addition, more current information is now available regarding oil and gas leasing within the NPRA as a result of multiple lease sales as well as a recently updated assessment of future hydrocarbon resources within the NPRA (USGS 2010). Together, this information has been used to inform and update the Habitat Conservation Strategy. As described below, the updated strategy identifies especially significant high-value wildlife habitat areas which warrant recognition and protection by means of various kinds of habitat conservation measures (i.e., no leasing, no surface occupancy, and special stipulations).

1.1 Special Areas & Areas with Outstanding Biological Values

The attached map depicts existing Bureau of Land Management (BLM) designated Special Areas established under the authority of the Naval Petroleum Reserves Production Act (NPRPA) of 1976, as amended. The four designated Special Areas are:

- Kasegaluk Lagoon Special Area
- Utukok River Uplands Special Area
- Colville River Special Area
- Teshekpuk Lake Special Area

Also shown are other areas of outstanding biological value. These include:

- Dease Inlet & Meade River
- Southern Ikpikpuk River
- Peard Bay
- DeLong Mountains & Arctic Foothills

1.2 Proposed Restrictions

The patterned Proposed Restrictions map layer outlines areas where restrictions are proposed to adequately protect significant habitat values. The proposed restrictions include: 1) no lease, 2) no surface occupancy, and 3) special stipulations as described in more detail below.

No Lease. These areas should remain undeveloped in perpetuity. Leases should not be offered here.

No Surface Occupancy. These areas should not be developed at the surface; however leases may be offered if energy resources can be extracted without disturbing surface values.

Special Stipulations. Special lease stipulations should be applied in areas with outstanding biological values (e.g., high densities of nesting, foraging, or staging migratory birds) in order to prevent or minimize adverse impacts. Examples could include clustering of pads, elevation/burial of pipelines, the use of directional drilling, operating restrictions, designation of no-fly areas, and no-development buffers surrounding deepwater lakes or other key water features. Stipulations should be developed by the BLM in close consultation with the U.S. Fish and Wildlife Service, the North Slope Borough, and the Alaska Department of Fish and Game.

2. BIOLOGICAL VALUES & RECOMMENDED DEVELOPMENT RESTRICTIONS

This section describes the exceptional biological values that warrant conservation through the restrictions proposed. Information is first summarized for each existing designated Special Area and subsequently for other areas identified as having outstanding biological value.

A special note about the conservation measures proposed to protect high-value caribou habitats of the Western Arctic Herd (WAH) and the Teshekpuk Caribou Herd (TCH) is warranted. Consistent with the recommendation of the Western Arctic Caribou Herd Working Group (WACHWG) and the scoping comments submitted by the North Slope Borough (NSB), Audubon Alaska recommends that there should be no further oil and gas leasing within the calving grounds (90% kernel analysis) and insect relief areas (75% kernel analysis) of the WAH or TCH (WACHWG 2010; BLM 2010).

It is noted that some portions of these identified high-priority caribou habitats overlap tracts that have previously been offered and are subject to valid active leases which we do not contest (e.g., within the TCH insect relief habitat west of the Ikpikpuk and on the far eastern edge of the NPRA west of the Colville River Delta). In these areas, existing leases may eventually lead to infrastructure development and result in displacement of caribou (BLM 2008), making conservation of the remaining high-value habitat all the more significant. Alternatively, existing leases in these overlap areas may be relinquished or expire, in which case the BLM should withold these tracts from future lease offerings.

2.1 Designated Special Areas

2.1.1 Kasegaluk Lagoon Special Area

Kasegaluk Lagoon is a highly productive shallow coastal lagoon and barrier island system spanning 125 miles of the Chukchi Sea coast. Approximately 40 miles of the lagoon are within the NPRA, between Icy Cape and Wainwright. This is a very important area for

coastal marine mammals and nesting, staging, and migrating waterbirds. The coastal area along the Chukchi Sea from Icy Cape to Point Franklin, including Kasegaluk Lagoon, is valuable to the community of Wainwright as a subsistence harvest area for marine mammals and birds (BLM 2003).

The BLM has long recognized the exceptional ecological qualities in the vicinity of Kasegaluk Lagoon. In the 2004 Record of Decision (ROD) for the Northwest NPRA Integrated Activity Plan/Environmental Impact Statement (IAP/EIS), the BLM established the Kasegaluk Lagoon Special Area primarily because of high values for marine mammals while noting that the area is "a unique ecosystem for the arctic coast". The 2004 ROD also deferred further leasing throughout this area (i.e., along the entire length of coast from the western border of the NPRA to Peard Bay) for ten years.

Recommendation: To protect the unique combination of biological resources in this area, the BLM should designate the Kasegaluk Lagoon Special Area as a no lease area as well as maintain the existing deferral of leasing on adjacent lands, as established in 2004, for another ten years.

The proposed restrictions would protect the following biological resources and values:

- **Critical "no disturbance zone" denning and feeding habitat for the threatened polar bear** (Kalxdorff 1997; USFWS 2009; Smith 2010). Coastal denning areas are expected to be of increasing importance due to reduced availability and quality of pack ice denning habitat (Fischbach et al. 2007). Barrier island critical habitat contains features essential for the conservation of the species, including denning, refuge from human disturbances, access to maternal dens and feeding habitat, and travel along the coast (USFWS 2010).
- **Important habitat for hauled out walruses** (NOAA 1988; Robards et al. 2007). In recent years, walrus haul outs at Icy Cape and Point Lay have increased substantially—a trend that will likely continue as late summer sea ice recedes earlier and further north due to climate warming (Joling 2009; Burke 2010). When hauled out, walruses are highly sensitive to human disturbance, including aircraft or boat traffic (Garlich-Miller 2010); a one-mile buffer of walrus haul out areas from Icy Cape to Point Franklin, and around the coast of Peard Bay was recommended by Joel Garlich-Miller of the USFWS (pers. comm. January 2011).
- **A significant concentration of molting and calving beluga whales** (Frost et al. 1993; NOAA 2002; Suydam and ADFG 2004). Kasegaluk Lagoon and the Kuk River estuary "are important seasonal summer habitats of beluga whales" (BLM 2003). Belugas are sensitive to human disturbance; airborne and waterborne noise may influence their distribution (Frost and Lowry 1990) and drive them from important habitats. Subsistence hunters have reported concerns that if the first returning belugas are disturbed as they move along the coast in the spring, succeeding groups of whales may not come within hunting range (Huntington and Myrim 1996; BLM 2003)

- **A highly concentrated spotted seal haul out area** (Frost et al. 1993; Lowry et al. 1998; NOAA 2002; Smith 2010). Of 14 known spotted seal haul outs in Western Alaska and Eastern Russia, 4 are at Kasegaluk Lagoon (Lowry et al. 1998). Kasegaluk Lagoon haul outs are used from mid-July through early September by over 1,000 spotted seals on many days (Frost et al. 1993). Spotted seals are considered the most wary of seals, exhibiting high sensitivity to aircraft within 1.25 miles, and are also sensitive to human disturbances at their haul outs (Quakenbush 1988; Frost et al. 1992; Frost et al. 1993).
- **A globally significant Important Bird Area**, established for having the highest diversity and abundance of birds of any lagoon system in Arctic Alaska (Audubon Alaska 2002).

The area described above provides important habitat for a number of other wildlife species of concern, including:

- A migration and staging corridor likely used by the entire breeding population of King Eiders in Western North America (Oppel et al. 2009). King Eiders are a depressed species on Audubon Alaska's WatchList (Kirchhoff 2010).
- A nesting colony of approximately 500 Common Eiders (USFWS 2008), which is a declining species on Audubon Alaska's 2010 WatchList.
- A migration area for as many as half of the Pacific Brant population, which visits Kasegaluk during fall migration (Johnson 1993). Brant is identified as a vulnerable WatchList species.
- A potential Western Hemisphere Shorebird Reserve Network (WHSRN) site based on high numbers (~10,000s) of Dunlin and Red Phalarope in spring, summer, and autumn (Alaska Shorebird Group 2008).
- A variety of shorebirds staging in autumn along the coast and barrier islands in concentrated groups (Taylor et al. 2010).
- High-density waterbird nesting habitat (USFWS 1992-2008) for:
  - Threatened Spectacled Eiders.
  - Multiple WatchList and other species, including: Pacific Brant, Long-tailed Ducks, Northern Pintails, Pacific Loons, Red-throated Loons, a variety of shorebirds, and Greater White-fronted Geese.
- Essential Fish Habitat for saffron cod (NMFS 2005).

2.1.2 Utukok River Uplands Special Area

The Utukok River Uplands includes the headwaters of the Utukok, Colville, and Meade Rivers, and other drainages. This tundra and riparian habitat is home to high densities of caribou, wolverines, wolves, and grizzly bears. The area is also inhabited by moose, raptors, and anadromous fish.

<u>Recommendation</u>: There should be no future leasing within the concentrated calving grounds and insect relief areas of the WAH. In addition, to provide connectivity and ecological linkage between the uplands and the coast, 2-mile no surface occupancy buffers should be established along the Utukok, Ketik, Koalak, Kuk, and Kokolik Rivers within the NPRA.

The proposed restrictions would protect the following biological resources and values:

- **Concentrated calving and insect relief areas for the ~400,000 caribou of the Western Arctic Herd.** Consistent with the recommendation of the WACHWG and the NSB, the concentrated calving grounds (90% kernel analysis [Dau 2010]) and insect relief areas (75% kernel analysis[Dau 2010]) of the WAH should be withdrawn from leasing. Calving caribou are particularly sensitive to surface disturbance such as roads, facilities, and pipelines (Nelleman and Cameron 1998; Cameron et al. 2002). Further, it has been observed that "caribou were relatively unsuccessful in crossing road/pipeline corridors in the KDA [Kuparuk Development Area], particularly when in large, insect harassed aggregations." (Cameron et al., 2005). Interference with migration movements due to infrastructure has also been documented (ADFG 2004).
- **A complete wildlife movement corridor, or ecological linkage, between the mountains and the coast.** A 2-mile no surface occupancy buffer is proposed along the Utukok and Kokolik Rivers from the crest of the Brooks Range to the western edge of the NPRA. A 2-mile no surface occupancy buffer along the Ketik, Kaolak, and Kuk Rivers would preserve a traditional Native subsistence route (Wainwright Traditional Council and The Nature Conservancy 2007) which connects the village of Wainwright with the Utukok Uplands. Conservation of these areas would also minimize disturbance to anadromous fish waters used by pink salmon, chum salmon, and dolly varden (ADFG 2009).

Other special values that would benefit from the proposed development restrictions include protection of:

- The WAH as a critical subsistence resource which provides ~15,000 caribou harvested each year by approximately forty villages in Western Alaska (WACHWG 2010).
- Important tundra habitat for wolves and grizzly bears (Audubon Alaska 2002). Utukok Uplands is considered to have the highest grizzly bear density in the Western Arctic and entire Brooks Range (Miller et al. 1997; Carroll 1999).
- An unusually high density of wolverines (Magoun 1985; Audubon Alaska 2002).

2.1.3 Colville River Special Area

The Colville River is the largest river in Arctic Alaska. Cliffs along the river's banks are inhabited by a "phenomenal concentration" of nesting raptors (BLM 1999), and the river is

home to several species of anadromous fish. Downstream, the river delta (outside of the NPRA), supports 68 regularly breeding bird species, 22 overwintering fish species, and is a potential WHSRN site based on ~10,000s of shorebirds in summer and autumn. The river corridor is used by caribou, moose, wolf, and grizzly bear.

<u>Recommendation</u>: A 2-mile no surface occupancy buffer should be established for the Colville and two of its tributaries, the Kogosukruk and Kikiakrorak Rivers (all hereafter referred to as Colville) as endorsed by the BLM raptor specialist panel (BLM 1999). The westernmost portion of the Colville River Special Area is proposed as a no lease area where it overlaps the concentrated calving grounds (90% kernel analysis) of the WAH. [See the Utukok River Uplands Special Area description for more information.]

A 2-mile buffer along the Colville was recommended by the BLM raptor specialist panel in response to concerns about the adequacy of a 1-mile buffer as reflected in *Proceedings of the National Petroleum Reserve-Alaska Raptor Disturbance Mitigation Workshop* (BLM 1999): "[A] minimum two-mile buffer should be used until more is known about the breeding ecology of the nesting raptors along the Colville River." The proposed 2-mile buffer also has the endorsement of the Raptor Research Foundation (RRF) on behalf of approximately 1,200 professional raptor biologists and scientists from more than 55 different countries (RRF 1998).

The proposed 2-mile no surface occupancy buffer would protect the following:

- **High density nesting habitat for multiple raptor species**, including Peregrine Falcons, Gyrfalcons, Rough-legged Hawks, and Golden Eagles (USFWS 1997; BLM 1999; Wildman and Ritchie 2000). Probably nowhere else in the entire circumpolar Arctic can one find such a diversity and density of nesting raptors (BLM 1999). This area is a continentally significant Important Bird Area (Audubon Alaska 2002). Nearby energy development may impact these raptors through habitat loss which affects the prey base, or disturbance which may cause nest abandonment or failure (BLM 1999).

Other special values that would be protected by the proposed 2-mile no surface occupancy buffer include:

- Anadromous fish waters, which are used by pink salmon, chum salmon, broad whitefish, humpback whitefish, dolly varden, and multiple other important subsistence species (ADFG 2009).
- A small but significant population of moose (approximately 600 in 2002) that are heavily dependent upon the riparian habitat in the river bottoms, particularly in winter. (Audubon 2002)
- North America's largest Arctic river, having its entire watershed north of the Arctic Circle.

2.1.4 Teshekpuk Lake Special Area

Teshekpuk Lake is the largest lake in Alaska's Arctic and the third largest in all of Alaska. This internationally recognized area encompasses wetlands, coastline, barrier islands, and the Ikpikpuk River Delta, and is an area of remarkable productivity unique in the circumpolar Arctic.

<u>Recommendation</u>: There should be no future leasing within the concentrated calving grounds or insect relief areas of the TLH or within the overlapping goose molting area.

The proposed restrictions would protect the following biological resources and values:

- **Concentrated calving and insect relief areas for the ~67,000 caribou of the TCH.** Consistent with the recommendation of the WACHWG and the NSB, the concentrated calving grounds (90% kernel analysis [Parrett 2010]) and insect relief areas (75% kernel analysis [Parrett 2010]) of the TCH should be withheld from further leasing. As discussed above, caribou are particularly sensitive to surface disturbance such as roads, facilities, and pipelines (Nelleman and Cameron 1998; Cameron et al. 2002). Interference with caribou migration movements due to infrastructure has also been documented. [See the Utukok River Uplands Special Area discussion for more information.]
- **The largest goose molting area in the Arctic**, usually supporting over 60,000 individuals (USFWS 1998-2003), and over 20% of the Brant population (Bollinger and Derksen 1996). Molting is a particularly vulnerable time during the annual cycle for waterfowl species such as Brant; disturbance or loss of habitat could be detrimental to these sensitive populations (Ward et al. 1994). Brant are identified as a vulnerable WatchList species. This area is part of the globally significant Teshekpuk Lake Important Bird Area.
- **Critical no disturbance zone denning and feeding habitat for the threatened polar bear** (NOAA 1988; Kalxdorff 1997; USFWS 2009; Smith 2010). Coastal denning areas are expected to be of increasing importance due to reduced availability and quality of pack ice denning habitat (Fischbach et al. 2007). Barrier island critical habitat contains features essential for the conservation of the species, including denning, refuge from human disturbances, access to maternal dens and feeding habitat, and travel along the coast (USFWS 2010).

Other special values that would be protected by the proposed development restrictions include:

- The TCH as a critical, year-round subsistence resource which provides the vast majority (≥60%) of the caribou harvested by communities of the North Slope—about 5,000 animals, or nearly one caribou per North Slope Borough resident (ADFG 2008). The

TCH is especially important to residents of Barrow, the largest community in Alaska's Arctic, providing more than 95% of the estimated caribou harvest (Parrett, pers comm. 2010).

- A globally significant Important Bird Area, home to greater than 1% of the world's population of Yellow-billed Loons, Brant, Long-billed Dowitchers, Semipalmated Sandpipers, Pectoral Sandpipers, Dunlin, Stilt Sandpipers, Red Phalaropes, American Golden-plovers, and Black-bellied Plovers.
- High-density waterbird nesting habitat (USFWS 1992-2008) for:
  - Threatened Steller's and Spectacled Eiders, and the Yellow-billed Loon, which was warranted but precluded from listing.
  - Multiple WatchList and other species, including: Arctic Terns, Canada Geese, King Eiders, Long-tailed Ducks, Northern Pintails, Pacific Loons, Red-throated Loons, Sabine's Gulls, Tundra Swans, a variety of shorebirds, and Greater White-fronted Geese.
- Potential WHSRN sites (Alaska Shorebird Group 2008):
  - Around Teshekpuk Lake based on its very high numbers (~100,000s) of Pectoral Sandpipers, Black-bellied Plovers, American Golden-plovers, Long-billed Dowitchers, Dunlin, and Semipalmated Sandpipers in spring and summer.
  - At Cape Halkett based on high numbers (~1,000s) of Pectoral Sandpipers, Dunlin, and Red Phalaropes in summer.
  - At the Kogru River Delta based on high numbers (~10,000s) of Pectoral Sandpipers, Dunlin, Long-billed Dowitchers, and Red Phalaropes in summer.
  - At the Ikpikpuk River Delta based on high numbers (~10,000s) of Black-bellied Plovers, Ruddy Turnstones, Semipalmated Sandpipers, Pectoral Sandpipers, Dunlin, and Red Phalarope in summer.
- A variety of shorebirds that stage in autumn along the coast and barrier islands in concentrated groups (Taylor et al. 2010).
- Important anadramous fish habitat, including use by chum salmon, pink salmon, broad whitefish, humpback whitefish, and least cisco (ADFG 2009).
- The unique Pik Dunes geologic feature.

2.2 Other Areas of Outstanding Biological Value

In addition to the four existing BLM-designated Special Areas described above, there are four other areas within the NPRA that have outstanding biological value. The BLM should consider these areas for designation as new Special Areas under the NPRPA.

2.2.1 Dease Inlet & Meade River

The area around Dease Inlet and Meade River is characterized by thousands of small thaw lakes, which are important habitat for nesting loons, waterfowl, and shorebirds. The inlet itself is home to ice seals, particularly ringed and spotted seals. The barrier islands are

important for polar bears and nesting seaducks. The area also provides important insect relief habitat for the TCH.

The Dease Inlet & Meade River boundary is based on a combination of caribou and waterfowl values. The area captures clustered high-density nesting areas (USFWS 1992-2008) for WatchList species for which data were available (Yellow-billed Loon, Red-throated Loon, Spectacled Eider, King Eider, and Brant). Density for each species was binned into quintiles, and coded 1-5 by USFWS. The sum of the density codes were analyzed for clustering of high values. The resulting boundary is a smoothed line that captures approximately the top 75% of these values.

<u>Recommendation</u>: The Dease Inlet & Meade River Area should be considered for designation as a new Special Area. No further leasing should occur in the concentrated insect relief area for the TCH. Future activities in the Dease Inlet & Meade River area should be subject to special stipulations designed to prevent adverse impacts to its outstanding biological values, including a no surface occupancy restriction for the waters of Dease Inlet and within the critical no disturbance zone identified for polar bear.

It is recognized that a significant portion of the Dease Inlet & Meade River area is presently subject to valid active oil and gas leases sold in 2004 and 2006 which we do not contest. In these areas, existing leases may result in further exploration, development, and infrastructure development. Where appropriate, special stipulations should be applied. Examples could include clustering of pads, elevation/burial of pipelines, the use of directional drilling, operating restrictions, designation of no-fly areas, and no-development buffers surrounding deepwater lakes or other key water features. Alternatively, existing leases in these areas may be relinquished or expire, in which case the BLM should withold these tracts from future lease offerings.

The proposed restrictions would protect the following values:

- **Concentrated insect relief areas for caribou of the Teshekpuk Caribou Herd.** Consistent with the WACHWG and the NSB, Audubon Alaska recommends that the concentrated insect relief areas for the TCH not be subject to future leasing. The no lease boundary should be coincident with the 75% insect relief areas (kernel density analysis [Parrett 2010]) as reflected on the attached map.
- **Critical no disturbance zone denning and feeding habitat for the threatened polar bear** (Kalxdorff 1997; USFWS 2009; Smith 2010). Coastal denning areas are expected to be of increasing importance due to reduced availability and quality of pack ice denning habitat (Fischbach et al. 2007). Barrier island critical habitat contains features essential for the conservation of the species, including denning, refuge from human disturbances, access to maternal dens and feeding habitat, and travel along the coast (USFWS 2010).

- **High-density waterbird nesting habitat** (USFWS 1992-2008). In these areas, waterbird stipulations should be designed by BLM in close consultation with US Fish and Wildlife Service, Alaska Department of Fish and Game, and the North Slope Borough. Waterbird species of concern include:
  - Threatened Steller's and Spectacled Eiders, and the Yellow-billed Loon, which was warranted but precluded from listing (USFWS 1992-2008). This boundary captures the densest Yellow-billed Loon nesting area in Alaska (Audubon Alaska 2002; Smith 2010).
  - Multiple WatchList and other species, including: Red-throated Loons, Glaucous Gulls, Jaegers, Long-tailed Ducks, Northern Pintails, Pacific Loons, Sabine's Gulls, Scaups, Tundra Swans, a variety of shorebird species, Greater White-fronted Geese, and Brant.

Other significant biological values occurring in this area include:

- A known ringed seal concentration area (NOAA 1988), which is also important for feeding polar bears (Kalxdorff 1997).
- Spotted seal haul out areas in Dease Inlet and Smith Bay (NOAA 1988; Lowry et al. 1998).
- Potential WHSRN sites (Alaska Shorebird Group 2008):
  - At Dease Inlet based on its very high numbers (~100,000s) of Pectoral Sandpipers, Black-bellied Plovers, American Golden-plovers, Long-billed Dowitchers, Dunlin, and Semipalmated Sandpipers.
  - At Meade River based on large numbers (~10,000s) of Semipalmated Sandpipers, Long-billed Dowitchers, and Red-necked Phalaropes in summer.
  - At Elson Lagoon based on high numbers (~10,000s) of Red Phalarope in summer and autumn.
- A variety of shorebirds staging in autumn along the coast and barrier islands in concentrated groups (Taylor et al. 2010).
- Nearshore staging concentrations of King Eiders (Oppel 2008) and Long-tailed Ducks (NOAA 1988) in Elson Lagoon.
- A Black Guillemot nesting colony numbering around 400 individuals (USFWS 2008).
- Anadromous fish streams, including spawning areas for pink salmon, chum salmon, broad whitefish, and humpback whitefish, and use by least cisco (ADFG 2009).

2.2.2 Southern Ikpikpuk River

The southern half of the Ipikpuk River abuts the Teshekpuk Lake Special Area which lies to the north. The Ikpikpuk and its tributary, the Titaluk River, host a high density of nesting Peregrine Falcons. The Ikpikpuk River is an anadromous fish stream and also has been identified as providing significant shorebird habitat (Alaska ShorebirdGroup 2008).

<u>Recommendation</u>: A 2-mile corridor along the Southern Ikpikpuk River, and its tributary, the Titaluk River, should be considered for designation as a new Special Area. A 1-mile no surface occupancy buffer should be established along the Ikpikpuk and Titaluk rivers as reflected in the attached map. Future activities should be subject to special stipulations designed to prevent adverse impacts to the outstanding biological values of this area.

These conservation measures would protect the following biological values:

- **High-density Peregrine Falcon and Rough-legged Hawk nesting habitat** (USFWS 1997; BLM 1999; Wildman and Ritchie 2000). Nearby energy development may impact these raptors through habitat loss which can affect the prey base, or disturbance which may cause nest abandonment or failure. The 1-mile no surface occupancy recommendation was endorsed by the BLM raptor specialist panel (BLM 1999).

Other special values that would be protected by the proposed development restrictions include:

- High-density nesting habitat for Arctic Tern, Long-tailed Duck, Scaup, Greater White-fronted Goose, and Yellow-billed Loon, and a variety of shorebirds (USFWS 1992-2008).
- A potential WHSRN site based on high numbers (~10,000s) of American Golden-plover, Black-bellied Plover, Bar-tailed Godwit, Semipalmated Sandpiper, Sharp-tailed Sandpiper, and Long-billed Dowitcher in summer (Alaska Shorebird Group 2008).
- Anadromous fish waters, including a spawning area for broad whitefish, and use by pink salmon, chum salmon, humpback whitefish, and least cisco.

2.2.3 Peard Bay

Peard Bay and the surrounding wetland complex is a concentration area for three species of ice seals, polar bears, and various seaducks—particularly eiders. The habitat adjacent to Peard Bay is characterized by thousands of small thaw lakes, which provide important habitat for nesting loons, waterfowl, and shorebirds. The BLM acknowledged the outstanding ecological value of Peard Bay and nearby wetlands in the 2004 ROD for the Northwest NPRA IAP/EIS when it deferred leasing in this area for ten years.

The Peard Bay boundary is based on a combination of marine mammal and waterfowl values. The area captures clustered high-density nesting areas (USFWS 1992-2008) for WatchList species for which data were available (Yellow-billed Loon, Red-throated Loon, Spectacled Eider, King Eider, and Brant). Density for each species was binned into quintiles, and coded 1-5 by USFWS. The sum of the density codes were analyzed for clustering of high values. The resulting boundary is a smoothed line that captures approximately the top 75% of these values.

<u>Recommendation</u>: Peard Bay should be identified as a no lease area and the surrounding wetlands complex should be considered for designation as a new Special Area. Future activities in the larger Peard Bay area should be subject to special stipulations designed to prevent adverse impacts to its outstanding biological values, including no surface occupancy within the critical no disturbance zone identified for polar bear.

These conservation measures would protect the following biological values:

- **Critical no disturbance zone denning and feeding habitat for the threatened polar bear** (Kalxdorff 1997; USFWS 2009; Smith 2010). Coastal denning areas are expected to be of increasing importance due to reduced availability and quality of pack ice denning habitat (Fischbach et al. 2007). Barrier island critical habitat contains features essential for the conservation of the species, including denning, refuge from human disturbances, access to maternal dens and feeding habitat, and travel along the coast (USFWS 2010).
- **A continentally significant Important Bird Area, established for its use by nesting Spectacled Eiders**, a threatened species (Audubon Alaska 2009). This Important Bird Area, along with wetlands identified to the south, captures the densest Spectacled Eider nesting area in Alaska (USFWS 1992-2008; Smith 2010).
- **Important habitat for hauled out walruses** (NOAA 1988; Robards et al. 2007). When hauled out, walruses are highly sensitive to human disturbance, including aircraft or boat traffic (Garlich-Miller 2010); a one-mile buffer of walrus haul out areas from Icy Cape to Point Franklin, and around the coast of Peard Bay was recommended by Joel Garlich-Miller of the USFWS (pers. comm. January 2011).
- **A spotted seal haul out area, along with nearshore concentrations of ringed and bearded seals** along Point Franklin and across the marine waters (NOAA 1988; Lowry et al. 1998). Spotted seals are considered the most wary of seals, exhibiting high sensitivity to aircraft within 1.25 miles, and are also sensitive to human disturbances at their haul outs (Quakenbush 1988; Frost et al. 1992; Frost et al. 1993).
- **High-density nesting habitat for multiple WatchList and other species**, including: Arctic Terns, Red-throated Loons, Pacific Loons, King Eiders, Long-tailed Ducks, Sabine's Gull, Greater White-fronted Geese, and a variety of shorebirds. In these areas, waterbird stipulations should be designed by BLM in close consultation with US Fish and Wildlife Service, Alaska Department of Fish and Game, and the North Slope Borough.

Other special values occurring in this area include:

- A migration and staging corridor likely used by the entire breeding population of King Eiders in Western North America (Oppel et al. 2009). King Eiders are a depressed WatchList species.
- One of the only known Arctic nesting areas used by Kittlitz's Murrelets (Day et al. 1999).

- Nearshore staging and migration concentrations of threatened Steller's Eiders (Martin 2009) and Long-tailed Ducks (NOAA 1988).
- A potential WHSRN site based on high numbers (~1,000s) of Red Phalarope in summer and autumn (Alaska Shorebird Group 2008).
- A variety of shorebirds staging along the coast and barrier islands in autumn in concentrated groups (Taylor et al. 2010).
- Essential Fish Habitat for saffron cod (NMFS 2005).
- Anadromous fish streams, including spawning areas for pink and chum salmon.

2.2.4 DeLong Mountains & Arctic Foothills

DeLong Mountains & Arctic Foothills covers an area from the crest of the Brooks Range to the southern boundary of the Utukok River Uplands and Colville River Special Areas. This area is heavily used by migrating caribou, and is home to grizzly bears, wolves, and wolverines. This area adjoins the Noatak National Preserve and the Gates of the Arctic National Park, and is an important component for maintaining an undeveloped ecological linkage area or corridor from interior Alaska, across the Brooks Range, to the Arctic Coastal Plain.

Recommendation: The DeLong Mountains & Arctic Foothills area should be considered for designation as a new Special Area. Concentrated calving grounds and insect relief areas of the WAH as reflected on the attached map should be no lease areas. A small northern portion of this area is proposed as no surface occupancy where it overlaps raptor habitat in the Colville River drainage. [See the Colville River Special Area description for more information.]

The recommended development restrictions are proposed to protect the following:

- **Key insect relief areas for caribou of the WAH.** Consistent with the recommendation of the WACHWG and NSB, the concentrated calving grounds (90% kernel analysis [Dau 2010]) and insect relief areas (75% kernel analysis [Dau 2010]) for the WAH should not be subject to leasing or development.
- **A critical movement corridor for the WAH** in spring when moving to calving grounds; in summer to connect calving, insect relief areas, and foraging areas; and in autumn to return to winter foraging areas (Dau 2010).
- **A seasonal wildlife movement corridor or ecological linkage between the crest of the Brooks Range and Kasegaluk Lagoon**, ensuring in particular that Western Arctic caribou would have unimpeded access to all year-round habitats.

3. CONCLUSION

While it is expected and appropriate that oil and gas resources be developed within the NPRA, it is also important to "develop by design"— providing for a balance that will allow for future hydrocarbon extraction while also safeguarding the special areas in the NPRA that have high-value habitats and outstanding biological resources. As recognized by Congress in the NPRPA of 1976, there are significant surface values within the NPRA that warrant the protection that would be provided by the recommended conservation measures.

Thank you for your consideration of our recommendations.

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Western Arctic

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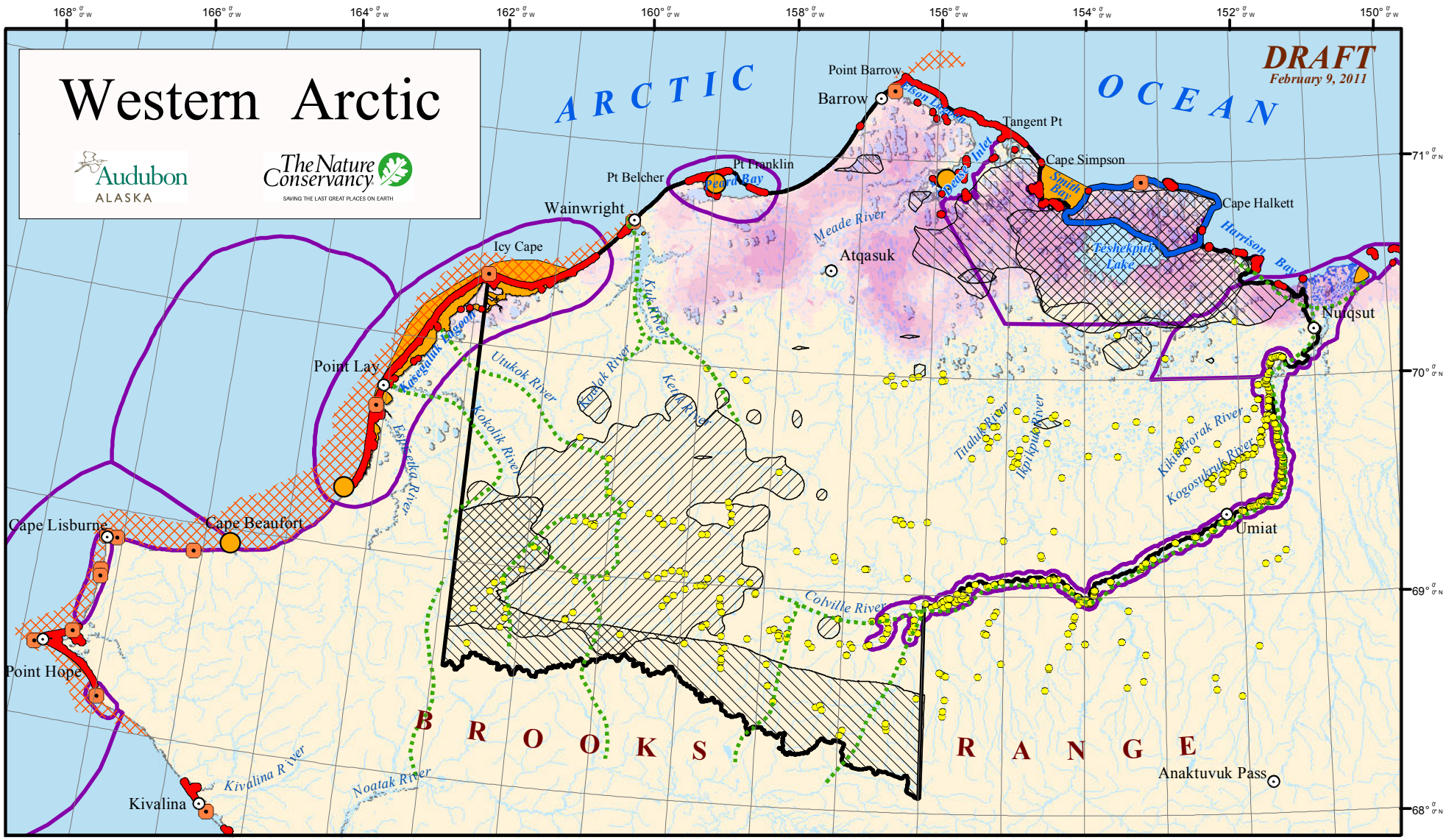

Known Areas of Biological Importance

- Important Bird Area[1]
- Goose Molting Area[2]
- Watchlist Bird Hotspot[3]
- Raptor Nesting Site[4,5]
- Polar Bear No Disturbance Zone[6]
- Beluga Concentration Area[7]
- Spotted Seal Haulout[7]
- Walrus Haulout[7]
- Caribou Calving - 90% Kernel Density[8]
- Caribou Insect Relief - 75% Kernel Density[8]
- Selected Historic Subsistence Routes Which Connect the Brooks Range To The Coast[9]

Scale 1:2,810,000
Albers Equal Area Conic Projection

25 0 25 50 Miles

1: Audubon Alaska, 2009; 2: USFWS, 2008; 3: Audubon Alaska, 2011; 4: ABR, Inc., 2002; 5: USFWS, 1997; 6: USFWS, 2009; 7: Smith, M. A. 2010. Arctic Marine Synthesis: Atlas of the Chukchi and Beaufort Seas. Audubon Alaska and Oceana, Anchorage; 8: Alaska Department of Fish and Game; 9: BLM, 1998

National Petroleum Reserve - Alaska

Habitat Conservation Strategy

Audubon ALASKA

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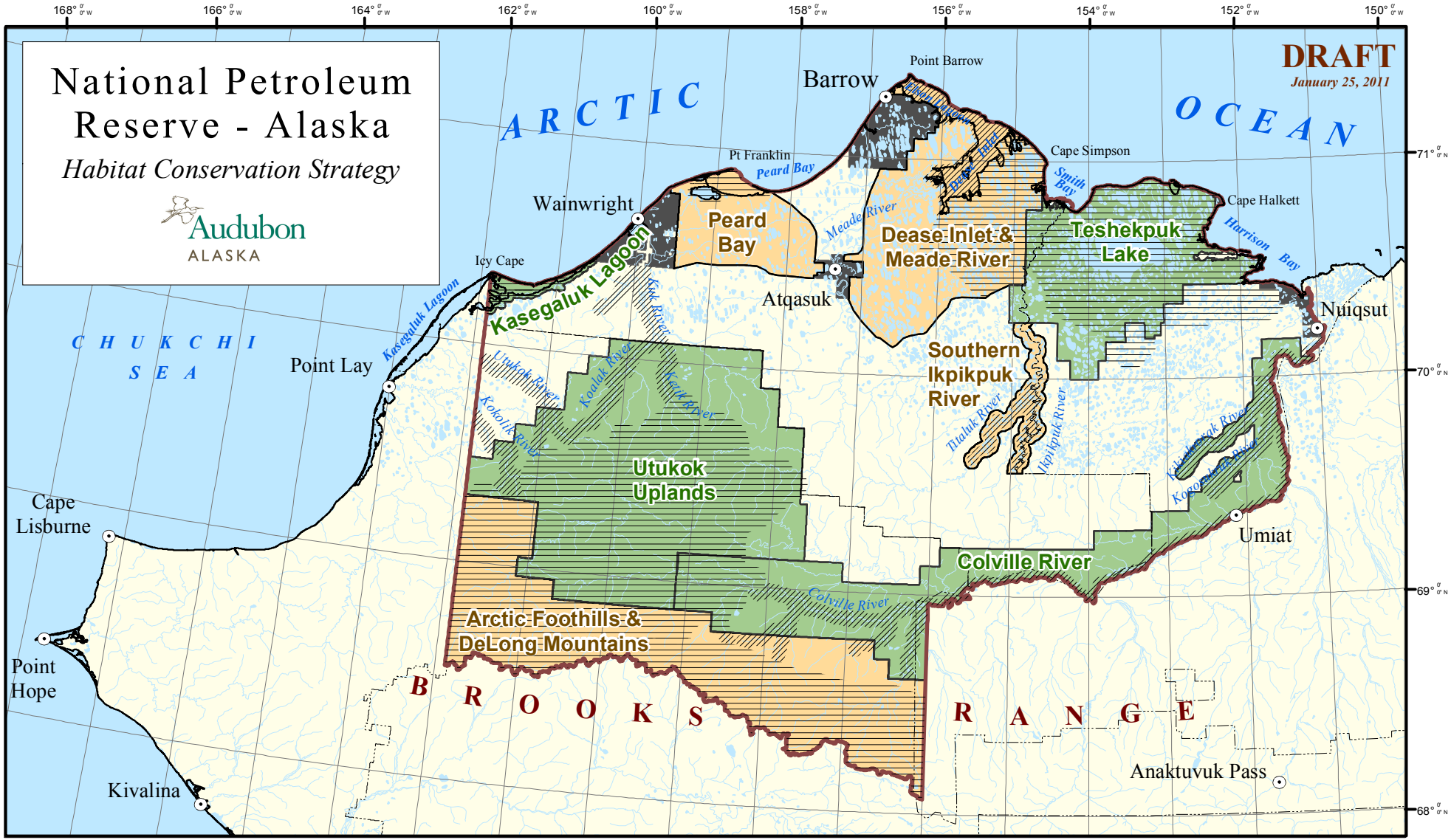

Special Areas

- Designated Special Area (8.13 million acres)
- Other Area of Outstanding Biological Value (5.89 million acres)

Proposed Restrictions

- No Future Leasing (8.11 million acres)
- No Surface Occupancy (1.89 million acres)

Scale 1:2,810,000
Albers Equal Area Conic Projection

25 0 25 50 Miles

Source: National Audubon Society
Alaska State Office, 2011.