
From: Hayes, Miriam (Nicole) <mnhayes@blm.gov>
Sent: Thursday, March 14, 2019 9:19 AM
To: coastalplainAR; Sean Cottle
Subject: Fwd: [EXTERNAL] Alaska Chapter of Wilderness Watch comments on Coastal Plain DEIS
Attachments: hjlcepjeepigklml.jpg

Follow Up Flag: Follow up
Flag Status: Completed

Nicole Hayes

Project Coordinator
Bureau of Land Management
222 W. 7th Avenue #13
Anchorage, Alaska 99513
Desk: (907) 271-4354
Cell: (907) 290-0179

----- Forwarded message -----

From: **Francis Mauer** <fmauer@mosquitonet.com>
Date: Wed, Mar 13, 2019 at 10:59 AM
Subject: [EXTERNAL] Alaska Chapter of Wilderness Watch comments on Coastal Plain DEIS
To: <mnhayes@blm.gov>

March 13, 2019

Submitted via email

Nicole Hayes

Attn: Coastal Plain Oil and Gas Leasing Program EIS

222 West 7th Ave., Stop #13

Anchorage, Alaska 99513

Blm_ak_coastalplain_EIS @blm.gov

Review Comments for Draft Environmental Impact Statement for the Coastal Plain Oil and Gas Leasing Program

Dear Ms. Hayes,

The following comments are submitted by Wilderness Watch in response to the Notice of Availability of the Draft Environmental Impact Statement for the Coastal Plain Oil and Gas Leasing Program and Announcement of Public Subsistence-Related Hearings Federal Register/Vol 83. No. 248, December 28, 2018.

Wilderness Watch is a non-profit conservation organization that focuses through education and advocacy to assure that our National Wilderness Preservation System is protected and administered according to the letter and spirit of the Wilderness Act.

Wilderness Watch submitted scoping comments on June 19, 2018 in response to a notice of intent to prepare an environmental impact statement for oil and gas leasing on the coastal plain of the Arctic National Wildlife Refuge.

Our scoping comments pointed out that the preeminent purpose for establishment of the Arctic National Wildlife Range in 1960 was to protect an essentially untouched wilderness where natural ecological processes are allowed to continue unhindered by humans.[\[1\]](#) This rare quality still exists in the Arctic National Wildlife Refuge, and is greater value today than ever before. The ecological integrity of the Arctic Refuge, its exceptional wilderness conditions, and its vast scale, sets this place apart from all other protected areas in America. Furthermore, the coastal plain of the Refuge, including that portion from the Aichilik River to the international border that is designated as Wilderness, is the last such area on Alaska's north slope that has remained off limits to oil and gas development. About 95% of north slope lands are available for possible oil development whereas the Arctic Refuge coastal plain amounts to about only 5% that has been protected. Oil and gas leasing and development in this last wild stretch of America's arctic is a highly significant issue. The Draft Environmental Impact

Statement (DEIS) fails to present this important context that would enable readers to understand what may happen to this last great wilderness.

During the public scoping hearing in Fairbanks, I recommended that the DEIS must recognize the special nature of the Refuge and that the American people deserve an honest assessment of what will be lost if the proposed lease sales are approved. Our review finds that this DEIS utterly fails to acknowledge the exceptional qualities of the Refuge, and it fails to clearly explain the implications of the proposed lease sales and development. It also fails to adequately assess the very serious impacts of oil and gas industrialization of the coastal plain and the implications such development will have over a much larger area than just the coastal plain itself. The DEIS does not fulfill the most fundamental requirement of the National Environmental Policy Act (NEPA): that the American public are properly informed of major federal actions that impact the human environment.

We are also concerned that BLM is attempting to complete this process within a very short time period that does not allow for a thoughtful and thorough consideration of the many complex issues that are involved. To adequately seek meaningful input from the public requires more time than has been allotted. Proposed actions of comparable scope and complexity generally require at least three to four years to complete.

However, in this case, the entire process is being rushed in order to hold a lease sale in 2019, just 2 years after the Tax Cut act was passed. To meet this deadline, unacceptably limited periods of time have been allowed for public participation. Only 60 days were allowed for scoping comments from the public, and initially only 45 days were allowed for public comments on this DEIS. Furthermore, notice for a public meeting held in Fairbanks regarding this DEIS was announced only 5 days before the meeting.[\[2\]](#) Very short notice was also provided for meetings in rural communities where it is most important for residents to have more time to prepare and participate. Such administrative decisions seriously impair the effectiveness of this entire EIS process and fail to properly comply with NEPA. Limitations have also been placed on the number of pages allowed for this EIS. The requirements of the National Environmental Policy Act cannot be fulfilled under such restrictions.

Our review of this DEIS reveals numerous examples of failure to explain and document various data sources used in BLM's analysis of impacts. We found a lack of transparency throughout

this document rendering it impossible to understand how or why various assessments were arrived at. In addition, the DEIS presents many vague generalizations that lack proper documentation, leaving the reader with no means to evaluate the authenticity of statements that are made. In the following comments we provide examples of deficiencies that are rampant throughout the document.

Arctic Refuge Purposes

The Arctic National Wildlife Range was established by Executive Order 2214 in 1960 for the purposes to “preserve wildlife, wilderness and recreational values.” This action was the result of a historic campaign by American citizens and conservation organizations who sought to protect the biologically diverse arctic and subarctic landscape of northeastern Alaska. In 1980 the Alaska National Interest Lands Conservation Act (ANILCA) enlarged the Wildlife Range, changed its name to the Arctic National Wildlife Refuge, enlarged its boundaries to better protect migration and winter habitats of the Porcupine Caribou Herd in Alaska. It also designated about 8 million acres of the original Range as Wilderness. ANILCA also added four additional purposes in Section 303:

- i) *to conserve fish and wildlife populations and habitats in their natural diversity including but not limited to the Porcupine caribou herd (including participation in coordinated ecological studies and management of this herd and the Western Arctic caribou herd), polar bears, grizzly bears, muskox, Dall sheep, wolves, wolverines, snow geese, peregrine falcons, and other migratory birds and Arctic char and grayling;*
- ii) *to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats;*
- iii) *to provide, in a manner consistent with the purposes set forth in subparagraphs (i) and (ii), the opportunity for continued subsistence uses by local residents; and*
- iv) *to ensure, to the maximum extent practicable and in a manner consistent with the purposes set forth in paragraph (i), water quality and necessary quantity within the refuge.*

The purposes of Executive Order 2214 and ANILCA have not been explicitly nullified by the Tax Cut Act, however, the DEIS does not clearly explain how these purposes will be affected by the proposed oil lease sales. Furthermore, the DEIS errors in claiming that Congress designated the coastal plain for potential oil development.[\[3\]](#) In fact, an assessment of potential hydrocarbon resources and the fish, wildlife and habitats was required including impacts of possible development. In addition, Congress prohibited any production of oil and gas from the Refuge and no leasing or other development leading to production was allowed (Section 1003 of ANILCA). The BLM must correct this misleading statement.

Impacts to Wilderness Characteristics

In numerous instances we find the DEIS to be exceedingly disingenuous in its description of impacts to Wilderness. For example, on page 3-216 we find the following statement referring to Alternative B:

“Wilderness characteristics would be eliminated on a site-specific basis should new roads be authorized; however, the area would likely retain its overall wilderness character.”

No further explanation is provided as to how this evaluation was determined. Claiming that roads eliminate wilderness characteristics only “on a site-specific basis” reveals a general bias that downplays the magnitude of potential impacts of leasing and development. Roads are prohibited in Wilderness for a good reason: they are incompatible and destroy the very essence of wilderness character. The effect of a road built in a roadless area, such as the coastal plain, extends far beyond the site-specific area. However, the DEIS is silent on this point. This distorted and false assessment (“the area would likely retain its overall wilderness character”) must be revised to reflect the true impacts of roads on wilderness character within all action alternative areas.

Currently the coastal plain has conditions that make it suitable for designation as Wilderness and the U.S. Fish and Wildlife has recommended that it be designated as Wilderness.[\[4\]](#) The presence of a road on the open tundra landscape of the coastal plain would have a devastating effect on wilderness characteristics over a vast area and greatly impact the enjoyment provided to visitors who come to the Refuge to experience these characteristics.

Even portions of Alternative D area where it is proposed that there would be no leasing, there is potential for harm to wilderness characteristics because BLM indicates that seismic exploration may be allowed in no lease areas.[\[5\]](#) Experience has shown from 2 D seismic surveys done during 1984-85, that significant damage to tundra vegetation, soils, hydrology and visual resources occurred. These surveys harmed wilderness characteristics in a manner that over 120 miles of trails remain damaged and visible in 2018. Impacts associated with 3 D techniques will likely be much greater due to the intensive grid (650 feet between lines).[\[6\]](#) The likelihood of impacts to wilderness characteristics from seismic surveys within “no lease” areas is great, and must be assessed in this EIS process. The cumulative impact of seismic surveys within all action alternatives must also be acknowledged, because this alone constitutes a large impact to the wilderness character of the coastal plain and the viewshed extending far into adjacent designated Wilderness lands.

Irreversible and Irretrievable Commitments of Resources

This section fails to include the irreversible and irretrievable loss of wilderness characteristics that still exist on the Refuge coastal plain.[\[7\]](#) Instead it lists the loss of hydrocarbon resources, industrial use of water and certain wildlife values that will be lost due to production of oil and gas. We point out, however, that the 1002 (h) Report to Congress[\[8\]](#) correctly stated that: *“The wilderness character of the coastal plain would be irretrievably lost”* if the coastal plain were opened to oil leasing and development. We recommend that this EIS acknowledge the truth, rather than continue to avoid this important issue. As we have mentioned earlier, the American people deserve to be informed of what will be lost.

Visual Impacts to Wilderness Character and Designated Wilderness Adjacent to the Coastal Plain.

During scoping we recommended that impacts of leasing and subsequent development on the coastal plain’s visual resources and wilderness character be described and assessed. We urged that GIS enabled viewshed mapping be conducted to determine the magnitude of impacts to viewsheds. We are disappointed to learn that BLM has decided to not do such mapping at this time, but rather such analysis might be done at a later time in response to specific proposed actions. We are, however, encouraged to learn at least some of the extent of potential impacts

because a citizen has completed a competent GIS analysis and submitted his report in this comment process.[\[9\]](#) As expected, the viewshed of impacted area is vast and covers essentially the entire coastal plain. Furthermore, Mr. Smith's mapping documents that visual impacts of oil development structures and activities will extend over a vast area of designated Wilderness to the south and east of the coastal plain. We recommend that BLM include a thorough analysis of viewshed impacts to visual resources and wilderness characteristics as part of this EIS process. Production of this information is the responsibility of BLM, and we should not have to rely on a citizen to provide it. Again, we emphasize that the American people deserve to know earlier rather than later, the extent of impacts to visual resources and thus wilderness character as well.

Throughout the DEIS we encountered many statements that while not false on surface, are nuanced in a way that can mislead readers who may be unfamiliar with arctic environments and oil field development. Here is an example:

3-205 *"Where aboveground development is allowed, lease stipulations that minimize the visual contrast of new development, such as by requiring design elements that complement the predominant natural features of the characteristic landscape would reduce the intensity of visual impacts and associated change to the recreation setting."*[\[10\]](#)

Roads, pipelines, oil field infrastructure etc. are extremely foreign and incompatible with the natural landscape of the coastal plain that consists of open rolling hills and plains covered by tundra vegetation. Very little can be done to hide it short of putting the entire development underground. While the intensity of visual impacts may be slightly reduced by requiring design elements that fit into the natural features, such actions are extremely limited. The American public deserve a more accurate and realistic description of the intrusive nature of industrial facilities placed in an open tundra setting.

Wildness and the Arctic Refuge as a Scientific Control Area

When a conservation area was first considered for northeast Alaska, proponents recognized that one of the values this area would have is to serve as a scientific control area which would allow evaluation of impacts resulting from human activities and development occurring elsewhere in the Arctic region.[\[11\]](#) Since its establishment in 1960 to the present, the Arctic

Refuge has remained essentially free of human developments and has functioned as a control area.

The Refuge founders also recognized the value of allowing ecological and evolutionary processes to continue unhindered by humans. This principle is also referred to as “wildness” because it allows for nature to remain autonomous. Wildness is the most essential element of wilderness, where the intention is to allow nature to remain free of human interventions or to be “untrammeled.” Many Americans cherish true wildness, even if only knowing that it still exists in the Arctic Refuge.

The 2015 Comprehensive Conservation Plan (CCP) [\[12\]](#) for the Refuge identifies several special values including:

Wilderness Characteristics: “Arctic Refuge exemplifies the idea of wilderness- to leave some remnants of this nation's natural heritage intact, -wild and free of the human intent to control, alter, or manipulate the natural order....”

Ecological Values: “The distinguishing ecological aspect of the Refuge-and a major reason for its establishment is that this single protected area encompasses a wide range of arctic and subarctic ecosystems, their unaltered landforms, and native flora and fauna. The Refuge is a place of free-functioning ecological and evolutionary processes, exhibiting a high degree of biological integrity, natural

diversity, and environmental health....”

Scientific Values: “As intended, the Refuge has become a natural laboratory of international importance. The ecological processes, natural diversity, and free function of natural communities in the Refuge provide unsurpassed opportunities for scientific understanding of wildlife, ecology, geophysics, and the changing climate.”

A revised DEIS should explain the importance of the Refuge with regard to wildness, ecological and scientific values. It must also explain how these values will be impacted or lost entirely due to oil leasing and development. The value of the Refuge in functioning as a scientific control area must also be addressed in a revised DEIS. The implications of no longer having the capability to make scientific comparisons with developed areas in the Arctic region must be presented in the revised DEIS. This capacity, afforded by the wildness of the Arctic Refuge, is especially valuable to science in the future as the global climate continues to warm, and as oil development continues to expand across the north slope west of the Refuge.

Terrestrial Mammals: Caribou

We have many concerns about the manner in which caribou information is presented in the DEIS. In numerous instances, the DEIS fails to provide documentation of data sources and fails to explain and justify why only selected portions of existing data are presented. Omission of pertinent information on caribou is also a major problem. Failure to present the full spectrum of existing caribou data and omission of key information renders the entire assessment of impacts to caribou inadequate. The DEIS also fails to interpret the full magnitude potential negative consequences of leasing and development on caribou populations, and it fails to provide a thorough analysis of impacts over the geographic range of the Porcupine caribou herd. The ecological consequences of reduced caribou populations due to oil development impacts must be addressed in a revised DEIS. More of our concerns are expressed in further detail through the following specific comments.

Porcupine Caribou Calving Information

Map 3-21 shows a calving area that the Porcupine caribou herd (PCH) have apparently used greater than 40% of the time over 37 use years. The DEIS does not explain what years of data were used to generate this map, it does not explain if the 37 use years are a block of consecutive years or if there are gaps in the years used. The DEIS also does it provide any justification for showing only calving distribution used greater than 40% of those years. Yet this map more than any other sets the stage for an incomplete assessment of potential impacts associated with the various alternatives and mitigative measures that BLM is proposing for management of oil and gas leases and development within calving and post-

calving habitats. The BLM must clarify the categories of information it presents and provide justification for its analyses so that readers can evaluate how the agency has arrived at its impact assessments.

Information regarding use of habitats by the Porcupine caribou herd within Alaska[13] as well as regions within its range in Canada[14] span more than 75 years. The first mapping of calving distribution was completed as early as 1961[15] This early work documented calving activity extending as far west as the Canning river and mapped concentrated calving areas in uplands south of Camden Bay and the Jago River uplands. In 1969 calving was reported in the Camden Bay-Marsh Creek-Katakturuk area.[16] Calving concentrations in the Camden Bay, Marsh Creek-Katakturuk area were mapped in 1974, 1975 and 1977 during several years of intensive aerial surveys associated with impact studies for the proposed Arctic Gas Pipeline.[17] Concentrations of calving caribou occurred in the western portion of the coastal plain in 1990, 1991, 1994, 1995[18] as well as in 2017 and 2018[19]

The DEIS, however, fails to mention any of these earlier historic records of calving, nor the more recent records during the 1990's and 2017-18, within the western portion of the coastal plain by the Porcupine caribou herd. In doing so, the DEIS fails to identify significant use of the western portion of the coastal plain for calving by the Porcupine caribou herd. BLM claims this area may have the highest hydrocarbon potential,[20] however, by neglecting to describe significant historical use of this area for caribou calving, the DEIS fails to identify this key area where impacts are likely to occur.

Distribution and location of concentrated calving areas of the PCH varies annually due to factors such as regional snow melt patterns and early plant green-up.[21] It is essential that calving caribou are not displaced towards foothills and mountainous terrain where predator-related mortality of young calves is greater.[22] Analysis of potential impacts related to displacement of calving by oil development activities must consider the full range of known calving habitats or areas used by the PCH in order to achieve the best possible impact assessment. We urge the BLM to prepare a new assessment of potential impacts associated with the displacement of calving caribou from preferred habitats using all existing data. An appropriate assessment must also analyze potential impacts over the assumed lifespan of proposed oil and gas operations which BLM has identified to be 130 years.[23] Although the use of calving habitat within the coastal plain is not uniform, the effects of oil development in areas such as the western portion of the coastal plain must be weighed over the entire time period of operations. Furthermore, the effects of climate change must also be evaluated in

order to achieve the best possible assessment of impacts to caribou calving. The DEIS utterly fails to provide an adequate assessment. We urge that a revised DEIS address these shortcomings and allow for additional public review before any further decisions are made regarding oil and gas leasing.

Post-calving Information

The DEIS fails to adequately describe historic and current data regarding post-calving habitat use by the PCH especially for the western portion of the coastal plain where oil potential is believed to be greatest. Habitats used by the PCH during the calving and post-calving periods are ranked highest in sensitivity over all other periods of the herd's annual cycle.[\[24\]](#)

Documentation of extensive use of the western coastal plain by very large numbers of the PCH date back at least as far as 1967.[\[25\]](#) An estimated 80,000 caribou were photographed along the coast of Camden Bay in 1972, during the first aerial photo census of the PCH.[\[26\]](#) Frequent use of post-calving habitat in the western coastal plain, including the Canning Delta, (Photo 1.) Camden Bay (Photo 2.) Katakturuk River and Marsh Creek areas, by the PCH was reported during the 1970's.[\[27\]](#) Heavy use of this portion of the coastal plain for post-calving has been consistent for most years to the present time.[\[28\]](#) During 2014 to 2017 some post calving aggregations in the western coastal plain have been estimated as high as 121,000 caribou.[\[29\]](#) In addition, the entire coastal region of the program area is frequently used for insect relief.[\[30\]](#) (Photos 3 & 4)

During the calving and post-calving periods it is imperative that caribou movements are unimpeded so that they can optimize nutrient uptake, avoid predators and seek relief from insect harassment. Cows with nursing calves are especially stressed during this time due to the requirements of lactation, moulting, and additional energy expenditure for predator avoidance and relief from insect harassment. If their ability to balance physiological demands are further jeopardized due to industrial disturbances and barriers, during this stressful season, they may enter the fall with insufficient body fat to conceive a new calf or successfully produce a healthy calf the following year.[\[31\]](#) The consequences of impairment of caribou

movements by industrial developments, may also impact recruitment of calves of the year due to premature weaning by nutritionally weakened cows.[\[32\]](#)

Central Arctic and Porcupine Herd Differences

The DEIS relies heavily on certain information and assumptions that are drawn from interactions of the Central Arctic caribou herd and oil field development west of the Refuge. However, the DEIS provides little in the way of describing the differences between that scenario, and proposed development in the Arctic Refuge coastal plain. Understanding the specific characteristics of these two areas is fundamental in evaluating what potential impacts to expect if there is development on the coastal plain of the Refuge.

A major difference exists in the distance between the sea coast on the north and mountains of the Brooks Range to the south for the range of the CAH vs the PCH. Most of the Central Arctic herd's north slope range extends over 100 miles from coast to mountains, whereas, the Porcupine caribou herd uses a narrow strip of habitat ranging from about 15 to 35 miles wide for its calving and post-calving activities. Comparing current population levels for these herds, there is about five times as much potential summer habitat for the CAH numbering about 25,000[\[33\]](#) vs that of the PCH which currently is estimated at 220,000.[\[34\]](#) Densities of PCH cows in the Refuge coastal plain are many times higher than those of the CAH. Yet oil development has had significant influences on the CAH even though the density of caribou in the development area is far less than would be the case for the PCH. For example, within less than ten years after oil development began at Prudhoe Bay, and following construction of the Trans Alaska Pipeline, distribution and movements of the CAH were altered.[\[35\]](#) During the early 1980's, displacement of cows with young calves away from roads was documented.[\[36\]](#) As oil field development intensified and expanded, the western calving area of the CAH shifted south and away from oil field infrastructure.[\[37\]](#) The full extent of interactions between oil development and the CAH are summarized by the National Research Council.[\[38\]](#) It is important to note that the alterations of habitat use of the CAH described above have persisted to the present time.

The DEIS fails to diligently incorporate the documented impacts on habitat use of the CAH in its analysis of potential impacts that development may have on the PCH. The DEIS does not take into consideration other differences that exist between the CAH and PCH. For example, of the caribou herds that inhabit Alaska's north slope, the PCH has exhibited the lowest rate of annual increase.^[39] Studies of population performance of the PCH suggest that a five per cent decrease in calf survival could result in a declining population.^[40]

Recent analysis of the Porcupine Caribou Herd and potential oil development suggest that annual calf survival may decline by nine per cent if development occurs in calving areas.^[41] This analysis also points out that impacts of development may be significant during the post-calving season especially with respect to the movement of very large aggregations seeking insect relief. Experience has shown that large groups of the CAH have greater reactions to pipelines,^[42] and interactions with infrastructure have led to shifts in caribou distribution to peripheral areas of development complexes.^[43] In the case of the PCH post-calving aggregations in excess of 120,000 are not uncommon and there is no existing experience with such large groups interacting with roads, pipelines and industrial infrastructure.^[44] However, BLM inappropriately claims that: *"the 7-foot minimum height at VSMs and placement of elevated pipelines at least 500 feet from adjacent roads have been found to be adequate to maintain caribou passage in the oilfields west of Prudhoe Bay."*^[45] Simply referring to the CAH experience here is unacceptable when it is known that the situation with the PCH is vastly different. The BLM must acknowledge these differences and provide an objective description here, and take such differences into account when assessing potential impacts for the PCH.

Population Size and Range Occupation

The relation between the size of caribou populations and extent of range occupied has been generally established for over fifty years.^[46] When caribou populations are at a peak, they migrate greater distances and the range occupied is largest. For example, during the early 1920's, a great herd of caribou estimated to number over 500,000 were known to migrate from uplands north of Fairbanks Alaska nearly to Whitehorse in the Yukon Territory.^[47] By the early 1970's this herd had declined to about 6,000 and it no longer migrated across the Steese Highway and only occasionally crossed the international border.^[48]

The DEIS fails to incorporate the fundamental relationship between population size and extent of range occupied, in its analysis of potential impacts of oil leasing and development on the coastal plain. Failure to do so, prevents an appropriate consideration of impacts that may result if the PCH and CAH decline and consequently occupy a smaller area. Ecological relationships over a vast region of northeast Alaska and northwest Canada could be affected by reduced numbers of caribou ranging over a much smaller area. This situation would have serious consequences for some twenty communities across Canada and Alaska. We are concerned that the DEIS focuses heavily on social-economic conditions and impacts for the communities of Kaktovik, Nuiqsit, Arctic Village and Venetie[\[49\]](#) but fails to provide an equal assessment for the many other communities, especially those in Canada. The community of Old Crow, Yukon Territory, has a far stronger and direct dependence on the PCH than Nuiqsit. Depending on the severity a caribou population decline resulting from leasing and development, several communities located near the margin of the PCH range would likely suffer disproportionately. A revised DEIS must be completed to rectify this deficiency.

The DEIS also fails to address the ecological impacts that would occur if there is a decline in abundance of the Porcupine caribou herd resulting from oil leasing and development. Such impacts would affect an area extending more than 250,000 square kilometers in Alaska and Canada.[\[50\]](#) Reduced abundance of caribou over this great expanse would have significant implications for a multitude of species and likely have cascading effects throughout the entire food web as well as altering basic nutrient cycles, and predator-prey systems.[\[51\]](#)

Conclusion:

The entire sequence of events, including the arcane mechanism that enabled the amendment for oil leasing in the Arctic Refuge as a part of the Tax Cut Act, represents a gross failure of our political system. This completely inadequate and inappropriate DEIS, with its multitude of failures and flaws reflects a continuation of the corruption that birthed this document. The failings we point out with these comments are only a small fraction of the improbity imbedded here.

The National Environmental Policy Act remains the law of the land, and it must be complied with regardless of the whims of any particular administration. The American people deserve an honest assessment of the impacts and an explanation of what will be lost if oil lease sales

are granted in the Refuge. This DEIS does not provide an honest assessment because it fails to explain the most basic element. The Arctic National Wildlife Refuge is the last and only protected landscape on our arctic coast. It's untouched original condition is now on the brink of destruction. There is no way to restore its original condition.

History has shown and this comment period will no doubt reinforce, that the American people have a deep-seated desire to protect the Arctic Refuge from development. Wilderness has shaped our national character and there is something about wild, untouched pristine landscapes that still touches our soul. Nowhere in our country harbors these wild values the way the Arctic Refuge does, and any effort to develop it will destroy an essential part of our nation's character. The DEIS is remiss because it fails to capture the irreparable damage to our character if development occurs on the coastal plain.

Sincerely,

Fran Mauer

Alaska Chapter of Wilderness Watch



(Photo by Don

Ross)

Photo 1. Caribou seeking relief from insects in the Canning River delta of the coastal plain of the Arctic National Wildlife Range. July 1990.



Photo 2. Post-calving aggregation of the Porcupine caribou herd south of Simpson Cove, Camden Bay, coastal plain of the Arctic National Wildlife Refuge during insect harassment season. (July, 1990)



(photo by Debbie Miller)

Photo 3. Caribou of the Porcupine herd seeking insect relief along the coastal plain of the Arctic National Wildlife Refuge east of Kaktovik.



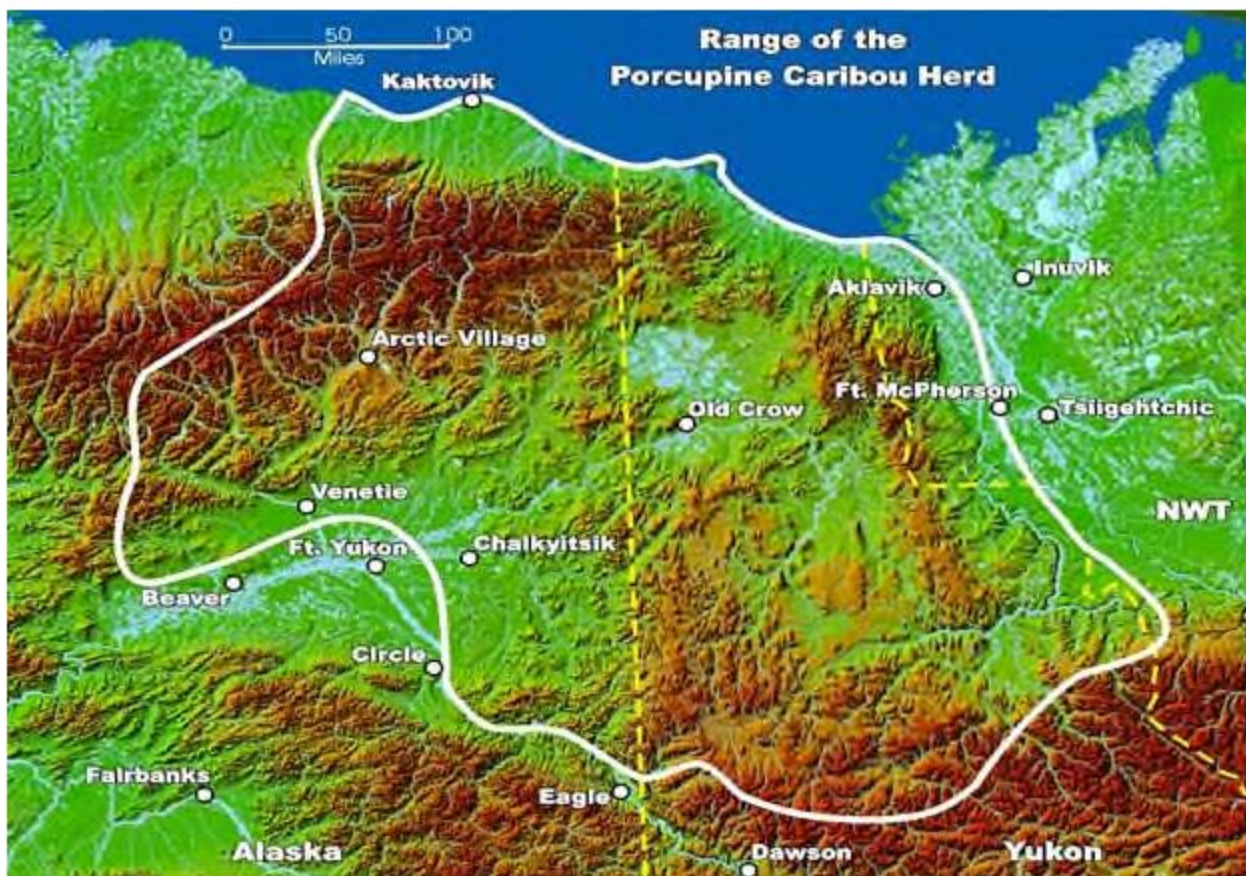
(photo by Fran

Mauer)

Photo 4. A Porcupine caribou herd post-calving aggregation numbering over 60,000 crosses the Niguanak River on the coastal plain of the Arctic National

Wildlife Refuge, to coastal insect relief habitat east of the Kaktovik Inupiaq

Corporation/Arctic Slope Regional Corporation lands, July 4, 1986.



Reference Map (footnote 44).

References for Wilderness Watch Comments 13-03-19

1. Roger Kaye 2006. Last Great Wilderness: The Campaign to Establish the Arctic National Wildlife Refuge. Univ of Ak Press. 2006.
2. BLM Notice for Public Meetings dated January 30, 2019.
3. DEIS. Vol. I. 3-37.
4. USFWS, 2015. Arctic National Wildlife Refuge Comprehensive Conservation Plan.

5. DEIS vol. I. 3-120
6. Walker et al. 2019. Likely impacts of proposed 3D-seismic surveys to terrain, permafrost, hydrology and vegetation in the 1002 Area of the Arctic National Wildlife Refuge. Dated January, 2019.
7. DEIS vol I. 3-248-249.
8. USDOJ 1987. Arctic National Wildlife Refuge 2015. Alaska, Coastal Plain Resource Assessment (Report and Recommendation to the Congress of the United States and Legislative Environmental Impact Statement. p. 164.
9. S. Smith. 2019. Comments and report submitted to BLM dated January 11, 2019.
10. DEIS vol. 1 3-105.
11. Collins, G. L. and L. Sumner. 1952. Arctic Research Laboratory, Progress Report. 1 and 2.
12. USFWS 2015. Arctic National Wildlife Refuge Revised Comprehensive Conservation Plan. 2015. P. 1-20, 21.. Fairbanks, Ak.
13. Scott. R.F. 1952. Caribou movements, abundance and distribution. Federal Aid in Wildlife Restoration. Alaska Project W-3-8-7.
14. Munro, D.A. 1953. A preliminary report on the caribou of the northern Yukon Territory. Can. Wildl. Serv., Unpubl. Rep. Edmonton. 29pp.
15. Skoog, R.O., R.F. Batchelor, F.F. Jones, and R.L. Winters. 1963. Caribou investigations. Vol. III. Federal Aid in Wildl. Rest., Project W-6-R-3, Work Plan C. Ak. Dept. of Fish and Game. Juneau, AK. 15pp.
16. Roseneau, D.G., J. Curatolo, and G. Moore. 1975. The distribution and movements of the Porcupine caribou herd in northeastern Alaska and the Yukon Territory, 1974. Arctic Gas Biol. Rep. Ser. Vol. 32. Page 66.
17. Clough, N.K., Patton, P.C., Christiansen, A.C. (eds.). 1987. Arctic National Wildlife Refuge, Alaska, coastal plain resource assessment – Report and recommendation to the Congress of the United States and final legislative environmental impact statement. U.S. Fish and Wildlife Service, U.S. Geological Survey, and Bureau of Land Management, Washington D.C. pages 22-23.
18. USFWS 2015. Arctic National Wildlife Refuge Comprehensive Conservation Plan. Map 4-9, p. 4-99.
19. Caikowski, J. 2018. Porcupine caribou herd calving and post-calving surveys. AK Dept of Fish and Game memoranda.
20. USFWS 1986. Final report baseline study of the fish, wildlife and their habitats. Vol.I. Anchorage, Ak.p. 392.
21. Griffith, B., D.C. Douglas, N.E. Walsh, D.D. Young, T.R. McCabe, D.E. Russell, R.G. White, R.D. Cameron, and K.R. Whitten. 2002. The Porcupine caribou herd. Pages 8-37, *in* D.C. Douglas, P.E. Reynolds and E.B. Rhode, editors. Arctic Refuge coastal plain terrestrial wildlife research summaries. U.S. Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001.
22. Whitten, K.R., G.W. Garner, F.J. Mauer, and R.B. Harris. 1992. Productivity and early calf survival of the Porcupine caribou herd. Journal of Wildlife Management. 56-201-212.

23. DEIS vol II. Map B-1.
24. International Porcupine Caribou Herd Board. 1993. Sensitive Habitats of the Porcupine Caribou Herd. Pages 14 and 17.
25. Thayer, A. 1967. Caribou observation. Arctic National Wildlife Refuge files. Fairbanks, Ak.
26. LeResche, R.E. 1972. Summary of significant observations of Porcupine and arctic caribou herds in Alaska, 1972. Alaska Dep. Fish and Game. Unpubl. summary of field notes. 6pp.
27. Arctic Gas Biol. Rep. Ser. Vols. 7, 22, 32, and 36.
28. Russell, D., and A. Gunn. 2019. Vulnerability analysis of the Porcupine Caribou Herd to potential development of the 1002 lands in the Arctic National Wildlife Refuge, Alaska. Report prepared for: Environment Yukon, Canadian Wildlife Service, and GNWT Department of Environment and Natural Resources. 143 pp.
29. Russell, D., and A. Gunn. 2019. Vulnerability analysis of the Porcupine Caribou Herd to potential development of the 1002 lands in the Arctic National Wildlife Refuge, Alaska. Report prepared for: Environment Yukon, Canadian Wildlife Service, and GNWT Department of Environment and Natural Resources. 143 pp.
30. USFWS 1986. Final report baseline study of the fish, wildlife and their habitats. Vol.I. Anchorage, Ak.p. 232-235.
31. Cameron, R.D., Smith, W.T., White, R.G., Griffith, B. 2005. Central Arctic caribou and petroleum development: distributional, nutritional, and reproductive implications. Arctic 58, 1-9.
32. White, R.G., Russell, D.E., & Daniel, C.J. 2014. Simulation of maintenance, growth and reproduction of caribou and reindeer as influenced by ecological aspects of nutrition, climate change and industrial development using an energy-protein model. Rangifer, 34, Spec. Issue No. 22. 126 Pp.
33. Lenart, E.A. 2015. Units 26B and 26C caribou. Chapter 18, pages 18–1 through 18–38 [In] P. Harper and L. A. McCarthy, editors. Caribou management report of survey and inventory activities 1 July 2012–30 June 2014. Alaska Department of Fish and Game, Species Management Report ADF&G/DWC/SMR-2015-4, Juneau.
34. Caikowski, J. 2017. 2017 Photocensus of the Porcupine Caribou Herd. Ak. Dept. Fish Game. Memo. 3pp.
35. Cameron, R.D., Whitten, K.R. 1980. Influence of the Trans-Alaska Pipeline corridor on the local distribution of caribou. In: Reimers, E., Faare, E., and Skjenneberg, S. (eds.). Proceedings of the 2nd International Reindeer/Caribou Symposium, Røros, Norway, 1979. Direktoratet for vilt og ferskvannsfisk, Trondheim.
36. Dau, J.R., Cameron, R.D. 1986. Effects of a road system on caribou distribution during calving. Rangifer 1, 95-101.
37. Cameron, R.D., Smith, W.T., White, R.G., Griffith, B. 2002. The Central Arctic Caribou Herd. Pages 38-45 [In] Douglas, D.C., Reynolds, P.E., Rhode, E.B., editors. Arctic Refuge coastal plain terrestrial wildlife research summaries. U.S. Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001.
38. National Research Council. 2003. Cumulative environmental effects of oil and gas activities on Alaska's North Slope. National Academies Press, Washington D.C., USA. Pages 170-189.
39. Griffith, B., Douglas, D.C., Walsh, N.E., Young, D.D., McCabe, T.R., Russell, D.E., White, R.G., Cameron, R.D., Whitten, K.R. 2002. The Porcupine caribou herd. Pages 8-37 [In] Douglas, D.C., Reynolds, P.E., Rhode, E.B., editors. Arctic Refuge coastal plain terrestrial wildlife research summaries. U.S. Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001.

40. Walsh, N.E. B. Griffith, and T.R. McCabe. 1995. Evaluation of growth of the Porcupine caribou herd using a stochastic model. J. Wildl. Manage. 59(2):262-272.
41. Russell, D., and A. Gunn. 2019. Vulnerability analysis of the Porcupine Caribou Herd to potential development of the 1002 lands in the Arctic National Wildlife Refuge, Alaska. Report prepared for: Environment Yukon, Canadian Wildlife Service, and GNWT Department of Environment and Natural Resources. 143 pp.
42. Skoog, R.O. 1968. Ecology of the caribou (*Rangifer tarandus granti*) in Alaska. Ph.D Thesis., Univ. California, Berkely. 699pp.
43. Smith, W.T., and R.D. Cameron. 1985. Reactions of large groups of caribou to a pipeline corridor on the Arctic Coastal Plain of Alaska. Arctic 38:53-57.
44. National Research Council. 2003. Cumulative environmental effects of oil and gas activities on Alaska's north slope. P. 179
45. Russell, D., and A. Gunn. 2019. Vulnerability analysis of the Porcupine Caribou Herd to potential development of the 1002 lands in the Arctic National Wildlife Refuge, Alaska. Report prepared for: Environment Yukon, Canadian Wildlife Service, and GNWT Department of Environment and Natural Resources. P.46.
46. DEIS. Vol. I. 3-115.
47. Murie, O.J. 1935. Alaska-Yukon Caribou. N. Am. Fauna Ser. No. 54. U.S. Dept of Agriculture. 93pp.
48. Valkenburg, P., D.G. Kelleyhouse, J.L.Davis, and J.M.VerHoef. 1994. Case history of the Fortymile caribou herd, 1920–1990. Rangifer 14:11–22.
49. DEIS. Vol I. 3-159.
50. Map of PCH range (appended).

Terborgh, J. and James A. Estes. 2010. Trophic cascades. Island Press. Washington D.C. USA. Pages 353-367

[1] Roger Kaye 2006.

[2] BLM 2019.

[3] DEIS vol. I. 3-37

[4] USFWS 2015.

[5] DEIS vol. 1 3-120

[6] Walker et al. 2019.

[7] DEIS vol. I. 3-248&249.

[8] USDOl 1987. p. 165.

- [9] Smith. 2019.
- [10] DEIS vol.1, 3-105
- [11] Collins, G.L., and L. Sumner. 1952.
- [12] USFWS 2015.
- [13] Scott. 1952
- [14] Munro. 1952
- [15] Skoog et al. 1963
- [16] Roseneau et al. 1974
- [17] Clough et al. 1987
- [18] USFWS 2015
- [19] Caikowski. 2018
- [20] DEIS vol.II. p. 81.
- [21] Griffith et al 2002
- [22] Whitten et al. 1992.
- [23] DEIS vol. II. map B-1.
- [24] International Porcupine Caribou Board 1993.
- [25] Thayer, A. 1967
- [26] LeResche, R. 1972.
- [27] Arctic Gas Study reports 1971-77.
- [28] Russell and Gunn. 2019.
- 25 Russell and Gunn. 2019.
- [30] USFWS. 1986.
- [31] Cameron et al. 2005
- [32] White et al. 2014
- [33] Lenart, E.A. 2015.

- [34] Caikowski, J. 2017
- [35] Cameron, R.D. and K.R. Whitten. 1980.
- [36] Dau, J.R. and R.D. Cameron. 1986.
- [37] Cameron, R.D. et al. 2002.
- [38] National Research Council. 2003.
- [39] Griffith [et.al.](#) 2002.
- [40] Walsh [et.al.](#) 1995.
- [41] Russell, D. and A. Gunn. 2019.
- [42] Smith, W.T. and R.D. Cameron. 1985.
- [43] National Research Council. 2003.
- [44] Russell, D. and A. Gunn. 2019.
- [45] DEIS. Vol I. P. 3-115.
- [46] Skoog. 1968.
- [47] Murie. 1935.
- [48] Valkenberg et al. 1994.
- [49] DEIS. Vol I. 3-159.
- [50] Map of PCH range (appended)
- [51] Terborgh, J. and J.A. Estes. 2010.