

Nicole Hayes
Coastal Plain Oil and Gas Leasing Program EIS
222 West 7th Ave, Stop #13
Anchorage, AK 99513



CPAWS Yukon comments on the Draft Coastal Plain Oil and Gas Leasing Program EIS

Dear Ms Hayes,

The Yukon Chapter of the Canadian Parks and Wilderness Society (CPAWS Yukon) works alongside Indigenous peoples, outdoor enthusiasts, outfitters, hunters and members of many other diverse communities who believe in the protection of special wild places. The Coastal Plain of the Arctic National Wildlife Refuge is one such place. The Coastal Plain is the birthplace of the Porcupine caribou herd, which is immensely important on both sides of the border. Caribou are vital to the culture and subsistence ways of life in Gwich'in communities across the northern Yukon, Alaska and Northwest Territories.

This spring, CPAWS Yukon submitted substantive comments to the Bureau of Land Management — detailing many of the ecological, cultural, health and transboundary impacts in need of comprehensive analysis. CPAWS Yukon hoped that highlighting these issues would help the BLM ensure the completion of a thorough Draft Environmental Impact Statement (DEIS). Unfortunately, the DEIS falls well short of what was required of it. The term ‘transboundary’ does not appear once in DEIS or its appendices. The DEIS fails to acknowledge Indigenous communities within Canada when determining what communities may be “appreciably affected” by changes to the populations and patterns of the Porcupine caribou herd. The BLM downplays the importance of the coastal plain to the Porcupine caribou herd and fails to provide a quantitative analysis on the impacts of oil and gas activities on the Porcupine caribou herd. Throughout its review the BLM makes faulty assumptions and relies ineffective mitigation measures.

By not conducting a thorough environmental review, the BLM fails to provide decision makers and the public with an accurate picture of the environmental and social consequences of drilling in the Arctic National Wildlife Refuge. The BLM must return to the drawing board, and prepare a new DEIS that comprehensively addresses the impacts of oil and gas activities in the Arctic Refuge. CPAWS Yukon’s specific critiques of the DEIS follow.

Thank you,

Chris Rider
Executive Director, CPAWS Yukon

1. The DEIS does not adequately address the impacts of oil and gas activities on Indigenous communities within Canada.

The BLM acknowledges that Indigenous communities within Canada could be impacted by oil and gas activities on the Coastal Plain. According to the DEIS, “uses of PCH caribou (in terms of number harvested) by the NWT Gwich'in people, Vuntut Gwich'in people, and Inuvialuit user groups are comparable or higher, and communities associated with these user groups—Old Crow, Aklavik, and Fort McPherson—are in the PCH range; thus, these Canadian communities would be among the most likely to experience potential indirect impacts due to their proximity to and reliance on the PCH.”¹ However, when determining what communities may be ‘appreciably affected’ by changes to Porcupine caribou herd populations or movements, the DEIS fails to identify a single Indigenous community within Canada². The BLM’s failure to recognize ‘appreciable effects’ on these Indigenous communities ignores the wealth of traditional knowledge and number of concerns raised by Indigenous peoples that were available for the agency’s consideration.

Further, the DEIS does not consider any Indigenous communities as a ‘subsistence study community.’ While not comprehensive, the DEIS does provide some additional content on subsistence activities in these communities. According to the DEIS, “for the purposes of this analysis, there are four primary subsistence study communities: Kaktovik, Nuiqsut, Arctic Village, and Venetie. They are the closest to the program area and have subsistence uses in or near the program area or rely heavily on resources that use the program area.”³ It is demonstrably false that these are the four communities closest to the program area, as Old Crow is nearer to the Coastal Plain than Venetie. The BLM provides no rationale for excluding Old Crow from this analysis, as well as the other Indigenous communities within Canada that are close to the Coastal Plain and rely heavily on the Porcupine caribou herd.

By the BLM’s own admission, 85% of Porcupine caribou harvest takes place in Canada.⁴ It is clear that Indigenous communities within Canada would bear substantial impacts from any activities detrimental to the Porcupine caribou herd. By not comprehensively evaluating the impacts on Canadian communities the BLM is ignoring some of the most serious consequences from oil and gas activities within the Arctic Refuge.

The failure of the BLM to properly address subsistence impacts to Indigenous communities within Canada is disappointing, especially considering the numerous submissions the BLM received from members of communities such as Old Crow during the scoping period. The BLM should undertake a rigorous analysis of each Indigenous community that uses the Porcupine caribou herd. This analysis should evaluate the multitude of health, social, cultural and socio-economic impacts that could be experienced in these communities should oil and gas activities in the Coastal Plain proceed. This analysis should also address scenarios where the

¹ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-170.

² BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. Appendix E. See page E-3.

³ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-159.

⁴ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-168.

Porcupine caribou herd undergoes substantial declines owing to industrial development in their calving grounds.

2. The DEIS downplays the importance of the Coastal Plain to the Porcupine caribou herd.

The BLM understates the importance of the Coastal Plain for the Porcupine caribou herd throughout the DEIS. The DEIS considers ‘primary calving areas’ to be calving areas used at least 40% of years⁵. Using a high cut-off excludes areas that may be used less frequently for calving, but are nonetheless critical areas for years they are used. The BLM provides no justification for why the cut-off was chosen to be 40% of years, rather than 20% of years or 10% of years. The BLM is inconsistent in defining where these areas actually are. Without providing explanation, Maps 2-4 and 2-6 show ‘Porcupine caribou calving habitat’ as areas with different boundaries.

The BLM provides no reasoning on why it chose to emphasize ‘primary calving areas,’ rather than any area with evidence of calving. The BLM’s use of ‘primary calving areas’ ignores the importance of the Coastal Plain as post-calving habitat. Even in years when caribou calve to the east, caribou still congregate within the 1002 post calving to forage on nutritious plant growth and find insect relief. The entirety of the Coastal Plain is critical caribou habitat, not just areas the DEIS defines as ‘primary calving areas.’

In Appendix B the DEIS makes use of the vague term ‘caribou area,’ noting “in caribou areas, potential roads would be built on north-south and east-west orientations to the extent possible to limit interference with caribou migration.”⁶ The DEIS does not define what a ‘caribou area’ is. The reader must assume that if the DEIS considers some areas to be ‘caribou areas’ then other areas must be not caribou areas (otherwise the DEIS would have specified this mitigation measure as applying to the entirety of the project area). This is consistent with the DEIS’s failure to recognize that virtually all of the Coastal Plain is critical habitat for the Porcupine caribou herd.

3. The BLM underestimates displacement of caribou around oil and gas infrastructure.

As outlined above, the DEIS seriously understates the importance of the Coastal Plain to the Porcupine caribou herd. The DEIS also fails to grasp the scale of impacts the Porcupine caribou herd could suffer should development proceed.

The BLM makes faulty assumptions when projecting the zone of influence around oil and gas infrastructure. According to the DEIS, “studies of open-pit mines have recorded more extensive displacement of Bathurst caribou with a zone of influence extending 6.8–8.7 miles (Boulanger et al. 2012). A level of displacement of up to 2.49 miles observed at existing North Slope oil fields would be expected in the program area with similar development and mitigation design.”⁷

⁵ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 2-13.

⁶ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. Appendix B. See page B-13.

⁷ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-114.

Although not cited in this passage, the BLM is basing its 2.49 mile assumption off of observations of Central Arctic caribou from a single year that appear in an Conoco-Phillips funded report.⁸ This figure appears to be drawn from a single line in the report: “very few calves were observed within 2 km of [the Meltwater and Tarn roads] during the calving period and calf densities appeared to be reduced as far away as 4 km [2.49 miles].⁹” This appears to be an observation, not than a statistically tested finding. For comparison, the data on mine avoidance from the Bathurst caribou herd came through a combination of helicopter transects and satellite collar data, collected over ten and twelve years respectively.¹⁰ Authors of the Bathurst study generated results using multiple statistical tests, and published findings in a peer-reviewed journal. The DEIS fails to incorporate the Bathurst study’s findings on avoidance when determining the assumed zone of influence for oil and gas infrastructure on the Coastal Plain.

The 2.49 mile figure was also used by Griffith et al. in the USGS’s *Arctic Refuge Coastal Plain Terrestrial Wildlife Research Summaries*. However, Griffith et al. note that the 2.49 mile figure is a conservative estimate based on observations published in 1992.¹¹ The authors caution that in another study, “Central Arctic herd parturient females actually separated their calving areas from development infrastructure by approximately 7-8 km [4.35 - 4.97 miles].¹²”

The BLM fails to acknowledge that the 2.49 mile assumption is may understate displacement. Further, the BLM uses the 2.49 mile zone of influence assumption as a proxy for caribou avoidance around all types of oil and gas infrastructure. The Conoco-Phillips report cited by the BLM provides the 2.49 mile statistic as only an observation of caribou avoidance around roads. The BLM does not analyze data on caribou avoidance around pipelines, airstrips, satellite pads, central processing facilities or other types of oil and gas infrastructure, and instead applies the 2.49 mile statistic as a one-size fits all assumption.

The BLM also does not factor in harvest when assessing displacement. The DEIS acknowledges that “if roads, such as the Dalton Highway, connect to the road system and facilitate access by non-local hunters, then residents could experience increased competition from outsiders hunting in traditional subsistence use areas.¹³” However, the BLM fails to consider how harvest pressures could increase caribou avoidance around roads in the Coastal Plain.

⁸ Lawhead, B. E., A. K. Prichard, M. J. Macander, and M. Emers. 2004. Caribou Mitigation Monitoring Study for the Meltwater Project, 2003. Third annual report for ConocoPhillips Alaska, Inc., Anchorage, by ABR, Inc., Fairbanks.

⁹ Lawhead, B. E., A. K. Prichard, M. J. Macander, and M. Emers. 2004. Caribou Mitigation Monitoring Study for the Meltwater Project, 2003. Third annual report for ConocoPhillips Alaska, Inc., Anchorage, by ABR, Inc., Fairbanks. See page ii.

¹⁰ Boulanger, J., Poole, K. G., Gunn, A., & Wierzchowski, J. (2012). Estimating the zone of influence of industrial developments on wildlife: a migratory caribou Rangifer tarandus groenlandicus and diamond mine case study. *Wildlife Biology*, 18(2), 164-179.

¹¹ Griffith, D. B. et al. (2002). Section 3: The Porcupine Caribou Herd. Pp. 8–37. In: D. C. Douglas, P. E. Reynolds, and E. B. Rhode, editors. Arctic Refuge Coastal Plain Terrestrial Wildlife Research Summaries. US Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001.

¹² Griffith, D. B. et al.. (2002). Section 3: The Porcupine Caribou Herd. Pp. 8–37. In: D. C. Douglas, P. E. Reynolds, and E. B. Rhode, editors. Arctic Refuge Coastal Plain Terrestrial Wildlife Research Summaries. US Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001. See page. 31.

¹³ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-173.

The BLM could have considered data from the Porcupine caribou herd on avoidance. Johnson and Russell analyzed satellite collar data collected across 27 winters, finding that caribou avoid infrastructure and settlements by wide margins, but some avoidance behaviours decrease over time.¹⁴ For example, caribou avoided roads by 30 km across early years of the study and 18.5 kilometers across recent years of the study. Caribou avoided wells, winter roads and seismic lines by 11 km during early years and 6 km over late years, while avoidance of settlements exceeded 34 km throughout the study.¹⁵ The BLM fails to consider evidence from this study when assessing avoidance. The BLM's only citation of Johnson and Russell refers "some indication of habituation to infrastructure by PCH caribou during winter."¹⁶ The BLM is cherry picking its evidence: ignoring data showing that the Porcupine caribou herd avoids infrastructure by larger margins than accounted for in the BLM's zone of influence, and instead using the study to reference habituation.

Further, the BLM inference of habituation from the Johnson and Russell study is questionable. In their response to the DEIS on this specific point Russell and Gunn note "habituation is a special case of animal conditioning, a learned response by an individual to a repeated stimulus, for which identification requires long-term sequential measures of an individual's responses."¹⁷

The BLM's assumption that caribou would only avoid oil and gas infrastructure by 2.49 miles ignores evidence showing that the Porcupine caribou herd may be far more sensitive to disturbances. The BLM must re-do its assessment of zones of influence around oil infrastructure, using more a cautionary approach that assumes infrastructure would cause greater levels of displacement. The BLM must undertake a quantitative analysis of the impacts of oil and gas development on the Porcupine caribou herd, using revised zones of influence as part of its models.

4. The DEIS does not model the impacts of oil and gas activities on the Porcupine caribou herd.

The BLM fails to model for the population level impacts on the Porcupine caribou herd from oil and gas drilling on the Coastal Plain. The BLM refers to modelling by Griffith et al. that projected that calf survival could decline by 8% as result of oil and gas development within the

¹⁴ Johnson, C. J., & Russell, D. E. (2014). Long-term distribution responses of a migratory caribou herd to human disturbance. *Biological Conservation*, 177, 52-63.

¹⁵ Johnson, C. J., & Russell, D. E. (2014). Long-term distribution responses of a migratory caribou herd to human disturbance. *Biological Conservation*, 177, 52-63

¹⁶ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-114.

¹⁷ 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. See p 49.

calving grounds of the Porcupine caribou herd.¹⁸ However, the BLM appears to discount these findings because the study did not use the 2,000 acre surface development limit.¹⁹ Section 13 of this submission addresses the unreliability of the 2,000 acre claim. The DEIS concludes that “while the PCH caribou population size would continue to fluctuate, potential impacts to herd size as a result of displacement of maternal caribou would be negligible.”²⁰ The BLM fails to support this finding with any evidence, apart from a claim that calving caribou would be displaced from less than 4 percent of primary calving areas. The BLM does not consider displacement outside the ‘primary calving area’ or disruption to post-calving movements when coming to this conclusion.

The DEIS also states that “if development causes large-scale displacement from PCH calving grounds, then the herd could experience a decline in calf survival and stagnant herd growth.”²¹ The BLM seems to consider an end to herd growth to be the worst-case scenario for the Porcupine caribou herd from oil and gas drilling on the Coastal Plain. The DEIS does not consider a scenario where the Porcupine caribou herd undergoes a substantial decline. The failure of the BLM to model impacts of oil and gas activities on the Porcupine caribou herd, or envision a scenario where the herd falls into decline is among the most glaring oversights of the DEIS.

5. The DEIS does not provide adequate measures to mitigate the impacts of drilling.

The BLM places a great deal of faith in mitigation measures to alleviate the ecological and subsistence impacts of oil and gas drilling on the Coastal Plain. For example, for each development alternative the DEIS states “potential impacts on subsistence resources and access from future oil and gas exploration, development, and production would be minimal or would be adequately mitigated by stipulations or ROPs (Required Operating Procedures) under which lessees must operate.”²² However, the BLM provides little evidence on the effectiveness of these stipulations, or how such measures would be enforced.

The DEIS provides mitigations in the form of Required Operating Procedures, Timing Limitations and No Surface Occupancy. The BLM also states that certain lands would be subject only to ‘standard terms and conditions’ but fails to define what ‘standard terms and conditions’ means. Many of the lease stipulations offered in the DEIS are vague, or open to loopholes. For example, Lease Stipulation 9 supposedly protects coastal habitats, but under alternatives C, D1 and D2 the BLM would be permitted to “approve infrastructure necessary for oil and gas activities in these critical and sensitive coastal habitats.”²³ Under Alternative B the BLM is given

¹⁸ Griffith, D. B. et al. (2002). Section 3: The Porcupine Caribou Herd. Pp. 8–37. In: D. C. Douglas, P. E. Reynolds, and E. B. Rhode, editors. Arctic Refuge Coastal Plain Terrestrial Wildlife Research Summaries. US Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001.

¹⁹ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. Appendix E. See page E-9.

²⁰ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. Appendix E. See page E-9.

²¹ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-170.

²² BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See appendix E.

²³ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 2-15.

the vague requirement to “develop and implement an impact and conflict avoidance and monitoring plan to assess, minimize, and mitigate the effects of the infrastructure and its use on these coastal habitats and their use by wildlife and people.”²⁴

Lease Stipulation 6 claims that all lands on the Coastal Plain would be “managed to ensure unhindered movement of caribou²⁵” and directs the reader to Required Operating Procedure 23 for details on how such a feat would be achieved. The BLM claims that under ROP 23, “pipelines and roads would be designed to allow the free movement of caribou²⁶” The operating procedure stipulates that pipelines would be elevated at least 7 feet, pipelines and roads would be separated by 500 feet and infrastructure would be oriented so as not to impede caribou movements. The BLM fails to back up these stipulations with any evidence that they would be effective. Without supporting evidence, the claim that oil and gas activities could allow for the unhindered movement of caribou cannot be taken seriously.

Further, mitigation measures provided in the DEIS are non-binding. As the BLM concedes, “a stipulation included in an oil and gas lease would be subject to the following, as appropriate: [1] A waiver—A permanent exemption to a stipulation on a lease [2] An exception—A one-time exemption to a lease stipulation, determined on a case-by-case basis [3] A modification—A change attached to a lease stipulation, either temporarily or for the life of the lease.”²⁷ Decisions to waive, exempt or modify stipulations could be made by relatively low-level members of the federal bureaucracy. The BLM provides no information on how decisions to waive, exempt or modify stipulations would be made, whether opportunities for public participation would be offered, or what oversight would occur. The DEIS fails to provide evidence that proposed mitigation measures would effectively protect caribou or the fragile Arctic Refuge ecosystems. Without adequate supporting material, the public cannot appropriately evaluate these mitigations.

6. The DEIS fails to evaluate transboundary impacts of oil and gas activities on the Coastal Plain.

According to the Council on Environmental Quality, “agencies must include analysis of reasonably foreseeable transboundary effects of proposed actions in their analysis of proposed actions in the United States.”²⁸ The DEIS provides a superficial transboundary analysis, limited to an acknowledgement of Indigenous communities and other ‘user groups’ of the Porcupine caribou herd within Canada, one map, and several tables and figures showing Canadian caribou harvest data. The BLM fails to comprehensively analyze many of the important transboundary concerns brought to its attention during the scoping period. The term ‘transboundary’ does not even appear in the DEIS or its appendices.

²⁴ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 2-15.

²⁵ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 2-11.

²⁶ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 2-27.

²⁷ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 2-3.

²⁸ CEQ (1997). Council on Environmental Quality guidance on NEPA analysis for transboundary impacts. https://www.energy.gov/sites/prod/files/2014/08/f18/CEQTransboundaryGuidance_07_01_97.pdf

One of the stated purposes of the Arctic Refuge is “to fulfill the international treaty obligations of the United States with respect to fish and wildlife and their habitats.²⁹” The DEIS does not consider whether oil and gas leasing could breach the Porcupine Caribou Herd Conservation Agreement of 1987 between Canada and the United States. As stated by the agreement, parties are “[t]o conserve the Porcupine Caribou Herd and its habitat through international co-operation and co-ordination, so that the risk of irreversible damage or long-term adverse effects as a result of use of caribou or their habitat is minimized,” and “[w]here an activity in one country is determined to be likely to cause significant long-term adverse impact on the Porcupine Caribou Herd or its habitat, the other Party will be notified and given an opportunity to consult prior to final decision.³⁰” The DEIS acknowledges the treaty’s existence, but fails to consider how an oil and gas leasing program could violate its obligations under the treaty.

Parties are required to “promptly notify the Board (The International Porcupine Caribou Board, created under the treaty) of proposed activities that could significantly affect the conservation of the Porcupine Caribou Herd or its habitat and provide an opportunity to the Board to make recommendations.³¹” In its haste to prepare the DEIS, the BLM failed to give International Porcupine Caribou Board, ample time to issue recommendations on avoiding or effectively mitigating impacts on the Porcupine caribou herd.

The Porcupine caribou herd is one of the last healthy herds of barren ground caribou within Canada.³² The Porcupine caribou herd undertakes the longest migration of any terrestrial mammal on earth³³ and is integral to ecosystems across northern Canada. The BLM should evaluate trophic interactions within the ecosystems of northern Canada could be disrupted should populations or movements of the Porcupine caribou herd be substantially altered due to oil and gas activities on the Coastal Plain. The BLM does not provide sufficient information on how Indigenous peoples, hunters, outfitters, tour operators, outdoorspeople and photographers who use or enjoy the Porcupine caribou herd could be impacted by activities damaging to the herd.

Numerous scientific experts, Indigenous knowledge holders and members of the public have brought to the BLM’s attention that oil and gas activities on the Coastal Plain could have serious impacts on the Porcupine caribou herd. The BLM should provide a robust analysis of how oil and gas development would impact the United States’ international obligations to conserve the Porcupine caribou herd. The BLM should also provide what steps the U.S. Government has taken to fulfill its duties to consult with Canadian parties on decisions impacting the Porcupine caribou herd.

²⁹ See ANILCA s. 303

³⁰ Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd.

³¹ Agreement Between the Government of Canada and the Government of the United States of America on the Conservation of the Porcupine Caribou Herd.

³² COSEWIC. 2016. *COSEWIC assessment and status report on the Caribou Rangifer tarandus, Barren-ground population, in Canada*. Committee on the Status of Endangered Wildlife in Canada. Ottawa. xiii + 123 pp.

³³ Fancy, S. G., Pank, L. F., Whitten, K. R., & Regelin, W. L. (1989). Seasonal movements of caribou in arctic Alaska as determined by satellite. *Canadian Journal of Zoology*, 67(3), 644-650.

This spring, numerous Canadians took the time to participate in the scoping process. Over 15,000 Canadians voiced concerns to your agency this spring, among them over 500 Yukoners. Several Canadians even travelled to Fairbanks and Anchorage to testify at scoping hearings. The BLM also received submissions from the Governments of Canada, Yukon and the Northwest Territories, the Vuntut Gwitchin and Tr'ondek Hwech'in First Nations, the Inuvialuit Game Council, the Porcupine Caribou Management Board and numerous Canadian civil society organizations. Both the Government of Yukon and the Vuntut Gwitchin First Nation requested hearings to occur in Canada, a request that your agency denied. The BLM has not addressed many of the issues brought forward, especially related to the importance of the Porcupine caribou herd to Canada. The failure of BLM to seriously weigh the transboundary impacts is hugely disappointing, given the efforts many Canadians made to bring such issues to the BLM's attention.

7. The DEIS does not adequately address impacts on birds.

The BLM fails to quantitatively assess the impacts that oil and gas development on the Coastal Plain could have on birds. The DEIS is characterized by missing information, faulty assumptions and sloppy errors. Several bird names are misspelled, such as 'red-neck phalarope,' 'Peregrine Faon' and 'Gyrfaon.'³⁴ The BLM acknowledges some potential impacts of oil and gas development on birds, such as the attraction of nest predators to oil infrastructure, or the barges and dredging disturbing seabirds congregating in lagoons. Other impacts the BLM completely overlooks, such as industrial noise interfering with courtship or territorial vocalizations.

Many of the mitigations offered by BLM are extremely vague. For example, the BLM claims "potential effects on waterbirds would be minimized by using the shortest road routes and smallest pads and by placing gravel in uplands and well-drained habitats composed of moist and shrub tundra."³⁵ The BLM does not explain what protocols would be used to restrict the length of roads or the size of pads. The BLM states that the construction of oil and gas infrastructure is "unlikely to affect regional or global population sizes or nesting densities of breeding birds."³⁶ The BLM fails to support this claim with quantitative analysis of the impacts of oil and gas activities on birds. Without providing a quantitative assessment it is difficult for the public to scrutinize the BLM's findings.

The BLM states that while 320 acres of the Coastal Plain could be transformed into gravel mines, impacts on birds could be ameliorated by transforming used gravel pits into wetlands.³⁷ This fails to address the impacts of habitat loss on terrestrial birds. The BLM provides no supporting information on the effectiveness of building artificial wetlands out of abandoned gravel pits in tundra ecosystems. The BLM does not provide information on ecosystem function or trophic interactions on artificial tundra wetlands, and does not provide information on potential toxins or other lingering hazards that could adversely impact birds.

³⁴ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-88 & J-18

³⁵ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-95

³⁶ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-97.

³⁷ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-95

The BLM claims, without citation, that “potential salt-water [oil] spills would not be toxic to birds.” The BLM claims the risk of large oil spills would be low, but references spill history near Kaktovik, AK (an area with no history of major oil and gas developments: see table I-4) rather than the areas of the Alaska North Slope where oil and gas activities actually occurs. The DEIS should base its oil spill projections off of the history of spills around Prudhoe Bay and other comparable sites.

The BLM also downplays the impacts on waterbirds from the screeding (leveling) the floors of lagoons ahead of barge arrivals. The DEIS states “although high numbers of birds use the lagoons, they are highly mobile and likely would be able to move to adjacent similar areas if necessary.³⁸” The BLM does not consider how displacement from lagoons could impact stress levels among birds or cause them to waste energy. The BLM does not analyze how disturbance of lagoon ecosystems could disrupt foraging patterns, or lead to increased competition for resources in habitats where birds are displaced to. The BLM does not address potential impacts from screeding or dredging on fish, molluscs or other marine invertebrates fed upon by seabirds.

The BLM should provide quantitative evaluations of the potential impacts from oil and gas developments on birds. The BLM should also assess how oil and gas activities could impact populations of birds that migrate through Canada, especially the Buff-breasted Sandpiper, Red-necked Phalarope and Short-eared Owl, species listed under Canada’s *Species at Risk Act*.³⁹

8. The BLM does not adequately assess the impacts of oil and gas infrastructure on birds.

When projecting the zones of influence of oil and gas infrastructure the DEIS uses a displacement figure of 656 feet (200 metres). The BLM justifies this assumption by citing a meta-analysis conducted by Livezey et al. on ‘flight initiation distances’ (the distance from an intruder at which a bird flushes), drawn from bird species worldwide.⁴⁰ The Livezey study is not specific to oil and gas disturbances in tundra ecosystems, rather the paper synthesizes data from disturbances as varied as pedestrians, bicycles, farm vehicles, helicopters, artillery, dinghies and canoes.⁴¹ Livezey et al. emphasize that “estimating distances at which human activities adversely affect species of concern and delineating buffer areas to protect them require staff of federal and state agencies to justify precise distances (e.g., 50 m vs. 55 m). These are not abstract exercises—they directly determine how, when, and where these activities are permitted.⁴²”

³⁸ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-95

³⁹ Species at Risk Act, S.C. 2002, c. 29

⁴⁰ Livezey, K. B., Fernandez-Juricic, E., & Blumstein, D. T. (2016). Database of bird flight initiation distances to assist in estimating effects from human disturbance and delineating buffer areas. *Journal of Fish and Wildlife Management*, 7(1), 181-191.

⁴¹ Livezey, K. B., Fernandez-Juricic, E., & Blumstein, D. T. (2016). Database of bird flight initiation distances to assist in estimating effects from human disturbance and delineating buffer areas. *Journal of Fish and Wildlife Management*, 7(1), 181-191.

⁴² Livezey, K. B., Fernandez-Juricic, E., & Blumstein, D. T. (2016). Database of bird flight initiation distances to assist in estimating effects from human disturbance and delineating buffer areas. *Journal of Fish and Wildlife Management*, 7(1), 181-191. See page 183.

The BLM estimates zones of influence roughly — in contrast to recommendations from the authors of the flight initiation distance study. The BLM uses the 656 foot estimate as a one size fits all approach for all bird species, around all types of infrastructure. Further, the BLM does not quantify what types of impacts could occur, or define what it sees as an acceptable level of disturbance. Instead the BLM uses the 656 foot figure as a vague estimate of where impacts could occur.

There is evidence that for some tundra-nesting birds, the zones of influence around oil infrastructure is far greater than 656 feet — due largely to predator subsidization near certain types of infrastructure. Liebzeit et al. found that nest survival rates of songbirds (primarily Lapland Longspurs), decline within 5 kilometers (3.1 miles) of oil infrastructure on the North Slope of Alaska. The study further found that for songbirds, “a nest’s instantaneous probability of survival decreased rapidly within ~ 1 km of high-value structures.”⁴³ The study did not find nest survival rates for shorebirds as a whole to decline in proximity to oil infrastructure. However, Red and Red-necked Phalaropes, (the latter listed under Canada’s *Species at Risk Act*) did show declining nest survival rates close to infrastructure.⁴⁴ The BLM briefly cites the 3.1 mile figure in the DEIS, but did not consider this as evidence when determining the zone of influence around oil and gas infrastructure. The BLM provides no justification for why it chose not to consider Liebzeit’s findings while estimating zones of influence. The Liebzeit study was conducted in oil fields on the North Slope of Alaska, and should provide a more appropriate indication of zones of influence around oil infrastructure than the Livezey study.

The BLM should redo its zone of influence analysis. A thorough analysis should a) use species or family-specific zones of influence around oil infrastructure, b) wherever possible base assumptions off of studies on avian responses to oil and gas infrastructure in tundra ecosystems (such as the Liebzeit study), and c) provide quantitative analysis of potential impacts, such as estimating the number of nest failures that could result from predator subsidization around oil and gas infrastructure.

9. Every scenario is results in major industrial development on the Coastal Plain.

Scenarios B, C, D1 and D2 would each result in major industrial development within the Coastal Plain. Each scenario offers more of the Coastal Plain for lease sales than what was required under PL 115-97. According to the tax bill, the DOI must offer two lease sales of at least 400,000 acres. Scenarios B and C offer virtually the entirety of the Coastal Plain for leasing, approximately 1.5 million acres, and close to double the amount of land required under, while Scenario D offer approximately one million acres for leasing. The BLM is clearly prioritizing oil and gas extraction over the ecological and cultural values of the Arctic National Wildlife Refuge.

⁴³ Liebzeit, J. R., Kendall, S. J., Brown, S., Johnson, C. B., Martin, P., McDonald, T. L., ... & Zack, S. (2009). Influence of human development and predators on nest survival of tundra birds, Arctic Coastal Plain, Alaska. *Ecological Applications*, 19(6), 1628-1644. See page 1637.

⁴⁴ Liebzeit, J. R., Kendall, S. J., Brown, S., Johnson, C. B., Martin, P., McDonald, T. L., ... & Zack, S. (2009). Influence of human development and predators on nest survival of tundra birds, Arctic Coastal Plain, Alaska. *Ecological Applications*, 19(6), 1628-1644.

The BLM has failed to consider reasonable alternatives to these major development scenarios. The BLM errs in making the assumption that 800,000 acres is the minimum acreage required to be offered for leasing under PL 115-97. Given the vast majority of acres offered in recent North Slope lease sales have not been bid on, the BLM could reasonably expect to be able to repackage acres not sold during a first lease sale and offer them in a second. This would allow the BLM to offer 400,000 acres in separate lease sales, while offering substantially less than 800,000 acres in total. While CPAWS Yukon would oppose any development scenario for the Arctic Refuge, the BLM's failure to consider low-acreage scenarios in the DEIS is nonetheless a major failing.

The DEIS also does not address the potential for development to creep should an industrial foothold be established on the Coastal Plain. The existence of oil and gas infrastructure on the Coastal Plain would make additional development more economical, which could lead to pressure to allow for even more industrialization of the Arctic Refuge. The BLM is in the process of rewriting the Integrated Activity Plan for the NPRA⁴⁵ — a reminder that areas that were previously set aside from development may be reopened in the future. The BLM should assess the impacts of potential scenarios where the 2,000 acre limit is repealed or the footprint of development otherwise spread.

10. The DEIS fails to address SAExploration's seismic proposal.

While P.L. 115-97 authorized a leasing program for the Coastal Plain of the Arctic National Wildlife Refuge, the legislation makes no specific allowance for seismic testing. Previous attempts by the State of Alaska to conduct seismic surveys in the Arctic Refuge were rejected by former Secretary of the Interior Sally Jewell and the U.S. District Court, District of Alaska, who agreed that provisions under ANILCA for seismic testing in the 1002 lands sunset during the 1980s^{46,47}. The BLM has not indicated what it sees as the legal basis for authorizing seismic activities within the Coastal Plain.

The DEIS does not consider the impacts from pre-leasing seismic activities, as proposed by SAExploration LLC. Pre-leasing seismic testing is a piece of the overall push for development in the Arctic Refuge associated with leasing, and as a result should be evaluated as part of the Coastal Plain Leasing EIS process. The BLM also fails to address how SAExploration's proposal to conduct seismic testing over the entirety of the Coastal Plain (including areas not available for leasing under Scenario D) could pre-determine an outcome.

11. The DEIS does not consider how oil and gas leasing would impact the conservation purposes of the Arctic National Wildlife Refuge.

As outlined in PLO-2214 and ANILCA 303, the Arctic National Wildlife Refuge has seven overarching conservation purposes, including preserving wildlife, wilderness and recreational values, conserving fish and wildlife populations and their habitats, fulfilling the international

⁴⁵ BLM (n.d.) National Petroleum Reserve in Alaska IAP/EIS (Web Page). Retrieved from: <https://www.blm.gov/planning-and-nepa/plans-in-development/alaska/npr-a-iap-eis>

⁴⁶Gutierrez, D. (10 July, 2013). State Presents New Plan For ANWR Development. *Alaska Public Radio Network*.

⁴⁷Demer, L. (22 July, 2015). U.S judge rejects push to open ANWR. *Alaska Dispatch News*.

treaty obligations of the United States for the protection of fish and wildlife, providing for continued subsistence uses, and ensuring the refuge's water quality and quantity.⁴⁸ PL 115-97 amends ANILCA s. 303 by adding the provision of an oil and gas program as a purpose of the Arctic National Wildlife Refuge.⁴⁹

The DEIS fails to evaluate how oil and gas activities would impact the original conservation and subsistence purposes of the Arctic National Wildlife Refuge. The Fish and Wildlife Service states “[p]urposes dealing with the conservation, management, and restoration of fish, wildlife, and plants and the habitats on which they depend take precedence over other purposes in the management and administration of a refuge unless otherwise indicated in the establishing law, order, or other legal document.”⁵⁰ The BLM fails to acknowledge that the seven conservation purposes of the Arctic National Wildlife Refuge take precedence over an oil and gas leasing purpose, or explain what measures it would take to effectively safeguard the conservation purposes of the Refuge.

12. The DEIS fails to support many of its statements with citations.

Citations are glaringly absent in sections of the DEIS. By failing to reference many of the statements made in the DEIS, the BLM makes it difficult for the public to verify the claims being made. For example, the DEIS claims without citation that:

- That Arctic sea ice cover reached a maximum in 1977 due to the Pacific Decadal Oscillation (page 79).
- That the global biosphere is gaining mass due to rising carbon dioxide emissions (page 74).
- That some birds could benefit under climate change from an expansion of coastal habitats (page 3-91).
- That oil spills on the tundra or in water are extremely rare, as are spills exceeding 10,000 gallons (page 3-99).
- That potential marine oil spills would not be toxic to birds (page 3-99).
- That timing limitations effectively mitigate the majority of impacts to caribou (Appendix E, page E-8).

In other cases, the DEIS provides cross-references to research compiled in other reports rather than providing original material. In some cases these cross-reference reports can be impossible to readily find. For instance, the Bureau of Ocean and Energy Management *Market Substitutions and Greenhouse Gas Downstream Emissions Estimates for BLM's Coastal Plain Project* does not appear to be available on the BOEM website. The difficulty of finding documents such as this makes it difficult for the public to verify certain statements made in the DEIS, such as the claim that 96% of oil produced from the Coastal Plain would replace U.S. and global oil production.

⁴⁸ See PLO-2214 & ANILCA s. 303

⁴⁹ See PL 115-97 s. 20001

⁵⁰ U.S. Fish and Wildlife Service, 601 FW 1, 1.15, National Wildlife Refuge System Mission and Goals and Refuge Purposes (July 26, 2006). Retrieved from: <https://www.fws.gov/policy/601fw1.html>.

13. The use of the 2,000 acre claim in the DEIS is misleading.

The claim that surface disturbance related to oil and gas activities would be limited to 2,000 acres is a red herring. The BLM defines surface disturbance by a narrow and arbitrary definition, excluding ice roads, seismic activities and gravel quarries, and only counting disturbance from pipelines where supports touch the ground. Under the 2,000 acre limit roads, pipelines, airstrips and satellite wells would radiate across the tundra; fragmenting ecosystems, interrupting caribou movements, and creating new zones of disturbance. Using the 2,000 acre claim to minimize the impacts of drilling is like claiming that spider webs cannot snare insects, because the individual strands that compose a web are miniscule.

The 2,000 acre claim has been a popular talking point for drilling advocates since being coined by a BP representative in 1995.⁵¹ The BLM is contorting its definition of surface disturbance so as to allow for maximum development within the 2,000 acre parameters. For instance, the BLM interprets the 2,000 acre limit as a rolling limit, allowing for ‘reclaimed’ sites to be removed from the ledger and new sites added. Unfortunately, fragile Arctic ecosystems can take generations to recover. For instance, scars from 1980s era seismic testing are still visible on the coastal plain. The DEIS fails to provide comprehensive analysis on how reclamation would occur, how long reclamation would take, and what metrics would be used to evaluate the successfulness of reclamation. Further, PL 115-97 states the Secretary shall “authorize up to 2,000 surface acres of federal land on the Coastal Plain to be covered by production and support facilities during the term of the leases under the oil and gas program.”⁵² The language in PL 115-97 is clear that the 2000 acre limit applies to the cumulative acreage that may be covered during the entire time frame of the program, not during a snapshot in time. It is inappropriate for the BLM to allow for roll-over on the 2,000 acre limit.

In an arbitrary interpretation, the BLM excludes gravel quarries from the 2,000 acre limit, arguing that quarries do not constitute a “support facility” for oil and gas infrastructure. The BLM insists that since gravel quarries only provide raw materials, they are no more a support facility than a mill that provides steel.⁵³ The BLM undermines this interpretation by later including a seawater treatment facility within the 2,000 acre definition. Like gravel quarries and steel mills, a seawater treatment facility would provide raw materials to support oil and gas activities. Quarries would provide essential materials for oil and gas activities and would not exist in the Arctic Refuge without the existence of a leasing program. The exclusion of quarries from the 2,000 acre disturbance limit also mislead the public to the extent of damage under the leasing program. According to the DEIS gravel mining could encompass approximately 300 acres of tundra. The BLM must define quarries as a support facility and include them within the 2000 acre limit.

⁵¹ Cole, D. (May 21, 2018). Busting the 2,000-acre myth about drilling in Alaska’s Arctic refuge. Arctic Today. Retrieved from: <http://www.arctictoday.com>

⁵² See PL 115-97 s. 20001

⁵³ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page I-6.

The BLM also excludes snow and ice roads from the 2,000 acre limit, owing to their “fleeting existence⁵⁴”. The impacts from ice roads would not be fleeting, since a) the Arctic experiences a prolonged winter and the ice road season accounts for a substantial portion of each year, and b) ice roads draw large quantities of fresh water and can leave residual impacts beyond the winter season. The BLM admits the “inclusion of [facilities constructed with snow and ice] would make Congress’s clear purpose – establishment of an oil and gas program on the Coastal Plain – impracticable⁵⁵.”

The BLM’s use of the 2,000 acre claim is an attempt to allow drilling proponents to have their cake and eat it too — at one hand using the claim to downplay the environmental impacts of drilling, yet at the same time using arbitrary interpretations to maximize the amount of industrial activities that could fall within the 2,000 acre parameters.

Egregiously, the DEIS references the 2,000 acre claim as a reason for discounting a USGS study modelling the impacts of oil and gas activities on caribou calf mortality. The DEIS acknowledges the study’s findings, but then states that the study did not use the 2,000 acre figure and claims that oil and gas activities would cause minimal displacement of maternal caribou.⁵⁶ The BLM concludes the paragraph by stating that “while the PCH caribou population size would continue to fluctuate, potential impacts to herd size as a result of displacement of maternal caribou would be negligible.⁵⁷”

The BLM should acknowledge that the history of 2,000 acre claim as a longstanding tactic by proponents of drilling in the Arctic Refuge to understate impacts. Given the arbitrary and misleading nature of the 2,000 acre claim, it is irresponsible for the BLM to use the figure as part of any ecological evaluations on the impacts of oil and gas development on the Coastal Plain.

14. The DEIS does not adequately address the climate ramifications of oil and gas activities in the Arctic Refuge.

In order to achieve global efforts to limit global mean temperature rise to 2 °C, approximately eighty percent of worldwide fossil fuel reserves must remain unburned.⁵⁸ According to a prominent study published in *Nature*, “development of resources in the Arctic and any increase in unconventional oil production are incommensurate with efforts to limit average global warming to 2 °C.⁵⁹” The BLM provides no analysis on how the direct and indirect emissions associated with oil and gas drilling in the Arctic Refuge would influence global efforts to avert 2 °C of warming.

⁵⁴ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page I-6.

⁵⁵ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page I-6.

⁵⁶ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. Appendix E. See page E-9.

⁵⁷ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. Appendix E. See page E-9.

⁵⁸ Leaton, J. (2012). *Unburnable carbon—Are the world’s financial markets carrying a carbon bubble?* London: Carbon Tracker Initiative.

⁵⁹ McGlade, C., & Ekins, P. (2015). The geographical distribution of fossil fuels unused when limiting global warming to 2°C. *Nature*, 517(7533), 187

The BLM's statements on climate change are filled with red herrings. For instance, the DEIS states that "climate change can be driven by natural forces, such as volcanic activity, solar output variability, and the earth's orbital variations, or by human activity, such as land use changes or GHG emissions."⁶⁰ The BLM fails to acknowledge that current climate crisis is being overwhelmingly driven by anthropogenic greenhouse gas emissions. The DEIS also states that "much attention in recent decades has focused on the potential climate change effects of GHGs, especially carbon dioxide (CO₂), which has been increasing in concentration in the global atmosphere since the end of the last ice age."⁶¹ While not inaccurate, this statement utterly misses the point. The degree to which carbon dioxide concentrations have increased over the past one hundred years is greater than the increase over the previous ten thousand years.^{62,63} The language used by the BLM is not consistent with the urgency of climate change.

15. The DEIS does not provide passable cumulative impacts assessments.

The BLM must take a hard look at cumulative impacts. According to *Klamath Siskiyou Wildlands Center v. BLM*, "general statements about possible effects and some risk" are not adequate.⁶⁴ The cumulative impacts assessments provided in the DEIS are extremely cursory. In most cases the BLM merely acknowledges that cumulative impacts would exist and identifies some sources of impacts. For example, the section on cumulative impacts on polar bears offers just one sentence on climate change: "the effects of climate change described under *Affected Environment* above, could influence the rate or degree of the potential cumulative impacts."⁶⁵ Superficial overviews is such as this are wholly inadequate.

There is no dedicated cumulative impacts analysis on the Porcupine caribou herd. The cumulative impacts section lumps all terrestrial mammals. Different species experience impacts differently and lumping caribou, bears, foxes, muskox and lemmings into a single category is unacceptable. Similarly, the BLM does not distinguish between bird species during its cursory section on cumulative impacts.

The cumulative impacts section on terrestrial mammals is a mere five sentences long. In addition to providing standalone assessments for different species, the BLM should go into far greater depth when assessing cumulative impacts. As an example, a robust assessment on the Porcupine caribou herd should assess how oil and gas activity on the Coastal Plain would interact with other factors such as climate change impacts (e.g. vegetation change, earlier insect hatch, snow patterns and rain-on-snow events), natural populations cycles, harvest, and development pressures elsewhere in the herd's range. The BLM should model for these parameters and

⁶⁰ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-2.

⁶¹ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-2.

⁶² Shakun, Jeremy D., et al. "Global warming preceded by increasing carbon dioxide concentrations during the last deglaciation." *Nature* 484.7392 (2012): 49.

⁶³ Pachauri, R. K., Allen, M. R., Barros, V. R., Broome, J., Cramer, W., Christ, R., ... & Dubash, N. K. (2014). *Climate change 2014: synthesis report. Contribution of Working Groups I, II and III to the fifth assessment report of the Intergovernmental Panel on Climate Change* (p. 151). IPCC.

⁶⁴ *Klamath Siskiyou Wildlands Center v. BLM*, 387 F.3d 989, 995 (9th Cir. 2004).

⁶⁵ BLM (2018). Coastal Plain Oil and Gas Leasing Program Draft Environmental Impact Statement. See page 3-149.

provide population outcomes under varying scenarios. The BLM should use a similar approach for all cumulative impacts assessments.

16. The DEIS is missing information required to make informed decisions.

Much of the BLM's analysis on the impacts of oil and gas activities on the Porcupine caribou herd is based on data from the Central Arctic herd, such as assumptions on caribou avoidance around oil and gas infrastructure. As the USGS points out, the Porcupine caribou herd and the Central Arctic herd do not "constitute a good ecological comparison."⁶⁶

The BLM is required to take reasonable steps to address information gaps on significant impacts. According to 40 C.F.R. § 1502.22, "if the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement."⁶⁷

17. The BLM has not provided adequate opportunities for public comment.

The BLM did not properly compensate for the impact of the federal shutdown on the public comment period. It was not possible for the BLM to oversee legitimate public consultations while the U.S. Government remained shut down, and BLM staff are unavailable to answer questions or provide information. For example, one Kaktovik resident who is highly engaged on the Arctic Refuge was not aware of the release of the DEIS or the existence of the public comment period until approximately four weeks after the release of the DEIS.⁶⁸ Meetings were hastily scheduled following the re-opening of the government, yet some communities were not given adequate notice (Fairbanks was given two business days of warning prior the hearing). The BLM turned down requests to hold public hearings in Canada, where some of the communities that stand to be most impacted by oil and gas activities in the Arctic Refuge exist. In addition the BLM failed to honor the request of many environmental and Indigenous groups to extend the comment period by an additional 77 days, to lengthen the opportunity for public engagement.

18. The DEIS fails to address many of the issues previously raised by CPAWS Yukon.

CPAWS Yukon provided the BLM with substantive comments during the scoping period. Many of the important issues brought to your attention were not comprehensively addressed in the DEIS, or were not addressed at all. Below is a partial list of the issues raised by CPAWS Yukon that the DEIS has not adequately responded to. Please refer back to our scoping comments for the full evaluation of issues.

⁶⁶ Griffith, D. B. et al. (2002). Section 3: The Porcupine Caribou Herd. Pp. 8–37. In: D. C. Douglas, P. E. Reynolds, and E. B. Rhode, editors. Arctic Refuge Coastal Plain Terrestrial Wildlife Research Summaries. US Geological Survey, Biological Resources Division, Biological Science Report USGS/BRD/BSR-2002-0001. See page 29.

⁶⁷ 40 C.F.R. § 1502.22

⁶⁸ Robert Thompson, pers. comm. January 16th, 2019 (phone call).

- Potential declines in caribou calf survival and declines in Porcupine caribou herd populations as a whole, associated with different scenarios for oil and gas development.
- Potential impacts on the Porcupine caribou herd should oil and gas activities coincide with the natural decline phase of the population cycle.
- Which monitoring tools would be used to distinguish natural fluctuations in Porcupine caribou herd populations from declines associated with oil and gas activities on the Coastal Plain.
- Potential indirect effects of oil and gas drilling in the Coastal Plain on the predator and scavenger species that rely on Porcupine caribou.
- The yearly per-family cost in Old Crow of replacing caribou meat with store-bought foods of equal nutrition.
- A comprehensive socio-economic assessment of the impacts of potential declines of the Porcupine caribou herd on Indigenous peoples within Canada.
- What, if any efforts the Bureau of Land Management has taken to seek the free, prior and informed consent of Indigenous communities over the proposed oil and gas activities within the Arctic Refuge.
- What, if any efforts the Bureau of Land Management has taken to comply with the United Nations Declaration on the Rights of Indigenous Peoples.
- What, if any measures the Bureau of Land Management has taken to consult with Canadian scientists, policy makers and Indigenous peoples over the impacts of oil and gas activities on bird species that migrate through Canada.
- The known nesting locations of Arctic Refuge bird species listed under Canada's Species at Risk Act.
- How oil and gas activities within the breeding grounds of migratory bird species may exacerbate the cumulative impacts of disturbances already experienced along migratory routes and in winter habitats (i.e. a robust cumulative effects analysis for migratory birds).
- Known movements of polar bears between the Coastal Plain of the Arctic National Wildlife Refuge and the western Beaufort Sea region of Canada. Analysis of potential impacts of oil and gas activities on the Coastal Plain on polar bear populations within Canada.
- What steps, if any the Bureau of Land Management has taken to consult with Canadian scientists, policy makers and Indigenous peoples over the impacts of oil and gas activities on caribou and polar bears.
- Analysis of potential transboundary impacts of the proposed oil and gas leasing program on Canadian marine ecosystems, including the spread of pollutants, potential oil spills and the risk of bioaccumulation and biomagnification.
- A full life cycle analysis of greenhouse gas emissions projections corresponding to a range of scenarios for possible recoverable oil and gas reserves in the Arctic National Wildlife Refuge. (Including life cycle accounting of the potential upstream and downstream emissions associated with exploration, production and combustion of fossil fuel reserves).
- Analysis of the implications from potential oil and gas activities in the Arctic Refuge on state, federal and global efforts to reduce greenhouse gas emissions.

This submission was researched and written by Malkolm Boothroyd, CPAWS Yukon Campaigns Coordinator.