THE WILDLIFE SOCIETY
ALASKA CHAPTER

The Alaska Chapter of The Wildlife Society strives to enhance the ability of wildlife professionals to conserve biological diversity, sustain productivity, and ensure responsible use of wildlife resources in Alaska for the benefit of society.

October 24, 2019

Secretary David Bernhardt
Department of the Interior
Attn: Willow MDP DEIS Comments
222 West 7th Ave, Stop #13
Anchorage, AK, 99513-7504

Re: Alaska Chapter of The Wildlife Society Comments on the Draft Environmental Impact Statement for the Willow Master Development Plan

Dear Secretary Bernhardt,

This letter represents the Alaska Chapter of The Wildlife Society's public comments on the Draft Environmental Impact Statement (DEIS) for the Willow Master Development Plan. The Wildlife Society (TWS) was founded in 1937 and is a non-profit scientific and educational association of over 15,000 professional wildlife biologists and managers, dedicated to excellence in wildlife stewardship through science and education. Our mission is to inspire, empower and enable wildlife professionals to sustain wildlife populations and habitats through science-based management and conservation. Our professional membership represents and serves the community of scientists, managers, educators, technicians, planners and others who work actively to study, manage and conserve wildlife and its habitats worldwide. The Alaska Chapter of TWS has about 200 members in Alaska representing wildlife scientists and resource managers including those working for state and federal agencies, Native organizations, universities, non-profit groups and consulting biologists.

These comments focus primarily on the DEIS analysis of caribou, and how the DEIS frames the alternatives, analyzes impacts, is responsive to scoping, addresses climate-change effects, provides for monitoring and mitigation, and analyzes ability to meet the subsistence requirements under ANILCA, section 810. We focus on caribou because that appears to be the main driver for development of alternatives C and D. Caribou are a critically important subsistence resource for the two communities on Alaska's North Slope most affected by this project—Nuiqsut and Utqiagvik. Finally, there has been a substantial amount of research conducted on caribou on the North slope, much of it involving members of our professional organization.

The thrust of our comments, concerns, and recommendations could be similarly applied to other wildlife, including bears, other furbearers, and birds—especially waterfowl which are an important subsistence resource not only on the North Slope, but are a valuable wildlife resource to hunters across the Nation.

I. Range of Alternatives

The DEIS incudes 3 action alternatives—one developed by Conoco-Phillips Alaska (Alt B), and two (alts C and D) with modifications intended to:

1. Reduce the overall Project footprint (i.e., direct impacts from facilities)

2. Reduce potential human health impacts (especially those relating to air quality and subsistence), and
3. Reduce impacts to wildlife, subsistence resources (especially caribou), and subsistence use areas.

We find the number and range of alternatives to be unduly narrow. The proposed action would extract the same amount of oil (~590 million barrels) from the same number of drill sites (5) at the same locations, across all alternatives. All of the action alternatives include 2 drilling sites and associated infrastructure (BT-2 and BT-4) within the Teshekpuk Lake Special Area (TLSA)—an area of high sensitivity and concern. The project life is the same across alternatives (30 - 32 years) and the permanent infrastructure is similar across all action alternatives. For example, the gravel footprint is similar (411 - 489 ac), the miles of gravel roads is similar (28.3 - 38.2 mi), the length of pipeline rack is similar (95.6 - 95.7 mi), the number of stream crossings is similar (14 - 18), and the required number of bridges is similar (6 - 7). The associated greenhouse gas emissions for each alternative are essentially the same (261,419 - 263,816 metric tons). A number of issues raised in public scoping comments could have been addressed, or evaluated, by including one or more conservation-oriented alternatives. Features of those alternatives could include strengthened BMPs for caribou and other wildlife, fewer drill sites (accessing same oil using directional drilling), and a significantly smaller gravel footprint and infrastructure.

II. Quantifying Impacts on Caribou

Table ES.1 offers a summary comparison of key impacts by alternative. Although caribou are an important resource that drove alternative development (C and D), one cannot discern from this table how caribou are going to be affected in a quantitative sense. If the proposed development will have a significant impact on the ability of Nuiqsut residents to harvest caribou, will it simply take another few days to harvest what they need, or might they only harvest half of what they need? How are caribou populations and distribution likely to change in 10 years, 30 years, or 50 years given cumulative impacts of this and other developments, along with climate change? The DEIS is silent on such questions.

BLM does identify features in each alternative that are arguably "better" for caribou in some qualitative sense. We can perhaps rank-order the alternatives with respect to caribou welfare (e.g., D is better than C is better than B—although even that is not certain). But the DEIS falls far short of displaying how caribou numbers and distribution might change, and how that will affect harvest opportunity today and in the future. A quantitative analysis would better inform the public, and improve the subsistence analysis required by ANILCA.

Such quantitative analyses involve a fair amount of work, but the development of scientifically defensible models has already been accomplished for caribou on the North Slope. Russell and Gunn (2019) recently quantified the impacts of proposed oil and gas development on caribou populations in the 1002 area of the Arctic National Wildlife refuge. The report concluded:

1. The potential impacts, under average climate, were 19% higher risk of a herd decline with 1002 development after 10 years when the starting herd size was the current size (218,000). The risk increased to 26% if the starting herd size was similar to population estimates in the early 1970s (100,000 caribou).
2. The risk to the Porcupine Caribou Herd from 1002 development affects the subsistence role of caribou in the lives of aboriginal people. With an initial herd size of 100,000 and average climate there was a 23% higher risk that herd size would fall below thresholds requiring severe harvest restrictions.

The amount and quality of data on the Teshekpuk Caribou Herd (TCH) and the Central Arctic Caribou Herd is similar to that existing for the Porcupine Caribou Herd in the Arctic Refuge and Canada. The same model, or one similar, could be used to generate quantitative projections for how each of the three action alternatives is likely to affect caribou numbers, distribution, and harvest by residents of Nuiqsut and Utqiagvik. The FEIS should consider including a quantitative analysis along these lines.

III. Response to scoping

We reviewed the scoping comments received and found many of them to be specific, insightful and well-articulated. Below we list some of the specific requests made by commenters relative to caribou (in italics, as copied from the DEIS). We follow those with our own assessment of how well the DEIS addressed the issue. This is a qualitative assessment, offered as a possible guide for strengthening the discussion/analysis of these important elements in the Final EIS.

1. *Commenters requested that the EIS evaluate potential adverse effects of air/ground traffic, blasting/mining activities, and project infrastructure (including roads, gravel island, haul routes, gravel mine, or pipelines) on caribou migration patterns and other species of wildlife, and the resulting impacts to subsistence hunting, fishing, or whaling, especially for the Nuiqsut community. Nuiqsut community members requested that mitigation should be provided for any adverse impacts to Nuiqsut subsistence hunting.*

   We believe the DEIS does a good job of reviewing pertinent literature and describing the ecology of the species and how infrastructure and development activities may affect caribou. The effects of the alternatives on caribou populations, however, (future numbers, trends, and related subsistence harvest) is vague and somewhat muddled. Should Nuiqsut residents be worried, or not? How will it specifically impact their hunting? Will the BMPs be broadly applied, and how effective will those be as mitigation? These questions are poorly answered in the DEIS. In subsequent comment, we suggest ways to improve.

2. *Commenters requested that at least one alternative be developed and evaluated in the EIS that is specifically aimed at minimizing impacts to caribou, such as modifying some of the infield road alignments to run parallel, instead of perpendicular, to caribou migration patterns, or an elevated loop system to reduce caribou deflection.*

   It appears two of the alternatives (C and D) were developed with some forethought to minimizing impacts on caribou. The main difference among alternatives appears to be how different elements of the development are linked together (ice road versus gravel road, and road transport versus air transport). Unfortunately, the DEIS sends mixed signals about whether these "caribou-friendly" alternatives really benefit caribou. For example, the DEIS offers the following conclusion about Alternative D:

   > "Effects to subsistence, sociocultural systems, and public health under Alternative D would be similar to those described under Alternative B. This alternative would have the least impact to caribou availability. This would eliminate the potential for subsistence harvesters to access new areas via road and would increase the level of air traffic, adding to the adverse effects. The effects on subsistence, sociocultural systems, and public health *may be highly adverse* (emphasis added) and would be disproportionately borne by the Nuiqsut population." (3.17.3.5)

   If alternative D (fewest roads, smallest footprint) and alternative B (the Conoco Phillips alternative) will have similar effects on subsistence, and those effects are painted as potentially "highly adverse," what possible alternative should a concerned caribou hunter in Nuiqsut be drawn to? Is there any meaningful difference among any of the three action alternatives? If not, as this conclusion suggests, the requirements of a meaningful NEPA analysis has not been satisfied.

3. *Commenters requested that the EIS evaluate potential impacts to wetlands and caribou and other wildlife species and habitats within the TLSA, and any resulting subsistence impacts to North Slope communities. Respondents stated that the EIS should also describe protections for the TLSA and how the project complies with applicable use or development restrictions.*

   We find the DEIS provides a fairly comprehensive review of pertinent literature on caribou natural history and research related to effects of development. The treatment of other species is less complete, perhaps understandably given administrative dictates on document length. We had some confusion over which areas operated under which BMPs, but that should be easily clarified in the FEIS. Appendix D provides a list of expected

exemptions from BMPs. We would like to see BLM and Conoco Phillips commit to tracking compliance with BMPs, and identify any deviations in a publically accessible database.

4. *Commenters requested that the EIS consider long-term and cumulative effects of climate change, including potential changes in weather, vegetation, seismic activity, or sea-level rise/flooding. In addition, commenters requested that the EIS discuss the relationship between thermokarst and climate change and how this might have a cumulative effect on environmental resources when combined with project-related impacts.*

   The DEIS Section 3.2 offers a good description of how climate change is affecting snow and ice-cover, precipitation, and air-temperature and the active layer. There is much less discussion about how climate change is likely to affect habitat (vegetation) and wildlife (nutritionally by changes in vegetation, and timing mismatch). These impacts are reasonably foreseeable, and should be covered in the FEIS, at least for caribou. We offer some citations that describe expected climate-related changes with regard to northern caribou populations.

5. *Commenters requested the EIS identify the responsible parties for implementing mitigation, monitoring requirements, and where the public can find mitigation effectiveness and monitoring results as they become available. Commenters encouraged the use of the mitigation hierarchy (avoidance, minimization, and compensatory offsets) to ensure that unavoidable impacts are effectively and meaningfully offset with appropriate mitigation.*

   The DEIS identifies scores of environmental and operational variables that will be monitored by either Conoco Phillips or BLM over the life of the project. These include many aspects of air, water, weather, facilities, fish and wildlife, and socioeconomics. Lesser attention is given to monitoring the effectiveness of proposed mitigation measures, especially long-term. There are nods to this in the DEIS, but we suspect a greater than expected investment will be needed in this area. Commenters' suggestions to employ a mitigation hierarchy (avoidance, mitigation, compensatory offsets) is a good idea, but we see little evidence of that approach reflected in the DEIS. Economic considerations appear to dominate.

IV. Climate Change Effects

There has been a large body of scientific literature produced in the last 15 years on the effects of climate change. The DEIS does an adequate job of reviewing this literature with an eye to arctic systems especially. But there are some important papers about the likely effects of climate change on caribou that deserve consideration in the FEIS.

1. Joly et al. (2011) predicted that climate change would lead to loss of lichens from increased fire, and loss of upland dwarf birch tussock-shrub from thermokarst and shrub expansion. The combined effects would reduce foraging habitat to the detriment of caribou.
2. Fauchald et al. (2017) predicted evidence of a climate-driven shift in caribou-plant interactions from one previously driven by low plant biomass and cyclic populations, to one driven by low-quality forage (increasing shrubs) and diminishing herds of migratory caribou.
3. Mallory and Boyce (2018) examined the literature related to the many environmental factors that limit caribou and reindeer populations, and how these might be affected by a warming climate. They suggest observed declines in many caribou populations around the world are being driven in significant ways by climate change.
4. Gustine et al. (2017) examined climate-induced effects on forages growing in the summer and autumn ranges of caribou. They suggest the window of time to examine the match-mismatch framework in Arctic ungulates is not at parturition but in late summer-autumn, when the multiplier effects of small changes in forage quality are amplified by forage abundance, peak forage intake, and resultant mass gains in mother-offspring pairs.

These are just a few examples of recent studies aimed at quantifying the effects of climate change on caribou. Others of note include Van Hemert et al (2015) and Russell and Gunn (2019). When climate change effects are compounded by costs associated with development, the effect on caribou populations in the future may be even more significant. The FEIS should more fully explore and explain how climate change is likely to affect the two caribou herds using this planning area in both the near and more-distant future.

V. Mitigation and Best Management Practices (BMPs)

From the DEIS, we reproduce in the below table the primary BMPs (Best Management Practices) designed to mitigate adverse impacts of oil development on caribou.
It was difficult for us to clearly discern what BMPs apply to what areas. For example, it appears BMP K-5 would be applied within the "Teshekpuk Lake Caribou Habitat Area". BMP K-9 would be applied within the "Caribou Movement Corridors", and BMP K-10 would be applied in the "Southern Caribou Calving Area". This information may be given in other EIS's, but for readers unfamiliar with those documents, it would be helpful to clarify in the Willow FEIS with maps and definitions.

It is unclear to us whether BMPs E-5, E-7 and F1 will be applied throughout the Willow project area. We hope that is the case, but if not, please clarify in the FEIS which BMPs apply to what land areas.

If Best Management Practices have any real force, applying just BMP E-5 (requiring that the development footprint be "minimized") would seemingly drive the FEIS to identify alternative D as the preferred. Because that is doubtfully the case, we wonder how broadly and firmly any BMPs are supposed to be applied. The FEIS should speak to this.

BMP E-5	Facilities shall be designed and located to minimize the development footprint.
BMP E-7	Pipelines and roads shall be designed to allow the free movement of caribou and the safe, unimpeded passage of the public while participating in subsistence activities.
BMP F-1	Aircraft shall maintain an altitude of at least 1,000 feet above ground level (except for takeoffs and landings) over caribou winter ranges from December 1 through May 1. Land user shall submit an aircraft use plan as part of an oil and gas development proposal. The plan shall address strategies to minimize impacts to subsistence hunting and associated activities, including but not limited to the number of flights, type of aircraft, and flight altitudes and routes, and shall also include a plan to monitor flights. Aircraft used for permitted activities shall maintain an altitude of at least 2,000 feet above ground level (except for takeoffs and landings) over the Teshekpuk Lake Caribou Habitat Area from May 20 through August 20. Aircraft use (including fixed wing and helicopter) by oil and gas lessees in the Goose Molting Area should be minimized from May 20 through August 20. Hazing of wildlife by aircraft is prohibited. Pursuit of running wildlife is hazing. If wildlife begins to run as aircraft approach the aircraft is too close and must break away.
BMP K-5	Within the Teshekpuk Lake Caribou Habitat Area, permittee shall orient linear corridors when laying out oil and gas field developments to address migration

	and corralling effects and to avoid loops of road and/or pipeline that connect facilities. Ramps over pipelines, buried pipelines, or pipelines buried under the road may be required in the Teshekpuk Lake Caribou Habitat Area where pipelines potentially impede caribou movement. Major construction activities using heavy equipment (e.g., sand/gravel extraction and transport, pipeline and pad construction, but not drilling from existing production pads) shall be suspended within Teshekpuk Lake Caribou Habitat Area from May 20 through August 20. If caribou arrive on the calving grounds prior to May 20, major construction activities will be suspended. Within the Teshekpuk Lake Caribou Habitat Area aircraft use (including fixed wing and helicopter) shall be restricted from May 20 through August 20.
BMP K-9	Within the Caribou Movement Corridors, no permanent oil and gas facilities, except for pipelines. Prior to the permitting of permanent oil and gas infrastructure, a workshop will be convened to identify the best corridor for pipeline construction in efforts to minimize impacts to wildlife and subsistence resources.
BMP K-10	Within the Southern Caribou Calving Area, no permanent oil and gas facilities, except pipelines or other infrastructure associated with offshore oil and gas production, will be allowed.

VI. ANILCA section 810 Subsistence finding

Section 810(a) of ANILCA, 16 USC 3120(a), requires that an evaluation of subsistence uses and needs must be completed for any federal determination to "withdraw, reserve, lease, or otherwise permit the use, occupancy or disposition of public lands."

The DEIS at page 136 concludes "Habitat loss and disturbance could reduce calving and nesting rates and survival for caribou and waterfowl in the vicinity of Project infrastructure and activity but would not have population-level effects on subsistence resources harvested within or downstream from the Project area..."

This latter conclusion about no population-level effects seems baldly asserted, with no empirical or modelled basis in the DEIS (that we could find). The conclusion may be based on the small size of the development footprint, and the large size of the caribou populations in question...but that rationale should be explicitly stated. And we'd urge a bit of caution here. An analysis of likely impacts of oil-field development on caribou in the nearby Arctic National Wildlife Refuge (1002 area), in combination with climate change, did project a population-level effect. A similar analysis in the Willow project area might show the same.

The DEIS analysis concludes that:
"....direct and indirect impacts on caribou availability within the area west of Nuiqsut could have substantial impacts to subsistence users."

We might quibble with use of the word "could" in this statement. *Any*thing "could" happen. We assume the finding is that substantial impacts on subsistence users are "expected", and that language might be substituted.

This finding that the proposed action is expected to significantly restrict subsistence uses imposes requirements to (1) notify the State of Alaska and appropriate regional and local subsistence committees, (2) hold hearings in affected communities, and (3) make the following determinations before BLM can authorize the use of public lands:

- Such a significant restriction of subsistence uses is necessary and consistent with sound management principles for the use of the public lands.
- The proposed activity would involve the minimal amount of public lands necessary to accomplish the purposes of the use, occupancy, or other disposition.
- Reasonable steps would be taken to minimize adverse effects upon subsistence uses and resources resulting from such actions (16 USC 3120(a)).

Assuming this same conclusion is reached in the preferred alternative in the FEIS, the FEIS should make a special effort to quantify the effects on subsistence users in terms that are most relevant to the hunters (e.g., reduced bag, reduced season length, increased travel distance, more hunting days to be successful etc.), and whether they can expect to harvest "amounts of caribou reasonably necessary for subsistence" (per Braem 2017). It should also explain why the projects could not be scaled back (e.g., smaller footprint, directional drilling, more stringent BMPs) to improve the lot of subsistence users while still achieving the main purpose of the project.

VII. Cumulative Effects

Table 3.19.1 of the DEIS includes as its last row the revision of the current Integrated Activity Plan (IAP) for the National Petroleum Reserve in Alaska (NPRA), which includes the area of the Willow Master Development Plan in its entirety. The preceding row lists the Arctic Strategic Transportation and Resources (ASTAR) project. Although the Bureau of Land Management's website states that the NPRA IAP revision is currently at the stage of developing alternatives, none of those alternatives have yet been made available to the public. However, since past IAPs for the NPRA have included alternatives that would allow development in the TLSA, it seems to us that such an alternative in the upcoming revision is reasonably foreseeable. ASTAR will likely include an all-weather road to connect Utqiagvik and other North Slope communities to the Alaskan road system. Each of these two reasonably foreseeable outcomes would have significant adverse impacts to the TCH and molting geese.

1. The TCH is an important subsistence resource for residents of the North Slope. This herd calves primarily in the TLSA and also uses this area for insect avoidance during the mosquito season. Both are critical periods in the caribou life cycle. This DEIS clearly states that calving caribou avoid areas within 6 km of roads and that a network of roads and pipelines can hinder caribou movements during insect avoidance. The cumulative effects section of the DEIS must analyze these impacts on the TCH.
2. The TLSA was originally designated to protect the habitat around its many large lakes that are used by tens of thousands of molting geese. These geese come to the TLSA from their breeding grounds in Siberia and both northeastern and southwestern Alaska. Geese are especially sensitive to disturbance during their flightless, molt period in the mid-late summer. Again, the cumulative effects section of the DEIS must analyze these impacts on molting geese.
3. A road to connect Utqiagvik and other North Slope communities to the Alaskan road system would likely go through the TLSA and would have similar adverse impact to caribou and geese as described above. The cumulative effects section of the DEIS must also analyze these impacts on caribou and molting geese.

Thank you for considering our comments on the Willow Master Development Plan DEIS.

Sincerely,

Nathan Svoboda
President
Alaska Chapter of The Wildlife Society

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