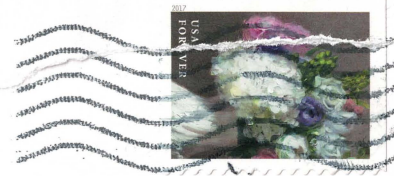


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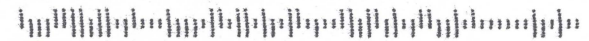
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BLM, Alaska State Office
Attention – Coastal Plains EIS
222 West 7th Avenue, #13
Anchorage, AK 99513-7599

99513-750413



February 11, 2019

BLM, Alaska State Office
Attention – Coastal Plains EIS
222 West 7th Avenue, #13
Anchorage, AK 99513-7599

Gentlemen:

I am aware that of the announcement that seismic testing for oil and gas exploration of the Coastal Plain of the Alaskan National Wildlife (ANWR) has been shelved for this winter, and that oil companies that bid on the leases for oil and gas development will do so without benefit of new data of potential reserves.

At this point as a citizen of the United States and as I am concerned with the following issues:

- a. **That necessary measures be in place to safeguard the species of this invaluable eco-system, and these measures must include:**
 - i. **that precise, state of the art guidelines be in place for seismic testing to detect maternal Polar Bear Dens; and,**
 - ii. **that an agency or department be assigned to assess any deleterious effects on the migrating Porcupine Caribou Herd that the Gwich'in people have relied on for sustenance for over 40,000 years; and,**
 - iii. **that in the event of the discovery of a dead or harmed Polar Bear that a party be assigned the responsibility of determining the cause of death or injury and a third party assess the damages to the wildlife resources of the American People, and,**
 - iv. **In the event the population of the Porcupine Caribou begin to decline during a future Lessee's oil and gas development activity, that an agency or department be identified as being responsible for conducting a competent investigation to identify the cause of the decline and the action necessary to stop the decline including possible revocation of the lease be put into place.**
- b. **To make certain that quake faults in the region such as the one responsible for the large unanticipated August 2018 earthquake north of the Brooks Range are adequately understood prior to any drilling activity**

The Alaskan National Wildlife Refuge's Coastal Plain is truly a cradle of life for many species, including pregnant Porcupine Caribou who seek its protection for their calves in May thru mid-July and pregnant Polar Bears who in the Fall build snow dens on the Coastal Plain where they give birth in mid-winter. Therefore, it is crucial that any disturbance to the Coastal Plain be carefully and deliberately considered, and while the extension of the comment period due to the partial government shut-down was appreciated, I remain concerned that in order, to fulfill the policy of the National Environmental Policy Act (NEPA) that BLM **must extend the comment period to Monday April 29, 2019, to "Encourage and facilitate public involvement in decisions which affect the quality of the human environment," to the fullest extent possible (See, 40 C.F.R. section 1500.2(d))**

- II. **The stakes are very high for Arctic Cultures as well as for threatened wildlife species dependent on the ANWR Coastal Plain; the loss of even one denning mother Polar Bear and her cub would be intolerable.**

A. **Safeguards must be established to ensure that pregnant Porcupine Caribou are not disturbed on ANWR's Coastal Plain by oil and gas lessees during the months of May thru mid- July when they give birth; Should Porcupine Caribou herds decline immediate measures must be taken and the responsible party must reimburse the Gwich'in people.**

The Gwich'in people refer to the ANWR Coastal Plain as the, "The Sacred Place Where Life Begins." For over 40,000 years the Gwich'in have enjoyed a spiritual and cultural connection to the Porcupine Caribou Herd. The Coastal Plain is crucial to the survival of both the Gwich'in culture and the Porcupine Caribou for the reason that pregnant mother Caribou go there to calve because the wind from the Beaufort Sea blows mosquitos away. Mosquitos and bugs can kill a newborn calf. Gwich'in hunters have respected the calving area; they do not follow the herds into this private and protective coastal nursery. They regard this area with such reverence that they work hard to warn off hikers and others from disturbing the pregnant Caribou and their newborns.

The Gwich'in culture depends on the Porcupine Caribou for sustenance. The inhabitants of the Arctic circle are "off road" that is, the only supplies from outside the Arctic Circle that reach them are brought in by plane. This makes food not taken from the land extremely expensive. The calving grounds of the Porcupine Caribou must be undisturbed to insure the continued existence of the venerable Gwich'in Culture and the Porcupine Caribou

B.) **Measures must be taken to ensure that the dwindling Polar Bear Population of the Southern Beaufort Sea is not further threatened by seismic or oil drilling operations, including steps to ensure that seismic work does not harm the snow dens of mothers and cubs.**

The deterioration of the once stable sea ice in the Beaufort Sea has forced more Polar Bears to den onshore on the ANWR Coastal Plain rather than giving birth on risky unstable sea ice. Dr. Steven Amstrup, Chief Scientist at Polar Bears International explains, pregnant female Polar Bears head to the ANWR Coastal Plain area every fall to create snow dens where they give birth to their young. Polar Bear Cubs are very undeveloped and unable for at least 3 months to survive the Arctic rigors outside their den. If these dens are not detected during the proposed seismic work, Polar Bear mothers and their cubs could be endangered by the heavy 90,000-pound trucks. Tragically, the Southern Beaufort Sea Polar Bear population has declined to only 800 to 900 animals.

One abandoned cub and/or one inhabited crushed maternal Polar Bear Den is intolerable

Given that SEExploration has requested that the start of seismic testing be moved to December 2020, I am asking that the highest industry standards are mandated by regulatory measure to detect these snow dens by Forward Looking Infrared Imagery (FLIR) before any seismic testing commences.

It is my understanding that SEA has proposed to protect Polar Bear maternal Dens with visual surveys. Visual methods of identifying Snow Dens are ineffective: first, because there are no den concentration areas across this vast region; and, secondly because the banks of snow where a mother bear digs her den become largely invisible under the winter snow. Distinguishing which banks of snow may hold Polar Bears maternal dens, in any one winter, is essentially impossible.

I have learned that in order for FLIR to be effective it must be performed more than once, it must be performed under optimal weather conditions, and it should be performed using helicopters. I therefore request the following regulatory precautions be implemented:

- 1.) **That more than one survey of an area be performed using FLIR.** I am alarmed by the findings of Dr. Amstrup in his article "Detecting denning polar bears with FLIR imagery" BioScience 54 337-344 (2004) in the experiment he describes, FLIR imagery was flown over known maternal dens and he determined that a 50% detection rate was the highest rate of detection that could be expected from a single survey;
- 2.) **FLIR surveys must be performed under optimal weather conditions.** The weather conditions for each FLIR survey should be reported and assessed to determine if another survey is needed for it is known that airborne moisture, including precipitation, fog, and clouds limit FLIR effectiveness.
- 3.) **FLIR surveys should be completed using helicopters and not fixed wing aircraft.** Fixed wing aircraft do not allow for hovering that can facilitate visual inspection. Their effectiveness is limited for they fly at higher altitudes, they have much greater restriction on approach speed and more restricted view angles. The use of helicopters to protect maternal dens must be mandated for they allow infinite variations of view and angle speed.

III. The Fault of Faults such as the one responsible for the historic August 2018 earthquake that was 50 times greater than any previously measured earthquake and the magnitude of which was completely unanticipated must be better understood before oil or gas can responsibly begin.

August 2018 a strike-slip fault of a magnitude of $M=6.4$ struck in ANWR, in the pristine Coastal Plain between the Beaufort Sea and the Brooks Range mountains. While earthquakes of this nature are not surprising, the magnitude of this quake was unanticipated by the Global Earthquake Activity Rate (GEAR) that is used to forecast likely earthquake magnitude within the near future. The Alaskan Earthquake Center in Fairbanks released a bulletin stating:

Scientifically, however, this region is poorly understood and the behavior of the fault or faults responsible for today's earthquake are not known.

A competent study of any underlying, hidden faults should be undertaken. We do not want to increase the risk of inducing earthquakes in the invaluable region as has happened in Oklahoma since extensive drilling began there in about 2003.

Sincerely,

Chasity Bowring
48 SANDWOOD DR
GEORGETOWN 14068