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Secretary David Bernhardt, U.S. Department of the Interior
Director Aurelia Skipwith, U.S. Fish and Wildlife Service
Attn: Docket No. FWS–R7–ES–2020–0129

Submitted at <https://beta.regulations.gov/commenton/FWS-R7-ES-2020-0129-0001>

Agency: U.S. Fish and Wildlife Service
Parent Agency: U.S. Department of the Interior

RE: International Association for Bear Research and Management comment letter on Marine Mammals; Incidental Take During Specified Activities; Proposed Incidental Harassment Authorization for Polar Bears in the Arctic National Wildlife Refuge

Dear Secretary Bernhardt and Director Skipwith:

The International Association for Bear Research and Management (<https://www.bearbiology.org>) is a non-profit professional organization of biologists, wildlife managers, and others dedicated to the conservation of the world's 8 species of bears. We have over 500 members and publish the peer-reviewed scientific journal *Ursus*, as well as the *International Bear News*. We fund research, conservation projects, and collaborative exchanges, and sponsor scientific conferences worldwide. Our goal is the conservation and restoration of the world's bears through research, management, and education. Two components of our mission are to "Support sound stewardship of the world's bears through science-based population and habitat management" and "Provide professional counsel and advice on issues of natural resource policy related to bear management and conservation."

We were formally asked by one of our members to assess the proposed Incidental Harassment Authorization (IHA) for Kaktovik Inupiat Corporation (KIC) seismic surveys. Because this is such an important issue, we want to provide input on some significant concerns, but the short timeframe to review the documents and the fact that the comment period occurs during the holiday season made that difficult. There are economic, political, legal and social issues in addition to ecological concerns that will ultimately decide if the surveys are going to be permitted. But we want to provide science-based background on potential impacts of the seismic work on polar bears, and also emphasize that if the project is authorized, every practical means to prevent or minimize impacts should be employed.

We offer the following comments on the IHA for polar bear take associated with the planned KIC project.

I. The proposed KIC seismic work in polar bear denning habitat in the Marsh Creek East Program Area within the Coastal Plain region of the Arctic National Wildlife Refuge (ANWR), Alaska raises conservation concerns:

1. Polar bears were listed as a threatened species in the US in May 2008 under the Endangered Species Act due to ongoing and potential loss of their sea ice habitat resulting from climate change. Terrestrial denning habitat within 32 km of the northern coast of Alaska between the U.S. Canadian border and the Kavik River was also designated critical habitat in 2010 by the US Fish and Wildlife Service.
2. Of the 19 subpopulations of polar bears, the Southern Beaufort Sea (SB) population, which dens in part in ANWR, has experienced one of the single largest declines of any polar bear population on record (Bromaghin et al. 2015). This loss of 25-50% of the population between the years of 2004-2010, was likely due to unfavorable sea ice conditions that limited access to prey during multiple seasons and low prey abundance. Current estimates of SB population status are forthcoming, but Atwood et al. (2020) reported the last estimate of the SB population in 2015 was 573, which was a large decline from the estimate of 1,300 in 2003. Reproductive failure was implicated in recent declines in the SB population (Bromaghin et al. 2015).
3. Denning is one of the most critical and sensitive times of year for bears (Linnell et al. 2000), and ANWR has been identified as an important denning area for SB polar bears (Amstrup 1993, Amstrup et al. 2002, Durner et al. 2006). Polar bears give birth in dens and protecting habitat for pregnant female polar bears to produce young is vital for population sustainability. During the denning period polar bears are sensitive to disturbance (Larson et al. 2020). Wilson and Durner (2019) warned that without proper precautions, oil and gas seismic surveys can be very disruptive to wildlife populations. Den disturbance has been known to result in den abandonment, and in the extreme, for mothers to abandon cubs resulting in reproductive failure (Linnell et al. 2000). As noted above, reproductive failure was implicated in recent declines in abundance of the SB population (Bromaghin et al. 2015). Atwood et al. (2020) estimated that the entire SB subpopulation produced 123 dens per year (median; 95-percent credible interval = 69, 198 dens), 66 (median; 95-percent credible interval = 35, 110 dens) of which were land-based. Most land-based dens were located between the Colville and Canning Rivers (which includes the Prudhoe Bay-Kuparuk industrial footprint), followed by the 1002 Area of the Arctic National Wildlife Refuge and the National Petroleum Reserve-Alaska. Wilson and Durner (2020) estimated 20 dens occur yearly in the 1002 area which includes the KIC tracts.
4. Polar bears in the Southern Beaufort Sea have been documented to den both on the sea ice and on land. In the late 1980s and early 1990s, Amstrup and Gardner (1994) were first to report a shifting of dens from pack ice to land as a result of eroding sea ice. Fischbach et al. (2007) reported that the proportion of dens on pack ice declined from 62% in 1985–1994 to 37% in 1998–2004. Most recently Olson et al. (2017) confirmed that polar bears were still shifting denning from pack ice to land as ice habitat suitable for maternal denning is decreasing. Females that den on land have higher reproductive success than females that den on sea ice (Rode et al. 2018). But as more bears den on land, such as the coastal plain of ANWR, that puts them in areas proposed for industrial development. The projected outlook for Arctic sea ice is bleak (Biello 2008) and areas like ANWR will play an even more crucial role in providing a safe place for maternal denning and are thus crucial for long-term population maintenance.

II. Preventing or minimizing disturbance to polar bears during any seismic work on the ANWR Coastal Plain is critical:

For the long-term conservation of the SB subpopulation of polar bears, it is clear that protecting adult females in maternity dens is critical. Therefore, the crux of the disturbance issue is trying to detect as many dens as possible ahead of the work and avoid areas within 1.6 km of them (Larson et al. 2020). Because no technique can locate all dens, it is also critical to have an appropriate plan of action to minimize disturbance

if a previously undetected den is accidentally discovered during the seismic work. Care must also be taken to detect and avoid dens while traveling from Prudhoe Bay to the testing area.

1. How seismic surveys are conducted can reduce their potential impacts. Wilson and Durner (2019) evaluated five scenarios for conducting seismic surveys. The most restrictive in space and time was 90% less disruptive than surveys conducted without restrictions. Additionally, Wilson and Durner (2019) pointed out that the use of aerial forward-looking infrared (FLIR) surveys could reduce the chances of maternal den disruption by 68% across all scenarios. Using Wilson and Durner (2019) as guidance to minimize disturbance to denned polar bears is highly recommended and essential for long-term conservation of polar bear populations.

2. Technology to locate active dens using aerial FLIR surveys, is currently the most practical method for finding dens. Though the technology is improving, it can still be problematic. One of the best ways to improve detection is to fly multiple surveys. The requirement for 3 surveys flights in the IHA is a good one and should increase detection rates (Smith et al. 2020). Den detection rates with aerial FLIR surveys reported in the literature range from only 45% based on single fixed wing surveys (Smith et al. 2020) to 83% for multiple helicopter surveys of the same areas (Amstrup et al. 2004). Robinson et al. (2012) identified wind, solar radiation, dew point, and snow depth over 100cm deep at dens as factors that affect hand-held FLIR surveys. Snow depth overlying dens is dynamic and may confound detection by FLIR. Other factors such as type of aircraft and airspeed, can likely influence ability to detect dens using aerial FLIR surveys and should also be considered. Every effort should be made to conduct the required surveys under optimal conditions, such as early in the season on cold clear days with little wind and no sunlight. York et al. (2004) suggested that a survey window should be chosen that is late enough in the year for bears to have entered dens, but early enough to maximize darkness and minimize snow cover over the dens. Therefore, the second week of December through mid-January should be ideal, depending on weather conditions. This window will already have passed by the time of the requested survey for early 2021.

3. Localized ground surveys with hand-held FLIR or FLIR-equipped unmanned aircraft system (UAS-FLIR) are also useful tools for detecting dens that can supplement the larger surveys. There have been studies on ground-based den detection that used artificial dens to test the technique and produced some useful insights (Robinson et al. 2014, Pedersen et al. 2020). UAS-FLIR was 4 times as likely to detect an artificial polar bear den from a vertical versus a horizontal perspective (Pedersen et al. 2020). Issues such as detection rate varying with early in season vs later, wind, temperature etc. were also reported.

4. All the data indicates that a 1.6 km buffer around known dens is necessary to prevent disturbance. The requirement in this IHA should be adequate (Larson et al. 2020).

5. Having a good response plan and ensuring there is an appropriate response when a den is accidentally discovered during work can help reduce the seriousness of the impacts. Larson et al. (2020) found that denned polar bears on Alaska's North Slope could tolerate some human activity near den sites and that den abandonment did not occur when bears were exposed to low levels of disturbance. Therefore, having a response plan which ensures that crews immediately leave the area near discovered dens and subsequently avoid a 1.6 km buffer in the vicinity of them will help to reduce disturbance.

III. Other recommendations if KIC Seismic surveys are allowed to proceed:

1. It is important to have proper monitoring and adequate agency oversight during the seismic surveys. Because not all dens will be found during aerial surveys it is especially critical to have agency staff prepared to respond rapidly in situations where an undetected den is discovered during the surveys to prevent excessive disturbance and manage such situations as they develop.

2. Careful thought should be given to the content of bear awareness training that all workers receive. It's important that training be relevant and emphasize the potential seriousness of scenarios, the need to prevent disturbance to bears and den sites, and how to respond to polar bear sightings while out doing the surveys, such as seeing bears out in spring.

3. If this work is authorized and proceeds, careful documentation will help assess future projects, and we recommend, e.g., follow-up study in spring and/or summer on whether what were identified as probable polar bear dens were actually dens to help better understand how well den detection worked.

As a final note, the optimal period for detecting polar bear dens with aerial forward-looking infrared (FLIR) is reported to be the second week in December through mid-January (York et al. 2004). Therefore, even if the seismic surveys are approved, surveys this winter will be later than ideal. Postponing this project so den surveys could be conducted in better conditions during early winter 2021/22 would be preferable.

Thank you for the opportunity to comment on this IHA.

Sincerely,



John Hechtel
President, International Association for Bear Research and Management (IBA)
<https://www.bearbiology.org>

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