



MARINE MAMMAL COMMISSION

7 January 2021

Mr. Patrick Lemons, Chief
Marine Mammals Management
U.S. Fish and Wildlife Service
1011 East Tudor Road, MS-341
Anchorage, Alaska 99503

Dear Mr. Lemons:

The Marine Mammal Commission (the Commission), in consultation with its Committee of Scientific Advisors on Marine Mammals, has reviewed the application submitted by the Kaktovik Iñupiat Corporation (KIC) under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA). KIC is seeking authorization to take small numbers of polar bears by harassment incidental to seismic surveys in the Marsh Creek East Program Area (Program Area) of the Arctic National Wildlife Refuge Coastal Plain (1002 region). The Commission also reviewed the Fish and Wildlife Service's (FWS) 8 December 2020 notice (85 Fed. Reg. 79082) requesting comments on its proposal to issue the authorization, subject to certain conditions.

KIC plans to conduct aerial infrared (AIR) surveys, handheld/vehicle forward-looking infrared (FLIR) surveys, and environmental and 3D seismic surveys. KIC also plans to establish temporary camps and infrastructure (e.g., airstrips) in association with the seismic surveys. The Program Area for the seismic survey and other activities encompasses 1,441.82 km², extending from Kajutakrok Creek in the west to Pokok Bay in the east, and from the coast to 40 km inland (see Figure 1 in the *Federal Register* notice). Portions of the Program Area are within designated polar bear critical habitat¹. Project source lines will be spaced at 402-m intervals with up to five receiver lines placed on the ground at one time. KIC proposes to commence activities in January 2021, starting with AIR surveys to detect polar bear dens, after which the seismic survey crew will mobilize and operate in successive sub-blocks within the Program Area for a specified number of days (2-3 days in each sub-block; see Table 9 in the *Federal Register* notice). Seismic operations are planned to conclude by 25 May 2021 or the close of the winter travel season, whichever occurs first. KIC will then deploy crews during the summer over an additional 15 days to collect any refuse or debris inadvertently left behind.

FWS preliminarily has determined that the proposed activities could displace or temporarily modify the behavior of small numbers of polar bears, but that the total taking would have no more than a negligible impact on the Southern Beaufort Sea (SBS) stock of polar bears. FWS does not anticipate any take of polar bears by death or serious injury. It believes that the applicant's proposed mitigation measures will reduce the potential for harassment to the least practicable level. The proposed mitigation, monitoring, and reporting measures include—

¹ 75 Fed. Reg. 76086.

- using the den habitat map developed by the U.S. Geological Survey² and conducting AIR and FLIR surveys to locate bear dens within the Program Area prior to and during project activities and establishing a 1.6-km exclusion zone around all known dens;
- immediately consulting with the FWS upon detection of a suspected den to determine if additional surveys or mitigation measures are required;
- placing a 100-m buffer on each side of defined denning habitat (16-degree slope and 1.4-m height) and a 25-m buffer on slopes of 10-15 degrees for all source points;
- restricting the time spent in each sub-block and location of activities to limit disturbance around dens;
- implementing an approved polar bear safety, awareness, and interaction plan (Appendix A of KIC's application);
- avoiding areas used or expected to be used for subsistence hunting;
- restricting aerial overflights to altitudes greater than 457 m (1,500 ft) and distances farther than 805 m (0.5 mi) from observed polar bears, or in known polar bear concentration areas (Barter Island, Bernard Spit, Jago Spit);
- not landing aircraft within 805 m (0.5 mi) of a polar bear;
- not landing aircraft in the Barter Island, Bernard Spit, Jago Spit, or Arey Island complex (other than the Kaktovik airport) from 7 to 30 September;
- boarding the aircraft and leaving the area if a polar bear is observed while the aircraft is grounded, and avoiding flying over the bear;
- following other standard procedures to avoid disturbance of polar bears by aircraft;
- using trained, FWS-approved marine mammal observers to implement site-specific mitigation, monitoring, and reporting measures; and
- submitting weekly progress reports (including GPS/GIS tracks of all project vehicles), observation reports within 48 hours of sighting polar bears or polar bear dens, incident reports within 48 hours, and a final mitigation and monitoring report within 90 days.

The seismic activities would occur near areas used by Alaska Natives from the village of Kaktovik for subsistence hunting. FWS has stated that, although KIC's aircraft may temporarily displace polar bears, the use of such aircraft is not expected to alter the ability of Alaska Native residents of Kaktovik to harvest polar bears in the long term. As summarized in KIC's Plan of Cooperation (POC; Appendix B of KIC's application), KIC has contacted, and will continue to communicate with, affected subsistence communities, hunter organizations, government agencies, and other local stakeholders to discuss potential conflicts caused by the proposed activities. Based on the proposed measures for detecting bears and bear dens, the timing and location of proposed surveys, proposed measures to avoid subsistence harvest activities, ongoing community consultations, and implementation of the polar bear avoidance and interaction plan, FWS preliminarily has determined that the proposed taking would not have an unmitigable adverse impact on the availability of polar bears for subsistence uses by Alaska Natives. The Commission has reviewed the POC included with KIC's application but notes that a summary of community concerns and steps taken to resolve those concerns was not included in that version of the POC. The Commission recommends that FWS review any updates to the POC to ensure that community

² Available at http://alaska.usgs.gov/science/biology/polar_bears/denning.html

concerns have been addressed prior to issuing an authorization. The Commission further recommends that FWS make available to the public on its website any and all updates to the POC as they are received.

Polar bear critical habitat and den disturbance

The proposed Program Area includes high-density polar bear habitat and maternal denning areas along the shore and inland – areas designated by FWS as polar bear critical habitat. Protecting maternal dens and ensuring cub survival should be of utmost importance given the threatened status and declining trend of the SBS polar bear population (FWS 2017; Polar Bear Specialist Group 2019), deteriorating sea ice conditions and associated effects on cub recruitment (Rode 2010), and the increased use of land-based dens by SBS bears (Atwood et al. 2016, Rode et al. 2018). There is also significant potential for additional adverse effects on polar bears, and particularly maternal dens, if human activities increase in the Program Area in the future as a result of drilling and production of oil and gas (FWS 2020).

Independent peer review of monitoring plan

Monitoring plans associated with incidental harassment authorizations where the proposed activities may affect the availability of a species or stock for taking for subsistence uses are subject to independent peer review prior to issuance, in accordance with section 101(a)(5)(D)(i)(III) of the MMPA. It does not appear that KIC's monitoring plan had such peer review. That process may assist in identifying additional measures that can be taken to improve monitoring of project activities and to minimize disturbance of polar bears to ensure that bears continue to be available for subsistence taking. Given FWS's determination that KIC's proposed activities have the potential to disturb or displace polar bears and thereby affect availability for subsistence use, if KIC's proposed activities extend into areas and times that overlap with subsistence activities, the Commission recommends that FWS initiate a peer review of the proposed mitigation and monitoring plan in accordance with section 101(a)(5)(D)(i)(III) of the MMPA. Further, FWS should ensure that the peer review is completed before an authorization is issued and project activities can commence. Moreover, its findings should be used to inform further development of proposed monitoring measures, which should be subject to further opportunity for public review and comment.

Take estimates

KIC provided estimates of anticipated takes by Level B harassment for both non-denning and denning bears in its application, broken down by season and type of activity, and requested an authorization for 53 takes by Level B harassment³. KIC's estimates were based in part on oil and gas industry activities on the North Slope reported by Letter of Authorization (LOA) holders from 2000–2016. KIC estimated that three non-denning bears could be taken by Level B harassment during winter activities. KIC used a rather simplistic approach to estimate takes based on the rate of bears encountered per area in previous North Slope surveys multiplied by the area to be affected by FLIR surveys, seismic surveys, and activities associated with use of a designated access route into

³ KIC's take estimate by Level B harassment included 21 non-denning bears and 31 denning bears, which KIC rounded up to 53 bears (Table 2 in KIC's application).

and out of the Program Area. KIC's approach may underestimate the actual number of takes because encounter rates do not take into account bears that are present but not detected by observers. On the other hand, KIC's approach may overestimate takes by Level B harassment because it fails to acknowledge that not all encounters actually result in disturbance. FWS (2020) determined that, of 4,371 bears sighted and reported by LOA-holders, only 24 percent of reported encounters were considered to result in takes by Level B harassment.

KIC estimated that 18 bears could be taken by Level B harassment during summer activities. That is likely an overestimate because (1) it is based on ground-based counts of polar bears during August at Kaktovik on Barter Island, where aircraft operations will originate and where the largest concentrations of bears are expected to be found, and (2) survey and cleanup activities are expected to be completed by July, before bears normally start to congregate at Barter Island.

To estimate takes of denning bears, KIC assumed that all dens present in the 1002 area (an estimated 20 dens) would be located within the boundaries of the Program Area. It then used disturbance rates associated with large and small machinery published by Larson et al. (2020) to estimate that 31 denning bears would be taken by Level B harassment. This too appears to be an overly simplistic and biased approach because not all dens in the 1002 area are expected to be within the Program Area (Wilson and Durner 2020) and because the disturbance rates used by KIC are based on distances from den sites of less than 300 m (Larson et al. 2020), which does not adequately account for the potential for disturbance at greater distances (Owen et al. 2020).

FWS took a different approach in its estimation that the proposed activities would result in only three takes of non-denning and denning bears by Level B harassment⁴. FWS's estimation process did not make any reference to the approach taken by KIC or explain why KIC's approach, which estimated 53 takes by Level B harassment, was disregarded. FWS's estimate that KIC's proposed activities were likely to result in the taking by Level B harassment of only two non-denning bears and one denning bear appears to be patently unrealistic given the size of the Program Area, its overlap with polar bear critical habitat, the nature and duration of activities, and the number of bears, especially denning females and cubs, likely to be present during the period of activities. FWS's approach deviated from the standard one generally used to estimate potential takes, in which takes are calculated by multiplying: 1) the density of animals expected to be in the Program Area in a given season by 2) the area in which animals may be affected by projected activities on any given day and by 3) the total days of activities.

Instead, in deriving its estimate of one take of a non-denning bear by Level B harassment, FWS appears to have used encounter rates as a proxy for density in the Program Area, based on encounter rates reported by LOA holders for similar activities on the North Slope. The Commission does not believe that encounter rates are an acceptable proxy for densities because encounter rates from LOA reports are not corrected to reflect the availability of bears to be detected in the Program Area or the ability of observers to detect all bears that are present. FWS's approach also involves a

⁴ FWS estimated a take of 0.955 non-denning bears due to surface activities, 0.319 non-denning bears due to aircraft activities, and 1.260 denning bears due to all combined activities (85 Fed. Reg. 79111).

number of variables⁵ that seemingly have been included only to reduce the take estimate to an ‘acceptable’ level.

FWS’s estimate of one take by Level B harassment for denning bears is particularly concerning, given that KIC estimated that 31 denning bears could be taken. FWS’s take estimate of one bear did not even appear to account for group size of denning bears — on average, denning females are accompanied by two cubs that presumably would be taken along with the mother. FWS’s estimated take of denning bears relied on a model-based estimate of 2.74 land-based dens in the Program Area. This estimate appears to be biased low, based on analyses by Wilson and Durner (2020), who indicated that at least four, and as many as eight, dens have been identified in recent years in the Program Area. The estimate also assumed that all dens would be detected by infrared surveys, which, as noted herein, may not be an appropriate assumption and could reduce the effectiveness of the proposed mitigation measures. The model used by FWS⁶ estimated a range of zero to three takes by Level A harassment and zero to eight takes by Level B harassment in the Program Area. However, FWS proposed to authorize no Level A harassment takes and only one Level B harassment take of denning bears. Although the Commission agrees that the likelihood of a Level A take occurring is low, based on LOA reports for similar activities in high density denning areas (FWS 2020) and the proposed mitigation measures⁷, it is quite likely that the number of takes by Level B harassment that FWS is proposing to authorize will be reached before the project is completed. As such, using the maximum number of takes estimated by the model, rather than the minimum or mean, if FWS thinks that level would still meet the applicable negligible impact criterion, would be more appropriate.

If KIC’s takes by Level B harassment were to exceed FWS’s proposed authorization, KIC would have to cease operations, including not conducting summer cleanup activities, until it had applied for and received a new or amended IHA. The Commission therefore recommends that FWS re-evaluate the proposed authorization of Level B harassment takes and consider increasing the number to reflect the best available data, modelling, and uncertainty associated with the number of bears that could be taken by Level B harassment. Although the Commission is not in a position to calculate and recommend a specific number, given the range of estimates produced by the FWS model, and the much higher estimates provided by the applicant, it would seem that FWS should consider authorizing at least ten takes of polar bears by Level B harassment.

Mitigation, monitoring, and reporting measures

The proposed mitigation measures rely, in part, on the detection of polar bear dens and the establishment of a 1.6-km buffer around known dens to minimize disturbance of bears. However, detecting dens using infrared surveys under North Slope operating conditions is estimated to be only 45 percent effective (Smith et al. 2020). Ideal conditions necessary to detect dens include cold, clear days, with calm winds, in the absence of sunlight (Pedersen et al. 2020) — conditions which are not

⁵ Such as ‘the proportion of the season an area of interest is impacted’ and ‘bear occupancy rate’, both of which are already reflected in other variables which account for abundance of bears in the Program Area.

⁶ Referenced at 85 Fed. Reg. 79110.

⁷ Notwithstanding the concerns noted herein regarding the efficacy of infrared methods to detect dens (Smith et al. 2020).

reliably present in the winter on the Alaska Coastal Plain. To ensure that the authorized number of takes of polar bears is not exceeded, a comprehensive monitoring program is critical and should be focused, in part, on documenting how, and how many, bears in the Program Area respond to disturbance from the various planned aerial and land-based activities. Data on infrared and aerial detections and human-bear interactions in other areas of the North Slope may not be representative of detections and interactions in the Program Area, which currently has no oil and gas activities. In addition, coastal regions in the Program Area have a higher abundance of non-denning bears, due to the presence of remains of subsistence-harvested whales near Kaktovik (Wilson et al. 2017), which could increase human-bear interactions as compared to areas west of the Program Area⁸. The Commission recommends that FWS work with the U.S. Geological Survey and KIC to ensure that the mitigation and monitoring plan be implemented as proposed, with an emphasis on 1) cooperative, timely analysis of all infrared and photographic data and images of suspected or known dens and 2) timely reporting and analysis of all human-bear interactions. Particular attention should be paid to the collection and analysis of data that would enhance understanding of the effectiveness of the proposed mitigation measures for avoiding takes of polar bears in the Program Area, as has been done for areas west of the 1002 area.

FWS refers in several places to its 'LOA database', which appears to have a summary of polar bear interactions and deterrence events reported by operators authorized under LOAs to take marine mammals incidental to oil and gas operations. However, neither the database nor the associated final reports are available on FWS's website or in the *regulations.gov* docket folder. The LOA final reports provide valuable information on the types of activities conducted during the course of a project, marine mammals detected in the project area by observers, how mitigation and monitoring measures were implemented, and the outcome of human-bear interactions. Without access to these reports, reviewers are unable to fully evaluate this proposed authorization. Those reports contain information that is not otherwise available on polar bear interaction and take rates; sound levels and distances associated with den disturbance from aircraft, seismic, and land-based sound sources; and the practicality and effectiveness of mitigation and monitoring methods and technologies, including the effectiveness of AIR and FLIR surveys in detecting maternal dens under actual operating conditions. It is our understanding that most, if not all, of the information provided in 90-day reports should be considered publicly available. The Commission recommends that FWS post the 90-day reports submitted by the oil and gas industry operating on the North Slope under MMPA authorizations on its website. In addition, FWS should make available summary data from the 90-day reports to assess 1) the effectiveness of mitigation and monitoring measures to detect dens (such as AIR and FLIR) and 2) the effectiveness of the proposed 1.6 km buffer to avoid disturbance of maternal dens.

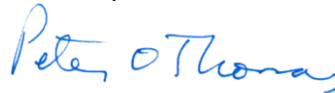
Finally, under Section B(c)(3) of the proposed authorization (85 Fed. Reg. 79115), FWS has indicated that overflights would be restricted within 805 m of areas with known polar bear concentrations on Barter Island, Bernard Spit, and Jago Spit. However, under Section B(c)(5), FWS states that KIC must not land in the Barter Island, Bernard Spit, Jago Spit, and Arey Island complex.

⁸ The higher density of bears in the Program Area was taken into account by FWS in its estimated take by Level B harassment of non-denning bears on land by applying a 2.33 correction factor to the encounter rates reported by North Slope operators. That correction factor does not appear to have been applied to estimates of takes from disturbance by aircraft activities.

No explanation is provided for why the restriction on overflights, like the restriction on landing, did not include Arey Island. The Commission recommends that FWS include Arey Island in its restriction on aerial overflights, or provide a justification for excluding it from this restriction imposed on other known polar bear concentration areas.

Please let me know if you have any questions with regard to this letter.

Sincerely,



Peter O. Thomas, Ph.D.
Executive Director

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Mr. Patrick Lemons

7 January 2021

Page 8

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