

**I. Introduction** On June 7, 2018, SAExploration, Inc. (hereafter “SAE” or “the applicant”) submitted a request to the Service’s Marine Mammals Management Office (MMM) for authorization to take a small number of polar bears by non-lethal, non-injurious harassment during their proposed three-dimensional (3D) winter seismic survey and associated activities within the Marsh Creek Program Area, located in the Coastal Plain of the Arctic National Wildlife Refuge, Alaska, between January 2, 2019, and August 3, 2020. We have conducted a preliminary analysis which, based on the information currently available to us, indicates challenges with making a determination that the total taking will have a negligible impact on the Southern Beaufort Sea (SBS) stock of polar bears.

## **II. Background**

### Background:

The Marine Mammal Protection Act of 1972, as amended, (MMPA) gives the Secretary of the Interior (Secretary) the authority to allow the incidental, but not intentional, taking of small numbers of marine mammals, in response to requests by U.S. citizens engaged in a specified activity (other than commercial fishing) in a specified geographic region. The Secretary has delegated authority for implementation of the MMPA to the U.S. Fish and Wildlife Service (Service).

The Service is directed to allow incidental taking, for a period of up to 5 years, if we make findings that the total of such taking:

- (1) will affect only **small numbers** of individuals of these species;
- (2) will have **no more than a negligible impact** on these species; and
- (3) will not have an **unmitigable adverse impact on the availability of these species for taking for subsistence use by Alaskan Natives**.

If a finding cannot be made that the total taking will have a negligible impact or will not have an unmitigable adverse impact on the availability of the stock for subsistence uses, we are to publish the negative finding, along with the basis for denying the request, in the Federal Register.

### Important definitions under the MMPA and/or implementing regulations<sup>1</sup>:

**Take:** to harass, hunt, capture, or kill, or to attempt to harass, hunt, capture, or kill any marine mammal

**Harassment:** any act of pursuit, torment, or annoyance that:

- (i) has the potential to injure a marine mammal or marine mammal stock in the wild (the MMPA calls this “Level A harassment”), or

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<sup>1</sup> While there are a number of important definitions such as small numbers, unmitigable adverse impact and least practicable adverse impact, we have focused here on the definitions that are most critical to this particular evaluation.



- (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering (the MMPA calls this “Level B harassment”).

*Negligible impact:* an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.

#### Existing Southern Beaufort Sea (SBS) Incidental Take Regulations (ITRs)

In August 2016, we issued final ITRs that authorize nonlethal, incidental, unintentional take of small numbers of Pacific walrus and polar bears during oil and gas industry activities in the Beaufort Sea, effective for 5 years. The geographic area covered by these ITRs excludes the Arctic National Wildlife Refuge and all areas within its outer boundary.

#### Southern Beaufort Sea Subpopulation of Polar Bears

The most recent population estimate for SBS polar bears is approximately 900 individuals in 2010 (Bromaghin et al. 2015). This represents an approximately 50 percent decline in SBS polar bear abundance between 1986 and 2010 (Armstrup et al. 1986, Regehr et al. 2006, Bromaghin et al. 2015). In addition, analyses of over 20 years of data on the size and body condition of SBS bears demonstrated declines for most sex and age classes and significant negative relationships between annual sea ice availability and body condition (Rode et al. 2010). These lines of evidence suggest that the SBS subpopulation is currently declining due to sea ice loss.

Atwood et al. (2016) determined that the percentage of radio-collared adult females coming on shore in summer and fall increased from 5.8 to 20 percent between 2000 and 2014. Over the same period, the mean duration of the open-water season (the period when less than 15 percent of the continental shelf is covered by at least 15 percent concentration sea ice) increased by 36 days and the mean length of stay on land by polar bears increased by 31 days (Atwood et al. 2016). In addition to increased use of land during the open-water season, SBS polar bears have also increasingly used land for maternal denning, with 55.2 percent of dens being constructed on land compared to ice from 2007 to 2013.

#### The Analysis

The analysis will consider the potential impact of the full seismic operations (including transportation corridors, camps, and seismic work) on all life stages and behaviors of polar bears in the area. However, for this briefing we focus on the most critical use of the area, which is by denning bears. Our estimate is that within any one year, there are approximately 20 dens likely in the area<sup>2</sup>. The applicant proposes to conduct Aerial Infrared (AIR) surveys of the area in an effort to detect and mitigate impacts to denning bears. Once detected, a one-mile no work buffer will be placed around each den. We consider these buffers to be effective at mitigating the impacts to denning bears. Available data indicates that the effectiveness of AIR in detecting dens ranges from 50-62 percent. Therefore, of the 20 possible dens in the area, 10-12 will be detected and protected from Level A harassment through the imposition of a one-mile buffer. The remaining 8-10 will not be detected and will be exposed to effects of the seismic operations including vehicle traffic, human activity, and seismic work. Based on data from past operations,

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<sup>2</sup> The numbers used in this briefing are provisional and subject to change as the analysis is being refined.



impacts from those exposures include decreased survival of cubs, mortality of cubs and possibly the mortality of an adult female. Preliminarily, the result could be approximately 15 Level A harassment takes (injury or mortality).

We then have to examine whether these Level A takes are reasonably expected to, and are reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival, that therefore become non-negligible. The MMPA defines the Potential Biological Removal (PBR) level as the maximum number of animals, not including natural mortalities, that may be removed from a marine mammal stock while allowing that stock to reach or maintain its optimum sustainable population<sup>3</sup>. The PBR is the product of the minimum population estimate of the stock, one-half of the maximum theoretical or estimated net productivity rate of the stock at a small population size, and a recovery factor between 0.1 and 1.0 ( $PBR = N_{min} \times 0.5R_{max} \times F_R$ ). The calculation of the PBR in the most recent draft Stock Assessment Report for the Southern Beaufort Sea stock of polar bears is 14 ( $N_{min}$  of 782,  $R_{max}$  of 7.5% and  $F_R$  of 0.5).

During the 10-year period of 2006–2015, an average of 19 bears per year were removed from the U.S. portion of the SBS stock and 14.2 bears per year were removed from the Canadian portion of the SBS stock. Defense of life kills have also occasionally occurred for this stock. On average, 33.2 bears are taken for subsistence purposes from the SBS stock on an annual basis compared to a PBR of 14, indicating that the ability of the population to reach the Optimal Sustainable Population (OSP) is being compromised. It appears reasonable to assume that any Level A takes from proposed seismic activities would be an additional impact to the SBS stock and would likely further adversely affect the SBS stock of polar bears through effects on annual rates of recruitment or survival. If that is the case, we cannot conclude that the total taking will have a negligible impact on the SBS stock and must make a negative finding, and therefore not publish ITRs.

#### Consideration of Mitigation Measures

The MMPA requires that we consider the availability and feasibility (economic and technological) of equipment, methods and manner of conducting the proposed activity or other means of effecting the least practicable adverse impact upon the affected stock. It also allows us to consider whether mitigating measures would render the impact of the specified activity negligible when it would not otherwise satisfy the requirement and in those cases, we can make a finding of negligible impact, subject to such mitigating measures being successfully implemented.

As noted above, we considered the use of the AIR and found it to be effective at avoiding Level A harassment for 50-62 percent of the dens in the project area. We considered whether multiple passes with AIR could increase the detection probability and that is certainly possible, but it would be difficult to quantify the additional probability of detection and even with multiple passes (posing significant financial costs and logistical constraints), it is likely that some dens will remain undetected. We also considered spatial and/or temporal restrictions on activities, but both the geographic extent and the time period necessary to avoid exposure of undetected dens

<sup>3</sup> OSP – the number of animals which will result in the maximum productivity of the population or species, keeping in mind the carrying capacity of the habitat and the health of the ecosystem of which they form a constituent element



would be so broad as, in our opinion, to make this measure not feasible.

#### Related Issues

It is also important to note that the Bureau of Land Management (BLM) is consulting with the Service on the impacts of their proposed action of authorizing the seismic operations on listed species and designated critical habitat. That consultation is intended to cover both the BLM's proposed action as well as the Service's proposed authorization of ITRs, if appropriate. The formal biological opinion with the BLM cannot include an incidental take statement for polar bears until and unless such take is authorized under the MMPA. It will include a jeopardy analysis. It is important to note that the negligible impact analysis under MMPA is a significantly lower bar than a jeopardy analysis under the Endangered Species Act and also that the negligible impact analysis is conducted at the SBS stock unit while the jeopardy analysis is conducted at the globally listed species unit. Finally, the BLM is planning to publish a draft EA for the seismic operations as early as Monday September 10<sup>th</sup>, with a provisional Finding of No Significant Impact.

### **III. Positions of Interested Parties**

There is high level of interest, both in support and in opposition to, oil and gas development in the Coastal Plain of the Arctic National Wildlife Refuge. There is a strong desire to obtain seismic coverage this coming winter so that information is available to inform lease sales and more specifically and strategically focus development.

### **IV. Potential Issues/Conflicts**

Opening of the Coastal Plain of the Arctic National Wildlife Refuge to oil and gas development is a high priority to the Administration and the Alaska Congressional Delegation.

### **V. Communications and Outreach**

Outreach Lead: Dr. Patrick Lemons, (907) 786-3800

Affected States: Alaska

Media POC: Sara Boario, Assistant Regional Director, External Affairs 907-786-3431

Congressional: The Alaska Congressional delegation is updated as needed.

State Contacts: Bruce Dale, Director Division of Wildlife Conservation, Alaska  
Department of Fish and Game

Other Contacts: Mary Colligan, Assistant Regional Director, Fisheries and Ecological  
Services, USFWS Alaska Region