**Billing Code**

**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**[Docket No. FWS–R7–ES–2025–0021; FXES111607MRG01–256–FF07CAMM00]**

# Marine Mammals; Proposed Incidental Harassment Authorization for the Southern Beaufort Sea Stock of Polar Bears and Pacific Walruses in West Harrison Bay, AK; Draft Environmental Assessment

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Notice of receipt of application; notice of availability of proposed authorization and draft environmental assessment; request for comments.

**SUMMARY:** We, the U.S. Fish and Wildlife Service, in response to a request under the Marine Mammal Protection Act of 1972, as amended, from Narwhal LLC, propose to authorize nonlethal, incidental take by harassment of small numbers of Pacific walruses (*Odobenus rosmarus divergens*) and Southern Beaufort Sea (SBS) polar bears (*Ursus maritimus*) between August 1, 2025, and July 31, 2026. The applicant requested this authorization for take by harassment that may result from activities associated with shallow hazard surveys, preliminary field surveys, exploratory drilling operations, and summer cleanup activities in West Harrison Bay, Alaska. This proposed authorization, if finalized, will be for up to 15 takes of walruses and 13 takes of polar bears by Level B harassment only. No take by injury or mortality is requested, expected, or proposed to be authorized. We invite comments on the proposed incidental harassment authorization and the accompanying draft environmental assessment from the public and local, State, Tribal, and Federal agencies.

**DATES:** Comments must be received by [**INSERT DATE 30 DAYS AFTER THE DATE OF PUBLICATION IN THE *FEDERAL REGISTER***].

**ADDRESSES:** *Document availability:* You may view supplemental information at https://www.regulations.gov under Docket No. FWS–R7–ES–2025–0021. Alternatively, you

may request these documents from the person listed under **FOR FURTHER INFORMATION CONTACT**.

*Comment submission:* You may submit comments on the proposed authorization by one of the following methods:

- *Electronic submission:* Go to the Federal eRulemaking Portal: https://www.regulations.gov. In the Search box, enter FWS–R7–ES–2025–0021, which is the docket number for this rulemaking action. Then, click on the Search button. On the resulting page, in the panel on the left side of the screen, under the Document Type heading, check the Notice box to locate this document. You may submit a comment by clicking on "Comment." Comments must be submitted to https://www.regulations.gov before 11:59 p.m. (Eastern Time) on the date specified in DATES.
- *U.S. mail:* Public Comments Processing, Attn: Docket No. FWS–R7–ES–2025–0021, U.S. Fish and Wildlife Service, MS: PRB (JAO/3W), 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments at https://www.regulations.gov. You may request that we withhold personal identifying information from public review; however, we cannot guarantee that we will be able to do so. See **Request for Public Comments** for more information.

**FOR FURTHER INFORMATION CONTACT:** Stephanie Burgess, by email at r7mmmregulatory@fws.gov, by telephone at 907–786–3800, or by U.S. mail at U.S. Fish and Wildlife Service, MS 341, 1011 East Tudor Road, Anchorage, AK 99503. Individuals in the United States who are deaf, deafblind, hard of hearing, or have a speech disability may dial 711 (TTY, TDD, or TeleBraille) to access telecommunications relay services. Individuals outside the United States should use the relay services offered within their country to make international calls to the point-of-contact in the United States.

**SUPPLEMENTARY INFORMATION:**

**Background**

Section 101(a)(5)(D) of the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361, et seq.), authorizes the Secretary of the Interior (Secretary) to allow, upon request, the incidental, but not intentional, taking by harassment of small numbers of marine mammals in response to requests by U.S. citizens (as defined in title 50 of the Code of Federal Regulations (CFR) in part 18, at 50 CFR 18.27(c)) engaged in a specified activity (other than commercial fishing) in a specified geographic region during a period of not more than 1 year. The Secretary has delegated authority for implementation of the MMPA to the U.S. Fish and Wildlife Service (FWS or we). According to the MMPA, the FWS shall allow this incidental taking by harassment if we make findings that the total of such taking for the 1-year period:

(1) is of small numbers of marine mammals of a species or stock;

(2) will have a negligible impact on such species or stocks; and

(3) will not have an unmitigable adverse impact on the availability of the species or stock for taking for subsistence use by Alaska Natives.

If the requisite findings are made, we issue an authorization that sets forth the following, where applicable:

(a) permissible methods of taking;

(b) means of effecting the least practicable adverse impact on the species or stock and its habitat and the availability of the species or stock for subsistence uses; and

(c) requirements for monitoring and reporting of such taking by harassment, including, in certain circumstances, requirements for the independent peer review of proposed monitoring plans or other research proposals.

The term “take” means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill, any marine mammal. “Harassment” for activities other than military readiness activities or scientific research conducted by or on behalf of the Federal Government means any act of

pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (the MMPA defines this as "Level A harassment"), or (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 defines this as "Level B harassment").

The terms "negligible impact" and "unmitigable adverse impact" are defined in 50 CFR 18.27 (i.e., regulations governing small takes of marine mammals incidental to specified activities) as follows: "Negligible impact" is 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. "Unmitigable adverse impact" means an impact resulting from the specified activity: (1) that is likely to reduce the availability of the species to a level insufficient for a harvest to meet subsistence needs by (i) causing the marine mammals to abandon or avoid hunting areas, (ii) directly displacing subsistence users, or (iii) placing physical barriers between the marine mammals and the subsistence hunters; and (2) that cannot be sufficiently mitigated by other measures to increase the availability of marine mammals to allow subsistence needs to be met.

The term "small numbers" is also defined in 50 CFR 18.27. However, we do not rely on that definition here as it conflates "small numbers" with "negligible impacts." We recognize "small numbers" and "negligible impacts" as two separate and distinct requirements when reviewing requests for incidental harassment authorizations (IHA) under the MMPA (see *Natural Res. Def. Council, Inc.* v. *Evans*, 232 F. Supp. 2d 1003, 1025 (N.D. Cal. 2003)). Instead, for our small numbers determination, we estimate the likely number of marine mammals to be taken and evaluate if that number is small relative to the size of the species or stock.

The term "least practicable adverse impact" is not defined in the MMPA or its enacting regulations. For this IHA, we ensure the least practicable adverse impact by requiring mitigation measures that are effective in reducing the impact of specified activities, but not so restrictive as

to make specified activities unduly burdensome or impossible to undertake and complete.

If the requisite findings are made, we shall issue an IHA, which may set forth the following, where applicable: (i) permissible methods of taking; (ii) other means of effecting the least practicable impact on the species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of the species or stock for taking for subsistence uses by coastal-dwelling Alaska Natives (if applicable); and (iii) requirements for monitoring and reporting take by harassment.

**Summary of Request**

On November 4, 2024, the FWS received a request on behalf of Narwhal LLC (ECO49 Consulting LLC 2024) for authorization to take by nonlethal incidental harassment Pacific walruses (*Odobenus rosmarus divergens*) and Southern Beaufort Sea (SBS) polar bears (*Ursus maritimus*) during shallow hazard surveys (SHS), preliminary field surveys, exploratory drilling operations, and summer cleanup activities in West Harrison Bay, Alaska, for a period between August 1, 2025, and July 31, 2026. Their request also included a proposed Polar Bear and Pacific Walrus Safety, Awareness, and Interaction Plan. The FWS requested further information on March 10, 2025. We discussed with the applicant operational timelines, project area modifications, and mitigation measures. Narwhal submitted a revised application on April 3, 2025. The FWS deemed the revised request dated April 2025 (received by the FWS April 3, 2025; hereafter referred to as the "Request"), adequate and complete on April 10, 2025.

**Description of Specified Activities and Specified Geographic Region**

The specified activities described in the request consist of SHS, preliminary field surveys, exploratory drilling operations, and summer cleanup activities in West Harrison Bay, Alaska (figures 1 and 2, below; ECO49 Consulting LLC 2024).

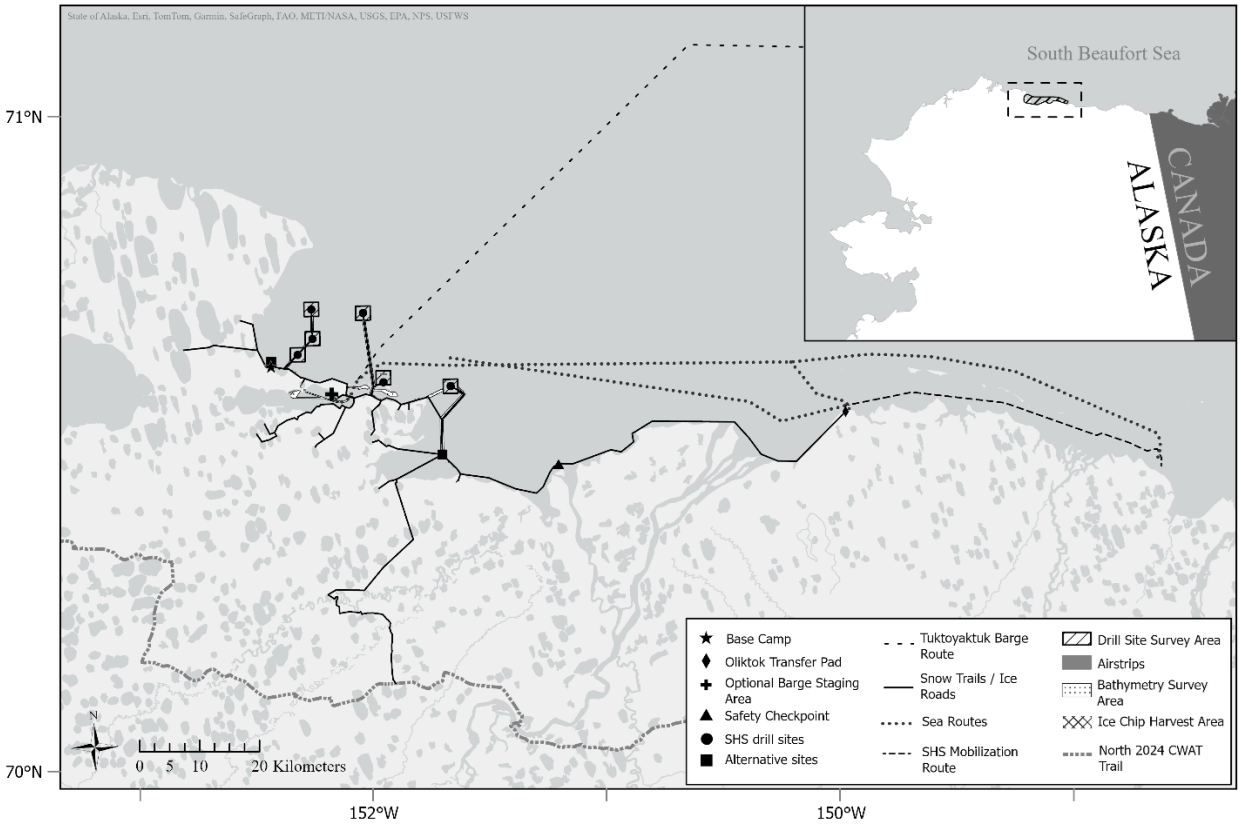


Figure 1—Specific geographic region of the proposed exploratory drilling operations and associated activities in West Harrison Bay, Alaska

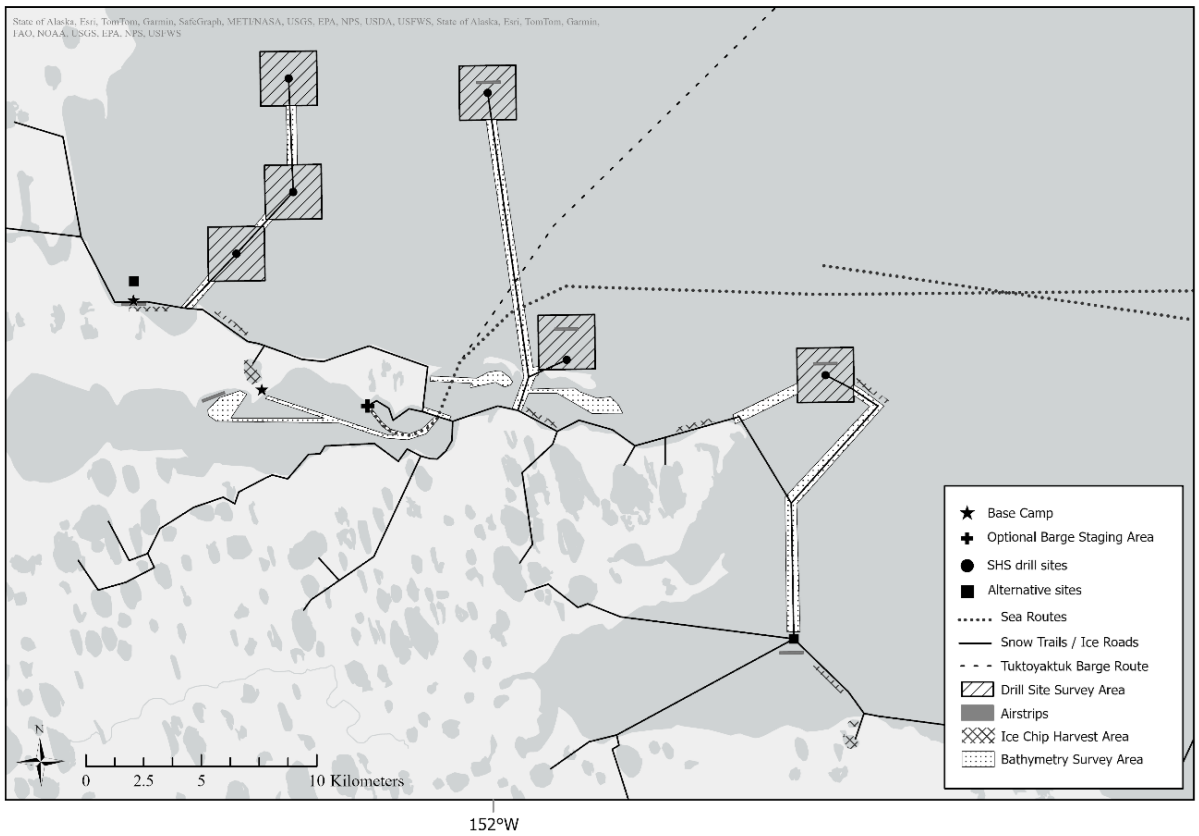

Figure 2 - Enhanced view to display greater detail of West Harrison Bay within the specified geographic region.

*Archeological*

Narwhal will conduct airborne archeological surveys of areas with potential soil disturbance, including shallow offshore areas. Surveys will be conducted via helicopter maintaining a minimum flight altitude of 457 m (except for landing/take-off or when forced lower by unsafe weather conditions), with aerial transect widths of approximately 1.3 kilometers (km) (0.8 miles [mi]). If necessary, the archeological survey crew will land to investigate landforms that may contain cultural or historical resources. During these surveys, helicopters will be based out of Deadhorse, Alaska. Surveys are expected to last approximately three days, with one flight per day. These surveys must occur during the snow-free season, which is typically mid- to late-July through early-September.

*Lake Surveys and Thermistor Installation*

To support ice road and ice pad construction, Narwhal will extract freshwater from lakes inland from West Harrison Bay. These lakes have been preliminarily identified in the request as the large lakes found along Narwhal's proposed water access roads (see figures 1 and 2). However, to confirm that the lakes are sufficient water sources, Narwhal will conduct lake surveys beginning on August 1, 2025, and lasting 15 days. To conduct the surveys, crews of up to four personnel will transit via helicopter maintaining a minimum flight altitude of 457 m (except for landing/take-off or when forced lower by unsafe weather conditions), originating from Deadhorse, and then on foot along proposed tundra access routes, where they will collect fish, bathymetric, and water quality data from each proposed freshwater supply lake. During lake surveys, thermistors (temperature sensors) may be installed in the tundra to depths of 30 centimeters (cm) (11.8 inches [in]) along tundra access routes to confirm that soil temperature is acceptable to support tundra travel during lake access in the winter.

*Shallow Hazard Surveys*

Narwhal will evaluate the subsea strata in the areas of proposed offshore exploration wells. Beginning in August 2025, Narwhal will use an echosounder/fathometer, side scan sonar, sub-bottom profiler, sparker, mini vibracore sampler, and a 1,721-cubic-centimeter ($cm^3$) (105-cubic-inch [$in^3$]) generator and injector airgun to perform SHS at each of the six proposed offshore exploratory well locations within West Harrison Bay (see figures 1 and 2). These investigations will enable site selection for exploratory drilling based on the most suitable seafloor and subsurface characteristics. The surveys will collect data on the bathymetry of the area, and also include side-scan sonar, sub-bottom profiling, high-resolution three-dimensional (3D) seismic imaging, and possibly vibracore sediment sampling. These instruments will also be used to evaluate the potential for offshore archeological resources in the proposed well locations. Two additional sites are in 0.6 meters (m) (2 feet [ft]) of water depth or less and will be evaluated using alternative techniques approved by the AOGCC rather than techniques used for deeper water. Of the eight potential drilling locations, Narwhal anticipates drilling no more than five wells during January to April 2026. The sixth, seventh and eighth sites will serve as alternate drilling locations.

The SHS program will be mobilized by vessel out of West Dock in Prudhoe Bay or from Oliktok Point. Periodic resupply, logistics support, and personnel transfers for the SHS program are planned to originate from Oliktok Point. Narwhal estimates daily vessel trips between Oliktok Point and the West Harrison Bay work area will be required over a period of 45 days during SHS operations. The 3D seismic survey will require one vessel equipped with a single airgun, one vessel responsible for deploying and retrieving geophones on the seafloor, and one to two support vessels for berthing crew and expediting. The non-3D seismic SHS work (bathymetry, sub-bottom profiler, side scan sonar, and sparker) will be conducted from a single vessel, with the possible inclusion of one additional vessel for additional berth capacity, if necessary. The berthing vessel may transit to Oliktok Point during the day, if necessary, to pick up supplies or transport personnel.

The sound-producing instruments for SHS include an echosounder/fathometer, a side-scan sonar, a sub-bottom profiler, and a sparker. The echosounder and side-scan sonar will be operated at a frequency at or above 200 kilohertz (kHz). The sub-bottom profiler and sparker will produce sounds within a frequency range of 2 kHz to 16 kHz and 300 hertz (Hz) to 1.5 kHz, respectively, and at an estimated sound source level of 202 decibels referenced to a pressure of 1 microPascal (dB re 1µPa). This sound production, however, will be highly directional and focused within a beam width of 20 degrees.

Vibracore sampling may be required at the exploratory drilling locations. Narwhal intends to use a mini vibracore sampler that is designed for shallow water. Sampling would entail a core barrel oscillated by an electric motor into the sediment for 1 to 2 minutes at a time, with the entire coring process lasting up to 1 hour. Similar vibracoring equipment has been shown to create a sound pressure level (SPL) of 187.4 dB re 1µPa in the Chukchi Sea at a frequency range of 10 kHz to 20 kHz (Chorney et al. 2011).

The SHS program will also include high-resolution 3D seismic surveys at the proposed exploratory well locations. Surveys will be completed using a 1,721-$cm^3$ (105- $in^3$) generator and injector airgun that is towed behind a survey vessel perpendicularly over a series of geophone sound receivers that have been anchored to the seafloor. Geophones will be embedded at a maximum depth of 2 m (6.6 ft) in a grid pattern. The airgun will fire every 12.5 m (41 ft) along the track lines, resulting in firing once every 6–7 seconds while traveling at a speed of approximately 2 m (6.6 ft) per second.

Narwhal submitted with their request a sound transmission loss model for the anticipated noise produced by the airgun. Using the Gundalf Designer software package, Narwhal's contracted acousticians modeled the peak sound pressure level (SPL) anticipated from a single airgun shot to be 231.0 dB re 1µPa at 1 m (3.3 ft) from the sound source (ECO49 Consulting LLC 2024). The cumulative (unweighted) sound exposure level ($SEL_{CUM}$) was also assessed using 192 airgun shots (which represented one transect line) and was 193.0 dB re 1$\mu Pa^2$ at 1 m

(3.3ft) from the sound source. Approximately 480 geophones will be deployed per potential drilling location, and they will be spaced every 50 m (164 ft). Geophones will be anchored into the seafloor using a wood or metal pole to a maximum depth of 2 m (6.6 ft). The survey will occur in a sequence of geophone placement for 2 days, followed by airgun deployment for 1 or 2 days (for up to 12 hours per day). While airgun deployment occurs, the next grid of geophones will be laid in a second location, and during airgun deployment at the second location, geophones will be retrieved from the first location. This sequence of events will continue for approximately 30 days.

*Advance Equipment Staging*

Equipment may be staged in advance of winter activities, to reduce the total number of all-terrain vehicle (ATV) trips and time required for mobilizing project equipment to West Harrison Bay. If equipment is staged in advance, approximately 120 fewer trips will be needed from Oliktok Point to West Harrison Bay. This would allow Narwhal to begin ice road and ice pad construction operations in early December 2025 before the sea ice road from Oliktok Point to West Harrison Bay is complete.

Equipment will potentially be staged in one of two locations. The first location uses an existing gravel airstrip on the Kogru River, which would be covered with a series of interlocking tundra mats as early as August 2025. Barges would then offload materials from the Kogru River onto the tundra mats and airstrip. This option is dependent upon sufficient water depths in the Kogru River near the airstrip. Bathymetry surveys will be conducted as described above to determine the option's suitability. The second option would involve the placement of six to eight empty barges, a camp barge, and fuel barge in a protected location in West Harrison Bay. These barges would be frozen in place in the fall of 2025. The barges would be anchored to the beach and tied together to provide a continuous staging platform for equipment. Barges may also be anchored into the seafloor, which consists of fine-grained clay and silt, at a depth of 0.5–2 m (1.6–6.6 ft).

Approximately 378,541 liters (100,000 gallons) of fuel would be staged during the advanced staging process. A two-person caretaker crew would remain onsite from September 15 until November 15 to monitor fuel and cargo. This crew would have a small skid camp equipped with a generator, kitchen, bunks, shower, waterless toilet, and heat. All food waste and trash would be kept inside and stored in secure containers. The personnel would be resupplied by a helicopter on a weekly basis, and would also be equipped with bear deterrence equipment, emergency response equipment, and communications. The barges would be monitored after December 1, 2025, by the startup crew onsite to conduct early development tasks for the project and prepare the equipment and materials for deployment to the first construction location if advanced staging is used.

*Maternal Den Surveys and Den Exclusion Zones*

Narwhal will conduct two aerial infrared (AIR) maternal den surveys to identify active polar bear dens in the area. The surveyors will use AIR cameras on fixed-wing aircraft with flights flown between 244–457 m (800–1,500 ft) above ground level at a speed of <185 km per hour (km/h) (<115 miles per hour [mph]). These surveys will be concentrated on areas within 1.6 km (1 mi) of project activities that would be suitable for polar bear denning activity such as drainages, banks, bluffs, or other areas of topographic relief. The first survey will be conducted between December 1 and December 25, 2025, and the second survey will be conducted between December 15, 2025, and January 10, 2026, with a minimum of 24 hours between surveys.

Narwhal will avoid an 805 m operational exclusion zone around known polar bear dens during the denning season (November to April, or until the female and cubs leave the area). Should previously unknown occupied dens be discovered within 805 m of activities, local work will immediately cease. All personnel and vehicles will be moved beyond the den exclusion zone, to the extent practical. Narwhal will contact the FWS for guidance and to evaluate these instances on a case-by-case basis to determine the appropriate action. Potential actions may include rerouting of access trails or roads, cessation, or modification of work, conducting

additional monitoring or other avoidance practices. Narwhal will coordinate with the FWS and implement additional measures specified by the FWS.

*Coastal Sea Ice Trail*

As soon as there is stable, grounded sea ice, construction will begin on a coastal sea ice road from Oliktok Point to West Harrison Bay to assist in equipment mobilization. Construction is estimated to begin in early December 2025. A small, 15- to 20-person camp will be created on a 0.008-square-kilometer ($km^2$) (0.003-square-mile [$mi^2$]) ice pad adjacent to Oliktok Point on grounded sea ice. The crew will then continue constructing a sea ice road over the Colville River Delta, which will require thickening to support heavy equipment in three to four channels of the Colville River. Thickening will take approximately 25 days. Approximately six seawater pumping units will travel in six trips to the Colville River Delta from Oliktok Point and remain in the general location during the thickening phase of construction. Crews will take approximately six trips per day between Oliktok Point and the western edge of the delta for resupply. After the Colville River crossings are thickened, the remainder of the sea ice road will be completed in approximately 5 days. The second segment of road construction will require a smaller, two-person crew and two ATVs to scout the road and create spatial reference points. Total construction of the coastal sea ice trail is expected to take 30 days.

*Equipment Mobilization*

All equipment, including Rolligons, Steiger tractors, PistenBullys, Tucker Sno-Cats, ATVs, and a drilling rig, will be moved to West Harrison Bay over the coastal sea ice road. Camp and ice construction equipment will be transported first, followed by exploratory drilling equipment. The coastal sea ice road is anticipated to have vehicle traffic from the time of its construction to the approximate end of demobilization on May 5, 2026.

*Local Sea Ice Road/Trail and Sea Ice Pad Construction*

Narwhal will construct local sea ice roads or trails in West Harrison Bay to support drilling operations. Sea ice roads are created by clearing and grading snow, then pumping

seawater through drilled holes in the ice to achieve the desired ice thickness. Freshwater is often used to strengthen the top layer of ice on the road. Nearby freshwater lakes will be used as the source of freshwater, which will be accessed by constructing onshore ice roads and trails (see figures 1 and 2). Alternatively, sea ice trails may be created and used by tracked vehicles, which do not require capping with fresh water. The final decision to construct sea ice trails versus sea ice roads will be determined by several factors including freshwater availability, the availability of ATV-compatible equipment (e.g., skid mounted vac unit versus vac truck on wheels), and project schedule. Regardless of whether roads or trails are constructed, freshwater access is required for ice pad construction, exploratory drilling operations, and use in camp.

Onshore ice trails/roads will be constructed on land to access freshwater lakes. Initial ground disturbance activities including staking and packing snow, flooding, grading, and other construction activities may begin as soon as the first week of December 2025 if advance staging occurs. If advanced staging does not occur, construction will begin in early January 2026. Narwhal may choose to construct a northward spur trail originating from the North Slope Borough Community Winter Access Trail (CWAT; figure 1). The construction of this spur would provide Narwhal an additional route of mobilization and demobilization if environmental conditions prevent construction of the sea ice trail. The FWS considered the spur in our analyses, however, Narwhal is not requesting authorization for take incidental to activities on the CWAT. All ice road and/or trail construction will be initiated by March 1, 2026.

Ice pad construction will be concurrent with the construction of ice trails or roads and will take approximately 2 to3 weeks depending on water depth and ambient temperatures. After ice thickening, ice pads will consist of a circular area of raised, grounded ice with a diameter of approximately 220 m (722 ft). In-depth construction methodology is available in Narwhal's associated IHA request (ECO49 Consulting LLC 2024).

*Temporary Airstrip and Camp Facilities*

Narwhal will construct temporary airstrips on grounded sea ice adjacent to each ice pad for the four easternmost well sites (figures 1 and 2). An additional airstrip will be constructed adjacent to one of the two potential base camp sites (figure 2). Only one base camp sea ice airstrip will be constructed, however we analyzed the impacts of both options in our take estimates to avoid underestimating impacts from potential activities. Construction of each temporary airstrip will entail plowing snow off the sea ice to provide a smooth surface for aircraft and installing perimeter lighting for visual flight operations. Initially, aircraft equipped with skis will likely be utilized until a freshwater cap can be placed on the airstrip to allow for landings by wheeled aircraft. The airstrip will be 23 m (75.5 ft) wide and 915 m (3,002 ft) long and, if necessary, may be extended to 1,525 m (5,003 ft) in length prior to exploratory drilling operations. Aircraft will use temporary airstrips as early as December 6, 2025, through demobilization by May 5, 2026. Camp facilities will be comprised of modules approximately 3.7 m (12 ft) wide by 18 m (59 ft) long set side by side with an estimated camp footprint size of 100 m (328 ft) by 50 m (164 ft). Sufficient space will be allotted to this area to maintain clear site lines for early detection of polar bears in the vicinity.

*General Aircraft Activity Considerations*

Narwhal will utilize both fixed-wing and rotary aircraft during their operations. Except for take-off and landing, aircraft will not operate at altitudes lower than 457 m within 805 m of polar bears or walruses observed on ice, land, or in water. Helicopters will not hover, circle, or land within this distance. When weather conditions do not allow a 457-m flying altitude, aircraft may be operated below this altitude for the minimum duration necessary to maintain aircraft safety. Aircraft will not fly over any identified Pacific walrus haulouts. Aircraft will not fly directly over or within 805 m of areas of known polar bear or walrus concentrations unless aircraft departure to avoid freeze up, medical supply delivery, fuel resupply, or other unforeseen critical health or safety concerns require. Aircraft routes will be planned to minimize potential conflicts with active or projected polar bear or walrus subsistence hunting activity as determined through

community consultations. Aircraft will not land within 805 m of observed polar bears or walrus. If a polar bear or group of bears is observed while the aircraft is grounded, personnel will board the aircraft and leave the area. Aircraft will not be operated in such a way as to separate members of a group of polar bears or walruses from other members of the group.

*Exploratory Drilling*

Drilling operations will begin following successful sea ice road and ice pad construction. The exploratory drilling rig will be assembled on site over a period of 7 to 10 days. Following assembly, drilling is estimated to take 21 to 30 days per well, including moving to a new site. Operations will occur 24 hours a day. Rig moves between sites are anticipated to take 5 days or fewer and require 60 truck trips. Drilling is expected to take approximately 86 days in total. All exploratory wells will be plugged and abandoned during the 2025 – 2026 winter season.

*Demobilization and Summer Cleanup*

All project equipment and materials will be removed from the West Harrison Bay area following completion of exploratory drilling. Demobilization will require up to 200 ATV trips from the drilling locations to Oliktok Point. Once the tundra is snow-free in July 2025, Narwhal will clean up debris associated with the project using a small helicopter crew. One helicopter, originating in Deadhorse, will fly for approximately 6 hours per day, to complete six trips with an estimated total of 60 landing events and 60 take-off events. Helicopter will maintain a minimum flight altitude of 457 m except for landing or take-off events or if forced lower by unsafe weather conditions.

**Description of Marine Mammals in the Specified Geographic Region**

The SBS polar bears and Pacific walruses are the only marine mammal species under the FWS's jurisdiction likely to be found within the specified geographic region. Information on range, stocks, biology, and climate impacts on Pacific walruses and SBS polar bears can be found in the supplemental information (available as described above in **ADDRESSES** section).

## Potential Impacts of the Specified Activities on Marine Mammals

### *Surface-Level Impacts on Polar Bears*

Disturbance impacts on polar bears are influenced by the type, duration, intensity, timing, and location of the source of disturbance. Disturbance from the specified activities would originate primarily from helicopter overflights, tundra travel, vessel activity, seismic data acquisition, mobilization and operation of camp facilities, and cleanup activities. The noises, sights, and smells produced by these activities could elicit variable responses from polar bears, ranging from avoidance to attraction. When disturbed by noise, animals may respond behaviorally by walking, running, or swimming away from a noise source, or physiologically via increased heart rates or hormonal stress responses (Harms et al. 1997; Tempel and Gutiérrez 2003). However, individual response to noise disturbance can be based on previous interactions, sex, age, and maternal status (Andersen and Aars 2008; Dyck and Baydack 2004). Noise and odors could also attract polar bears to work areas. Attracting polar bears to these locations could result in human-polar bear interactions, unintentional harassment, intentional hazing, or possible lethal take in defense of human life. This proposed IHA would authorize only the nonlethal, incidental, unintentional take of polar bears that may result from the specified activities and would require mitigation measures to manage attractants in work areas and reduce the risk of human-polar bear interactions.

### *Human-Polar Bear Interactions*

A larger percentage of polar bears are spending more time on land during the open water season, which may increase the risk for human-polar bear interactions (Atwood et al. 2015; Rode et al. 2022). Polar bear interaction plans, personnel training, attractants management, and polar bear monitoring are mitigation measures used to reduce human-polar bear interactions and minimize the risks to polar bears and humans when interactions occur. Efficient management of attractants (e.g., human food, garbage) can prevent polar bears from associating humans with food, which lowers the risk of human-polar bear interactions (Atwood and Wilder 2021). Polar

bear interaction plans detail the policies and procedures that will be implemented by Narwhal to avoid attracting and interacting with polar bears as well as minimizing impacts to the polar bears. Interaction plans also detail how to respond to the presence of polar bears, the chain of command and communication, and required training for personnel. Information gained from monitoring polar bears near industrial infrastructure and activities can be useful for better understanding polar bear distribution, behavior, and interactions with humans. Technology that may be used to facilitate detection and monitoring of polar bears includes bear monitors and thermal cameras. It is possible that human-polar bear interactions may occur during the specified activities, and mitigation measures will be implemented by Narwhal to minimize the risk of human-polar bear interactions during the specified activities.

From mid-July to mid-November, SBS polar bears can be found in large numbers and high densities on barrier islands, along the coastline, and in the nearshore waters of the Beaufort Sea, particularly on and around Barter and Cross Islands (Wilson et al. 2017). This distribution leads to a significantly higher number of human-polar bear interactions on land and at offshore structures during the open-water season than other times of the year. Polar bears that remain on the multi-year pack ice are not typically present in the ice-free areas where vessel traffic occurs, as barges and vessels associated with industry activities travel in open water and avoid large ice floes.

On land, most polar bear observations occur within 2 km (1.2 mi) of the coastline based on polar bear monitoring reports. Facilities within the offshore and coastal areas are more likely to be approached by polar bears, and they may act as physical barriers to polar bear movements. As polar bears encounter these facilities, the chances for human-polar bear interactions increase. However, polar bears have frequently been observed crossing existing roads and causeways and they appear to traverse the human-developed areas as easily as the undeveloped areas based on monitoring reports.

*Effects of Aircraft Overflights on Polar Bears*

Polar bears experience increased noise and visual stimuli when fixed-wing aircraft or helicopters fly above them, which may elicit a biologically significant behavioral response. Sound frequencies produced by aircraft will likely fall within the hearing range of polar bears (Nachtigall et al. 2007) and will be audible to polar bears during flyovers or when operating in proximity to polar bears. Polar bears likely have acute hearing, with previous sensitivities demonstrated between 1.4 and 22.5 kHz (tests were limited to 22.5 kHz) (Nachtigall et al. 2007). When exposed to high-energy sound, this hearing range may become impaired temporarily (called temporary threshold shift, or TTS) or permanently (PTS). A PTS occurs when noise exposure causes damage to hair cells within the inner ear system (Ketten 2012). Although the effects of PTS are, by definition, permanent, PTS does not equate to total hearing loss. A TTS is a noise-induced threshold shift in hearing sensitivity that fully recovers over time (Finneran 2015). Species-specific TTS and PTS thresholds have not been established for polar bears at this time, but TTS and PTS thresholds have been established for the general group "other marine carnivores," which includes polar bears (Southall et al. 2019). Through a series of systematic modeling procedures and extrapolations, Southall et al. (2019) generated modified noise exposure thresholds for both in-air and underwater sound (table 1, table 2).

Table 1—Temporary threshold shift (TTS) and permanent threshold shift (PTS) thresholds for in-air sounds established by Southall et al. (2019) through modeling and extrapolation for "other marine carnivores," which includes polar bears.

| TTS | | | PTS | | |
|---|---|---|---|---|---|
| Non-impulsive | Impulsive | | Non-impulsive | Impulsive | |
| $SEL_{CUM}$ | $SEL_{CUM}$ | Peak SPL | $SEL_{CUM}$ | $SEL_{CUM}$ | Peak SPL |
| 157 | 146 | 170 | 177 | 161 | 176 |
| **NOTE: Values are weighted for other marine carnivores' hearing thresholds and given in cumulative sound exposure level ($SEL_{CUM}$ dB re 20µPa) for impulsive and nonimpulsive sounds, and unweighted peak sound pressure level in air (dB re 20µPa) for impulsive sounds only.** | | | | | |

Federal Aviation Administration test aircraft produced sound at all frequencies measured (50 Hz to 10 kHz) (Healy 1974). At frequencies centered at 5 kHz, jets flying at 300 m (984 ft) produced 1/3 octave band noise levels of 84 to 124 dB, propeller-driven aircraft produced 75 to 90 dB, and helicopters produced 60 to 70 dB (Richardson et al. 1995). Thus, the frequency and

level of airborne sounds typically produced by aircraft are unlikely to cause TTS or PTS unless polar bears are very close to the sound source.

Although neither TTS nor PTS is anticipated during the specified activities, impacts from aircraft overflights have the potential to elicit biologically significant behavioral responses from polar bears. Exposure to aircraft overflights is expected to result in short-term behavior changes, such as walking running, or ceasing to rest and, therefore, has the potential to be energetically costly. Polar bears observed during intentional aircraft overflights conducted to study impacts of aircraft on polar bear responses, with an average flight altitude of 143 m (469 ft), exhibited biologically meaningful behavioral responses during 66.6 percent of aircraft overflights. These behavioral responses were significantly correlated with the aircraft's altitude, the bear's location (e.g., coastline, barrier island), and the bear's activity (Quigley 2022; Quigley et al. 2024). Polar bears associated with dens exhibited various responses that, ranged from increased head movement and observation of the disturbance to the initiation of rapid movement and/or den abandonment when exposed to aircraft flying at altitudes of 150 m or less (Larson et al. 2020). Aircraft activities can impact polar bears across all seasons; however, aircraft have a greater potential to disturb both individuals and groups of polar bears on land during the summer and fall. These onshore polar bears are primarily fasting or seeking alternative terrestrial foods (Cherry et al. 2009; Griffen et al. 2022), and polar bear responses to aircraft overflights may result in metabolic costs to limited energy reserves. To reduce potential disturbance of polar bears during aircraft activities, mitigation measures, such as minimum flight altitudes over polar bears and their frequently used areas and flight restrictions around known polar bear aggregations, will be conducted when safe to perform these operations during aircraft activities.

*Underwater Sounds*

Noise exposure criteria for identifying underwater noise levels capable of causing Level A harassment (injury) to marine mammal species, including polar bears and walruses, have been established using the same methods as those used by the National Marine Fisheries Service (NMFS) (Southall et al. 2019). These criteria are based on estimated levels of sound exposure capable of causing a permanent shift in hearing sensitivity (i.e., a permanent threshold shift (PTS) (NMFS 2018)). A PTS occurs when noise exposure causes damage to hair cells within the inner ear system (Ketten 2012). Although the effects of PTS are, by definition, permanent, PTS does not equate to total hearing loss.

Sound exposure thresholds incorporate two metrics of exposure: the peak level of instantaneous exposure likely to cause PTS, and the cumulative sound exposure level ($SEL_{cum}$) during a 24-hour period. They also include weighting adjustments for the sensitivity of different species to varying frequencies. PTS-based injury criteria were developed from theoretical extrapolation of observations of temporary threshold shifts (TTS) detected in lab settings during sound exposure trials (Finneran 2015). A TTS is a noise-induced threshold shift in hearing sensitivity that fully recovers over time (Finneran 2015). Southall et al. (2019) developed TTS thresholds for polar bears and walruses, both of which are included in the "other marine carnivores" category, of 188 dB $SEL_{CUM}$ for impulsive underwater sounds and 199 dB $SEL_{CUM}$ for nonimpulsive (continuous) underwater sounds. Based on these analyses, Southall et al. (2019) predict that PTS for polar bears and walruses will occur at 232 dB peak or 203 dB $SEL_{CUM}$ for impulsive underwater sound and 219 dB $SEL_{CUM}$ for nonimpulsive underwater sound (table 2).

Table 2—Temporary threshold shift (TTS) and permanent threshold shift (PTS) thresholds for in-water sounds established by Southall et al. (2019) through modeling and extrapolation for "other marine carnivores," which includes polar bears and walruses.

| TTS | | | PTS | | |
|---|---|---|---|---|---|
| Non-impulsive | Impulsive | | Non-impulsive | Impulsive | |
| $SEL_{CUM}$ | $SEL_{CUM}$ | Peak SPL | $SEL_{CUM}$ | $SEL_{CUM}$ | Peak SPL |

| | | | | | |
|---|---|---|---|---|---|
| 199 | 188 | 226 | 219 | 203 | 232 |

**NOTE: Values are weighted for other marine carnivores' hearing thresholds and given in cumulative sound exposure level ($SEL_{CUM}$ dB re 1 µPa) for impulsive and nonimpulsive sounds, and unweighted peak sound pressure level in water (dB 1µPa) for impulsive sounds only.**

The NMFS (2018) Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing does not identify thresholds for avoidance of Level B harassment, but NMFS has adopted a 160-dB threshold for Level B harassment from exposure to impulsive noise and a 120-dB threshold for continuous noise (HESS 1999; NOAA 2005). These thresholds were developed from observations of mysticete (baleen) whales responding to airgun operations (e.g., Malme et al. 1983; Malme and Miles 1983; Richardson et al. 1986, 1995) and from equating Level B harassment with noise levels capable of causing TTS in lab settings.

We have evaluated the NMFS-recommended Level B harassment thresholds and determined that the threshold of 120 dB for nonimpulsive noise is not applicable to polar bears or walruses. The 120-dB threshold is based on studies in which gray whales (*Eschrichtius robustus*) were exposed to experimental playbacks of industrial noise (Malme et al. 1983; Malme and Miles 1983). During these playback studies, southern sea otter (*Enhydra lutris nereis*) responses to industrial noise were also monitored (Riedman 1983, 1984). While gray whales exhibited avoidance to industrial noise at the 120-dB threshold, there was no evidence of disturbance reactions or avoidance in southern sea otters. Southall et al. (2019) includes sea otters, polar bears, and walruses in the same marine mammal hearing group of "other marine carnivores," so a potential polar bear or walrus response to 120-dB underwater sound is likely more similar to that of sea otters than gray whales. Thus, given the different range of frequencies to which "other marine carnivores" and "low frequency cetaceans" are sensitive (Southall et al. 2019), the NMFS 120-dB threshold based on gray whale behavior is not appropriate for predicting behavioral responses for polar bears or walruses, particularly for low-frequency sound. Based on the best available scientific information about other marine carnivores, which

include polar bears and walruses, the FWS has set 160 dB of received underwater sound—for both impulsive and nonimpulsive sound sources— as a threshold for take by Level B harassment.

The NMFS (2024) has recently updated their Technical Guidance for Assessing the Effects of Anthropogenic Sound on Marine Mammal Hearing utilizing the work of Southall et al. (2019). The FWS is evaluating the new auditory injury criteria from NMFS to determine whether they are appropriate for FWS trust species. Pending the outcome of those evaluations, the FWS will continue to use the previous version of the technical guidance (NMFS 2018) in our estimates of potential harassment via underwater sound.

*Effects of In-Water Activities on Polar Bears*

In-water sources of sound, such as bathymetric surveys, side-scan sonar, vibracore sampling, high-resolution 3D seismic surveys, or vessel noises are unlikely to disturb polar bears. While exposure to high levels of underwater sound may cause changes in behavior, temporary or permanent changes in hearing sensitivity, or discomfort, polar bears do not typically swim with their heads under water. Additionally, the marine portion of the specified activities will only occur during the open-water season in relatively ice-free, open water, or during the winter months on sea ice. Though polar bears have been observed in open water miles from the ice edge or ice floes, the encounters are relatively rare (although the frequency of such observations may increase due to sea ice change). If bears encounter Narwhal's operations in open water, the effects of such encounters would likely include no more than short-term behavioral disturbance.

While polar bears swim in and hunt from open water, they spend less time in the water than most marine mammals. Stirling (1974) reported that polar bears observed near Devon Island during late July and early August spent 4.1 percent of their time swimming and an additional 0.7 percent engaged in aquatic stalking of prey. More recently, application of tags equipped with time-depth recorders indicate that aquatic activity of polar bears is greater than was previously

thought. In a study published by Lone et al. (2018), 75 percent of polar bears swam daily during open-water months, with animals spending 9.4 percent of their time in July in the water. Both coastal and pack -ice-dwelling animals were tagged, and there were no significant differences in the time spent in the water by animals in the two different habitat types. While polar bears typically swim with their ears above water, there are occasions when a polar bear may dive and therefore have its ears below the surface (Lone et al. 2018).

The specified activities may introduce substantial levels of noise into the marine environment at sound levels capable of causing a behavioral change or temporary or permanent damage to polar bear hearing (table 2). However, the majority of the sound-producing instruments that will be used for SHS do not produce in-water sound above the threshold designated for Level B harassment or they do not produce sound within the hearing range of polar bears. The echosounder and side-scan sonar will be operated at a frequency at or above 200 kilohertz (kHz), which is outside the hearing range for polar bears (Southall et al. 2019). The sub-bottom profiler and sparker will produce sounds within the hearing range of polar bears (2 kHz to 16 kHz and 300 hertz (Hz) to 1.5 kHz, respectively), and at an estimated sound source level above the Level B harassment threshold (202 decibels referenced to a pressure of 1 microPascal (dB re 1µPa)); however, this sound production will be highly directional and focused within a beam width of 20 degrees. The areas of increased sound (>160 dB re 1 µPa, or the Level B harassment threshold) due to airgun sound transmission will be up to 3,188 m (10,459 ft) away from seismic source vessels, but the area in which sound would exceed PTS (or Level A harassment) thresholds would be no more than 10 m (33 ft) from the sound source.

Polar bear behavior is expected to be impacted by the presence of humans and equipment. In 2012 during the open-water season, Shell USA, Inc (Shell) vessels encountered a few polar bears swimming in ice-free water more than 112.6 km (70 mi) offshore in the Chukchi Sea. In those instances, the bears were observed to either swim away from or approach the Shell vessels, sometimes swimming around a stationary vessel before leaving. In at least one

encounter, a polar bear approached, touched, and investigated a stationary vessel from the water before swimming away. We anticipate that polar bears that encounter vessels during the specified activities may have an evasive or curious response, similar to these reports. However, neither curious investigation nor swimming away are likely to result in the polar bear diving, which is typically seen during hunting. Further, we do not anticipate bears diving from ice floes into the water, as West Harrison Bay is anticipated to be ice free during high-resolution 3D seismic surveys.

*Effects to Denning Polar Bears*

Known polar bear dens around the oil fields and other areas of the North Slope are monitored by the FWS. These dens may be discovered opportunistically or through tracking of tagged individuals. However, these sites are only a small percentage of the total active polar bear dens for the SBS stock in any given year. Potential maternal polar bear dens may also be identified using AIR surveys. These surveys are conducted annually by North Slope operators in coordination with the FWS. If potential den locations are identified, operators who are operating under an incidental take authorization are required to coordinate with the FWS to avoid activity or potential disturbance within a designated distance of these areas. However, an unknown polar bear den may be encountered during Narwhal's activities. In instances when a previously unknown den is discovered near North Slope activities, the FWS has provided guidance to operators to implement mitigation measures such as an activity exclusion zone around the den and 24-hour monitoring of the den site.

The responses of denning polar bears to disturbance and the consequences of these responses can vary throughout the denning process. We divide the denning period into four stages when considering impacts of disturbance: den establishment, early denning, late denning, and post-emergence; definitions and descriptions are provided by Woodruff et al. (2022*a*) and are also located in the 2021–2026 Beaufort Sea *Incidental Take Regulations* (ITR) (86 FR 42982, August 5, 2021). The stage at which harassment occurs defines the level of disturbance

response (Level B harassment, Level A harassment, or Lethal) attributed to either the sow or cub(s), along with the probability of the specific response occurring (see *Denning Analysis*).

*Impacts of the Specified Activities on Polar Bear Prey Species*

Information on the potential impacts of the specified activities on polar bear prey species can be found in Supplemental Information to this document (available as described above in **ADDRESSES**).

*Walrus: Human-Walrus Encounters*

Pacific walruses (also referred to hereafter as "walruses") do not inhabit the Beaufort Sea frequently. The likelihood of encountering walruses during industry operations is low and limited to the open-water season. During the time period of this IHA, industry operations may occasionally encounter small groups of walruses swimming in open water or hauled out onto ice floes or along the coast. Industry monitoring data have reported 49 walruses between 1995 and 2023, with only a few instances of disturbance to those walruses (AES Alaska 2015; USFWS unpublished data). If walruses are encountered during the activities proposed in this IHA, the interaction could potentially result in disturbance.

Anecdotal observations by walrus hunters and researchers suggest that males tend to be more tolerant of disturbances than females, and individuals tend to be more tolerant than groups. Females with dependent calves are considered least tolerant of disturbances. In the Chukchi Sea, disturbance events are known to cause walrus groups to abandon land or ice haulouts and occasionally result in trampling injuries or cow-calf separations, both of which are potentially fatal. Calves and young animals at terrestrial haulouts are particularly vulnerable to trampling injuries. However, due to the lack of previous walrus haulouts in West Harrison Bay, the most likely potential impacts of the specified activities include displacement from preferred foraging areas, increased stress, energy expenditure, interference with feeding, and masking of

communications. Any impact of human presence on walruses is likely to be limited to a few individuals due to their geographic range and seasonal distribution.

The reaction of walruses to vessel traffic is dependent upon vessel type, distance, speed, and previous exposure to disturbances. Walruses in the water appear to be less readily disturbed by vessels than walruses hauled out on land or ice. Furthermore, barges and vessels associated with industry activities travel in open water and avoid large ice floes or land where walruses are likely to be found. In addition, walruses can use a vessel as a haulout platform. In 2009, during industry activities in the Chukchi Sea, an adult walrus was observed hauled out on the stern of a vessel.

*Walrus: Effects of In-Water Activities*

Walruses hear sounds both in in-air and in-water. They have been shown to hear from 60 Hz to 23 kHz in air (Reichmuth et al. 2020). Tests of underwater hearing have shown their range to be between 1 kHz and 12 kHz with greatest sensitivity at 12 kHz (Kastelein et al. 2002). The underwater hearing abilities of the Pacific walrus have not been studied sufficiently to develop species-specific criteria for preventing harmful exposure. However, sound level thresholds have been developed for members of the "other marine carnivore" group of marine mammals (tables 1 and 2).

The specified activities may introduce substantial levels of noise into the marine environment at sound levels capable of causing a behavioral change or temporary or permanent damage to walrus hearing (table 2). However, the majority of the sound-producing instruments that will be used for SHS do not produce in-water sound above the threshold designated for Level B harassment or they do not produce sound within the hearing range of walruses. The echosounder and side-scan sonar will be operated at a frequency at or above 200 kilohertz (kHz), which is outside the hearing range for walruses (Southall et al. 2019). The sub-bottom profiler and sparker will produce sounds within the hearing range of walruses (2 kHz to 16 kHz and 300 hertz (Hz) to 1.5 kHz, respectively), and at an estimated sound source level above the Level B

harassment threshold (202 dB re 1μPa); however, this sound production will be highly directional and focused within a beam width of 20 degrees. The areas of increased sound (>160 dB re 1 μPa, or the Level B harassment threshold) due to airgun sound transmission will be up to 3,188 m (10,459 ft) away from seismic source vessels, but the area in which sound would exceed PTS (or Level A harassment) thresholds would be no more than 10 m (33 ft) from the sound source.

If walruses are present within the Level B harassment threshold up to 3,188 m (10,459 ft) away from seismic source vessels, noise may prevent ordinary communication between individuals and prevent them from locating one another. The noise may also prevent walruses from using potential habitats in West Harrison Bay and may have the potential to alter the frequency or duration of biologically significant behaviors such as feeding, foraging, or nursing. The most likely response of walruses to acoustic disturbances in open water would be for animals to move away from the source of the disturbance. Displacement from a preferred feeding area may reduce foraging success, increase stress levels, and increase energy expenditures.

*Walrus: Effects of Aircraft Overflights*

Aircraft overflights may disturb walruses. Reactions to aircraft vary with range, aircraft type, and flight pattern, as well as walrus age, sex, and group size. Adult females, calves, and immature walruses tend to be more sensitive to aircraft disturbance. Walruses are particularly sensitive to changes in engine noise and are more likely to stampede when planes turn or fly low overhead. Researchers conducting aerial surveys for walruses in sea ice habitats have observed little reaction to fixed-winged aircraft above 457 m (1,500 ft) (USFWS unpublished data). Although the intensity of the reaction to noise is variable, walruses are probably most susceptible to disturbance by fast-moving and low-flying aircraft (100 m (328 ft) above ground level) or aircraft that change or alter speed or direction. In the Chukchi Sea, there are recent examples of walruses being disturbed by aircraft flying in the vicinity of haulouts. It appears that walruses are more sensitive to disturbance when hauled out on land versus sea ice. However, as Pacific walrus

only occur in low numbers in the South Beaufort Sea, with no known mass haulout sites, the impacts of aircraft are expected to be negligible.

**Estimated Take**

*Definitions of Incidental Take Under the Marine Mammal Protection Act*

Below we provide the circumstances under which the three types of take of polar bears or walruses may occur. The FWS does not anticipate and is not authorizing either Level A harassment or lethal take as a part of this proposed IHA; however, an explanation of these take types is provided for context and background.

*Lethal Take*

Human activity may result in biologically significant impacts to polar bears. In the most serious interactions (e.g., vehicle collision, running over an unknown den causing its collapse), human actions can result in the mortality of polar bears. We also note that, while not considered incidental, in situations where there is an imminent threat to human life, polar bears may be killed. Additionally, though not considered incidental, polar bears have been accidentally killed during efforts to deter polar bears from a work area for safety and from direct chemical exposure (81 FR 52276, August 5, 2016). Unintentional disturbance of a female polar bear by human activity during the denning season may cause the female to abandon her cubs in the den before the cubs can survive on their own. Either scenario may result in the incidental lethal take of the cubs. Incidental lethal take of Pacific walruses could occur if the animal were directly struck by a vessel or trampled by other walruses in a human-caused stampede at a walrus haulout site.

*Level A Harassment*

Human activity may result in the injury of walruses or polar bears. Level A harassment, for nonmilitary readiness activities, is defined as any act of pursuit, torment, or annoyance that has the potential to injure a marine mammal or marine mammal stock in the wild.

Numerous actions can cause take by Level A harassment of polar bear cubs during the denning period, such as creating a disturbance that separates mothers from dependent cubs

(Amstrup 2003), inducing early den emergence during the late denning period (Amstrup and Gardner 1994; Rode et al. 2018), instigating early departure from the den site during the post-emergence period (Andersen et al. 2024), or repeatedly interrupting the nursing or resting of cubs to the extent that it impacts the cubs' body condition. As with lethal take, walruses are most vulnerable to Level A harassment when congregated in haulouts. The risk of stampede-related injuries increases with the number of animals hauled out and with the duration spent on coastal haulouts. Calves and young are the most vulnerable to suffer injuries and/or mortality (88 FR 53510, August 8, 2023).

*Level B Harassment*

Level B harassment for nonmilitary readiness activities is defined as any act of pursuit, torment, or annoyance that 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, feeding, or sheltering. Changes in behavior that disrupt biologically significant behaviors or activities for the affected animal are indicative of take by Level B harassment under the MMPA. Such reactions include, but are not limited to, the following:

- Fleeing (running or swimming away from a human or a human activity);
- Displaying a stress-related behavior such as jaw or lip-popping, front leg stomping, vocalizations, circling, intense staring, or salivating for polar bears;
- Abandoning or avoiding preferred movement corridors such as ice floes, leads, polynyas, a segment of coastline, barrier islands, or other resting sites;
- Abandoning prey or feeding areas;
- Using a longer or more difficult route of travel instead of the intended path;
- Interrupting breeding, sheltering, or feeding;
- Moving away at a fast pace (adult) and polar bear cubs or walrus calves struggling to keep up;

- Temporary, short-term cessation of nursing or resting (cubs or calves);
- Ceasing to rest repeatedly or for a prolonged period (adults);
- Loss of hunting opportunity due to disturbance of prey; or
- Any interruption in normal polar bear denning behavior that does not cause injury, den abandonment, or early departure of the female polar bears with cubs from the den site.

This list is not meant to encompass all possible behaviors; other behavioral responses may be indicative of take by Level B harassment. Relatively minor changes in behavior such as the animal raising its head or temporarily changing its direction of travel are not likely to disrupt biologically important behavioral patterns, and the FWS does not view such minor changes in behavior as indicative of a take by Level B harassment. It is also important to note that eliciting behavioral responses that equate to take by Level B harassment repeatedly may result in Level A harassment.

*Pacific Walrus: All Interactions*

With the low occurrence of walruses in the Beaufort Sea and the adoption of the mitigation measures required by this IHA, the FWS concludes that the only anticipated effects from the specified activities in the Beaufort Sea would be short-term behavioral alterations of small numbers of walruses. All walrus encounters within the geographic area in the past 10 years have been of solitary walruses or groups of two. The closest sighting of a grouping larger than two was outside the specified geographical area in 2013, when a vessel encountered a group of 15 walruses. Thus, while highly unlikely that a group of walruses will be encountered during the proposed activities, we estimate that no more than 15 Pacific walruses will be taken by Level B harassment during the specified activities. Harassment of no more than 15 Pacific walruses may occur from behavioral responses to vessels, or from behavioral changes in response to noise greater than 160 dB re 1 µPa created by high-resolution 3D seismic imaging.

*Polar Bear: Surface-Based Interactions*

Impact Area

To assess the area of potential impact from the project activities, we calculate the area affected by project activities where harassment is possible. We refer to this area as a zone or area of influence. Behavioral response rates of polar bears to disturbances are highly variable, and data to support the relationship between distance to polar bears and disturbance is limited. Dyck and Baydack (2004) found sex-based differences in the frequencies of vigilance bouts of polar bears in the presence of vehicles on the tundra. However, in their summary of polar bear behavioral response to ice-breaking vessels in the Chukchi Sea, Smultea et al. (2016) found no difference between reactions of males, females with cubs, or females without cubs. During the FWS's coastal aerial surveys, 99 percent of polar bears that responded in a way that indicated possible Level B harassment (polar bears that were running or began to run when detected or swim in response to the aircraft) did so within 1.6 km (1 mi), as measured from the ninetieth percentile horizontal detection distance from the flight line. Similarly, Andersen and Aars (2008) found that female polar bears with cubs (the most conservative group observed) began to walk or run away from approaching snowmobiles at a mean distance of 1,534 m (0.95 mi). Thus, while future research into the reaction of polar bears to anthropogenic disturbance may indicate a different zone of potential impact is appropriate, the current literature suggests that the application of a 1.6-km (1.0-mi) disturbance zone will encompass the vast majority of polar bear harassment events.

Estimated Harassment

We estimated Level B harassment using the spatio-temporally specific encounter rates and temporally specific harassment rates derived in the *2021–2026 Beaufort Sea ITR* (86 FR 42982, August 5, 2021) in conjunction with Narwhal's project operations footprint. Table 3 provides the definition for each variable used in the take formulas. Using the approaches described above, we estimated the total number of polar bears expected to be harassed by surface-based interactions during the proposed IHA period as a total of three bears (table 10).

Table 3—Definitions of variables used in take estimates of non-denning polar bears in West Harrison Bay, Alaska

| Variable | Definition |
|---|---|
| $B_{es}$ | Bears encountered in zone of potential impact for the entire season |
| $a_c$ | Coastal exposure area |
| $a_i$ | Inland exposure area |
| $r_o$ | Occupancy rate |
| $e_{co}$ | Coastal open water season bear-encounter rate in bears/season |
| $e_{io}$ | Inland open water season bear-encounter rate in bears/season |
| $e_{ci}$ | Coastal ice season bear-encounter rate in bears/season |
| $e_{ii}$ | Inland ice season bear-encounter rate in bears/season |
| $t_i$ | Ice season harassment rate |
| $B_t$ | Number of estimated Level B harassment events |

The variables defined above were used in a series of formulas to ultimately estimate the total harassment from surface-level interactions. Encounter rates were originally calculated as polar bears encountered per square kilometer per season. As a part of their request, Narwhal provided the FWS with geospatial files indicating the location of all proposed ice roads, ice pads, tundra travel, vessel routes, staging areas, and SHS. The request also included the percent of time each component of the specified activities would be occupied by humans. These files were buffered by 1.6 km (1 mi) to calculate the area of disturbance.

Impact areas were multiplied by the appropriate encounter rate to obtain the number of polar bears expected to be encountered in an area of interest per season ($B_{es}$). The equation below (equation 1) provides an example of the calculation of polar bears encountered in the ice season for an area of interest in the coastal zone.

$$B_{es} = a_c * e_{ci}$$

**Equation 1**

To generate the number of estimated Level B harassments for each area of interest, we multiplied the number of polar bears in the area of interest per season by the proportion of the season the area is occupied, the rate of occupancy, and the harassment rate (equation 2).

$$B_t = B_{es} * S_p * r_o * t_i$$

**Equation 2**

*Aircraft Impacts on Polar Bears*

Polar bears in the project area will likely be exposed to the visual and auditory stimulation associated with the applicant's fixed-wing and helicopter activities; however, these impacts are likely to be minimal and short-term. Aircraft activities may cause disruptions in the normal behavioral patterns of polar bears as either an auditory or visual stimulus, thereby resulting in incidental Level B harassment. To reduce the likelihood that polar bears are disturbed by aircraft, Narwhal has committed to multiple mitigation measures, such as minimum flight altitudes over polar bears, avoiding known areas of polar bear congregations, and restrictions on sudden changes to aircraft movements and direction. Once mitigated, such disturbances are expected to have no more than short-term, temporary, and minor impacts on individual polar bears.

*Estimating Harassment Rates of Aircraft Activities*

Harassment rates during aircraft activities were estimated using results from studies of fixed-wing aircraft and helicopter overflights (Quigley 2022; Quigley et al. 2024). In these studies, aerial searches along the northern coast of Alaska between Point Barrow and the western Canadian border were flown and polar bears were approached at different altitudes. Polar bears that did not exhibit behavioral changes consistent with harassment were then re-approached at progressively lower altitudes, reaching as low as 30 m (100 ft). Researchers recorded behavioral changes during these approaches and evaluated if and when Level B harassment occurred. Covariates examined were polar bear location ("barrier island" or "mainland"), initial behavior ("active" or "inactive"), group size, whether the polar bear belonged to a family group, and the number of previous overflights (i.e., how many times the group was re-approached to elicit a behavioral change). A Bayesian imputation approach accounted for polar bears that exhibited a behavioral change consistent with harassment on their first approach, thus lacking an identified

altitude at which no harassment occurred due to a lack of a "non-harassment" observation. Their final model included location, activity level, and the number of previous overflights as predictors of the altitude at which a polar bear was harassed. For our aircraft impacts analysis, we used harassment rates estimated for active polar bears observed on barrier islands, as they had the highest rates of harassment. We further assumed that no previous overflights were conducted.

We provide harassment rates for the following five categories of flights: take-offs, landings, low-altitude flights (defined as those between 122 m [400 ft] and 305 m [1,000 ft] altitude), mid-altitude flights (defined as those between 305 m [1,000 ft] and 457 m [1,500 ft] altitude), and high-altitude flights (defined as those between 457 m [1,500 ft] and 610 m [2,000 ft] altitude). Harassment rates were assigned to each of these flight categories using the harassment rate for the lowest altitude in the category (e.g., for low-altitude flights, the harassment rate estimated for 122 m [400 ft] was used). This binning method of using the lowest altitude harassment rate in the bin allowed our estimates to be inclusive of possible changes in altitude due to variable flight conditions (table 4).

Table 4—Harassment rates for the five categories of flights for fixed-wing aircraft and helicopter overflights

| **Flight Category** | **Fixed-Wing** | **Helicopter** |
|---|---|---|
| Take-offs | 0.99 | >0.99 |
| Landings | 0.99 | >0.99 |
| Low-Altitude Flights (122–305 m) | 0.86 | >0.99 |
| Mid-Altitude Flights (305–457 m) | 0.03 | 0.82 |
| High-Altitude Flights (457–610 m) | <0.01 | 0.05 |
| **NOTE: The rates in this table are based on Quigley et al. (2024). We used the harassment rate associated with 30 m (100 ft) for take-offs and landings.** | | |

*Estimating Area of Impact for Aircraft Activities*

For each category of the flight path (i.e., take-off, low-altitude travel, mid-altitude travel, high-altitude travel, and landing), we calculated an impact area and duration of impact using flight hours or flight path information provided in the Request. We used flights logs available through FlightAware (https://www.flightaware.com), a website that maintains flight logs in the public domain, to estimate impact areas and flight hours for take-offs and landings. We estimated

a take-off distance of 2.41 km (1.5 mi) that would be impacted for 10 minutes. We estimated a landing distance of 4.83 km (3 mi) per 305 m (1,000 ft) of altitude that would be impacted for 10 minutes per landing. To estimate the impact area of traveling segments, we subtracted the take-off and landing areas from the total area of the flight path. The duration of impact for traveling flights was either provided in the Request or calculated using the length of the flight and a conservative flight speed of 129 km/h (80 mph), which was approximately 1.5 minutes per 3.22 km (2 mi) of the flight path.

All take-offs, landings, and traveling segments were then spatially referenced to determine whether they were within the coastal or inland zones. The coastal zone is defined as the offshore and onshore areas within 2 km (1.2 mi) of the coastline, and the inland zone is defined as the onshore area greater than 2 km (1.2 mi) from the coastline. If no location or flight hour information was provided, flight paths were approximated based on the information provided in the Request. Of the flight paths that were described or addressed through assumptions, we marked the approximate flight path take-off and landing locations using ArcGIS Pro, and the flight paths were drawn. Once spatially referenced, all flight paths were buffered by 1.6 km (1 mi), which is consistent with aircraft surveys conducted by the FWS and U.S. Geological Survey (USGS) between August and October during most years from 2000 to 2014 (Schliebe et al. 2008; Atwood et al. 2015; Wilson et al. 2017). In these surveys, 99 percent of groups of polar bears that exhibited behavioral responses consistent with Level B harassment were observed within 1.6 km (1 mi) of the aircraft.

To calculate the total number of Level B harassment events estimated due to the specified activities, we calculated the number of flight hours for each flight category (i.e., take-offs, low-altitude travel, mid-altitude travel, high-altitude travel, and landings) for each zone and season combination. These values were then used to calculate the proportion of the season that aircraft occupied their impact areas (i.e., take-off area, landing area, or traveling segment impact areas). This proportion-of-season metric is equivalent to the occupancy rate ($r_o$) generated for surface-

level interaction harassment estimates. The total impact area for each of the flight categories was multiplied by the zone and season-specific polar bear encounter rate (table 5) to determine the number of polar bears expected in that area for the season (i.e., $B_{es,}$ as seen in equation 1). This number was then multiplied by the proportion of the season to determine the number of polar bears expected in that area when flights are occurring, and the appropriate harassment rate based on flight altitude to estimate the number of polar bears that may be harassed as a result of the flights (as seen in equation 2). Table 6 shows a summary of aircraft operations during the specified activities and the values used to estimate Level B harassment of polar bears during aircraft operations.

Table 5—Seasonal polar bear encounter rates by zone

| *Coastal Zone Seasonal Encounter Rate* |
|---|
| Ice Season (November 12 – July 18) ……. 0.05 bears / km$^2$ |
| Open-water Season (July 19 – November 11) ……1.48 bears / km$^2$ |
| *Inland Zone Seasonal Encounter Rate* |
| Ice Season (November 12 – July 18) ……..0.004 bears / km$^2$ |
| Open-water Season (July 19 – November 11) ……0.005 bears / km$^2$ |

NOTE: This table is adapted from the 2021–2026 Beaufort Sea ITR (86 FR 42982, August 5, 2021).

*Estimated Harassment from Aircraft Activities*

Using the approaches described above, we estimated the total number of polar bears expected to be harassed by the aircraft activities during the proposed IHA period as a total of two bear (table 6).

Table 6—Estimated Level B harassment of polar bears in project area by year as a result of aircraft operations during the proposed regulatory period

| | Ice Season | | Open-water Season | | | |
|---|---|---|---|---|---|---|
| Activity | Startup crew support | Operational support | Barge caretaker resupply | Lake survey | Archaeology survey | Summer clean-up and stick picking |
| Aircraft type | Helicopter | Fixed wing | Helicopter | Helicopter | Helicopter | Helicopter |
| Altitude* | Low | High | Low | Low | Low | Low |

| | | | | | | |
|---|---|---|---|---|---|---|
| Total Flights | 4 | 137 | 22 | 10 | 3 | 6 |
| Proportion of Season | 0.0007 | 0.0326 | 0.0040 | 0.0109 | 0.0032 | 0.0130 |
| Proportion of Flight in Coastal Zone | 0.33 | 0.38 | 0.33 | 0.26 | 0.38 | 0.35 |
| Proportion of Flight in Inland Zone | 0.67 | 0.62 | 0.67 | 0.74 | 0.62 | 0.65 |
| Total Encounter Rate (bears/km$^2$/season) ** | 0.019 | 0.021 | 0.492 | 0.389 | 0.566 | 0.521 |
| Harassment Rate | 0.99 | 0.05 | 0.99 | 0.99 | 0.99 | 0.99 |
| Flight Time Harassment | $1.14 \times 10^{-04}$ | $2.85 \times 10^{-04}$ | $1.60 \times 10^{-02}$ | $3.42 \times 10^{-02}$ | $1.49 \times 10^{-02}$ | $5.48 \times 10^{-02}$ |
| Total Takeoffs and Landings combined | 8 | 274 | 44 | 136 | 24 | 120 |
| Landing Time/Season | 0.00011 | 0.00381 | 0.00133 | 0.00412 | 0.00073 | 0.0036 |
| Landing Time Harassment | 0.00013 | 0.00446 | 0.04627 | 0.03754 | 0.02515 | 0.1257 |
| Takeoff Time/Season | 0.00011 | 0.00381 | 00.00133 | 0.00412 | 0.00073 | 0.0036 |
| Takeoff Time Harassment | $8.75 \times 10^{-05}$ | 0.00300 | 0.03108 | 0.02521 | 0.01689 | 0.0844 |
| Number Level B Harassment of Activity | 0.00033 | 0.00774 | 0.09340 | 0.09691 | 0.05690 | 0.2650 |

| | | | |
|---|---|---|---|
| Total number of Level B harassments during Ice Season | 1 | Total number of Level B harassments during Open Season | 1 |

| | |
|---|---|
| Total number of level B harassments across all aircraft activities | 2 |

*** High-altitude flight is defined as between 457 m [1,500 ft] and 610 m [2,000 ft] altitude. Low altitude is defined as between 122 m [400 ft] and 305 m [1,000 ft] altitude. There are no mid-altitude flights considered for this project.**

****Accounts for unequal encounter rates over coastal and inland zones.**

*Denning Analysis*

Below we provide a complete description, and results of the polar bear den simulation model used to assess impacts to denning polar bears from disturbance associated with all phases of the specified activities. In our denning analysis, we used the analytical method described in the 2024-2025 Bureau of Land Management Incidental Harassment Authorization (BLM IHA) (90 FR 2718, January 13, 2025).

*Den Simulation*

We simulated dens across the entire North Slope of Alaska, ranging from the areas identified as denning habitat (Durner et al. 2006, 2013; Durner and Atwood 2018) contained within the National Petroleum Reserve–Alaska (NPR-A) in the west to the Canadian border in the east. To simulate dens on the landscape, we relied on the estimated number of dens in three different regions of northern Alaska provided by Atwood et al. (2020). These included the NPR-A, the area between the Colville and Canning Rivers (CC), and Arctic National Wildlife Refuge (NWR). Den simulations for this proposed IHA were conducted following the exact methodology described previously in the 2024-2025 BLM IHA (90 FR 2718, January 13, 2025).

*Impact Area of Specified Activities*

The model developed by Wilson and Durner (2020) provides a template for estimating the level of potential impact on denning polar bears during the specified activities while also considering the natural denning ecology of polar bears in the region. Previous iterations of the denning analysis model, including those utilized in the 2021–2026 Beaufort Sea ITR (86 FR 42982, August 5, 2021) and 2023–2024 BLM IHA (88 FR 88943, December 26, 2023), assumed that during all denning periods, any polar bears within dens within 1.6 km (1 mi) from project activities could exhibit a disturbance response if exposed to industrial stimuli. However, for this IHA, as in the 2024-2025 BLM IHA (90 FR 2718, January 13, 2025), we refined that broad assumption to account for denning data that have been collected subsequent to the promulgation of the 2021–2026 Beaufort Sea ITR. Since 2021, four known dens (monitored in 2022 and 2023) have occurred near human activity. Of the four newly observed dens, three were extremely close to human activity (<50 m [<164 ft]), yet the sows remained in their dens until the late denning period. We updated polar bear disturbance probabilities and litter size distributions with the information from these dens, then re-examined the historic dens that were used to create disturbance probabilities. We found that the distances between human activity and polar bear dens during the early denning period were considerably closer than those observed during other

denning periods. Specifically, of the 17 dens within the case studies that were exposed to human activity during the early denning period, only one was potentially disturbed at a distance greater than 800 m (2,625 ft). This single den record also had imprecise information on the distance to human activity, so activity was assumed to occur within 1,610 m (5,282 ft) of the den and was likely closer. The historic dens analyzed during the den establishment, late denning, and post-emergence periods did not follow this pattern. For those dens, disturbance distances commonly exceeded 805 m (2,641 ft). Evidence derived from dens exposed to human activity during the early denning period, including both new den records and historic dens, illustrates the reluctance of sows to abandon their maternal den/cubs in response to exposure to stimuli from nearby activity, and supports the concept that sows may be more risk tolerant during the early denning period. Additionally, sows may be less affected by sound from outside activities during the early denning period because dens are typically closed during that time, which can affect propagation of noise into the den (Owen et al. 2020). Given this evidence, we modified the denning analysis model to adjust the impact area for the early denning period to range from 0 to 805 m (0 to 2,641 ft). As a result, dens that were simulated to be within 805 m (2,641 ft) of human activity could be disturbed during all denning periods, while dens between 806 and 1610 m (2,644 and 5,282 ft) away from human activity could only be disturbed during the den establishment, late denning, and post-emergence periods.

*AIR Surveys*

We assumed that all operational and transit areas that will be utilized during denning season would have two AIR surveys flown prior to beginning any operations (figures 1 and 2). The first survey would occur between December 1 and December 25, 2025, and the second survey between December 15, 2025, and January 10, 2026, with a minimum of 24 hours between surveys. During each iteration of the model, each AIR survey was randomly assigned a probability of detecting dens using detection probabilities previously described in the 2024-2025 BLM IHA (90 FR 2718, January 13, 2025).

*Model Implementation*

For each iteration of the model, we first determined which dens were exposed to the specified activities. Dens that were simulated to be within 805 m (2,641 ft) of human activity could be disturbed during all denning periods, while dens within 806–1610 m (2,644–5,282 ft) of human activity could only be disturbed during the den establishment, late denning, and post-emergence periods. Dens detected during AIR survey were excluded if activity did not occur prior to AIR survey. We identified the stage in the denning period when the exposure occurred based on the date range of the activities the den was exposed to: den establishment (i.e., initial entrance into den until cubs are born), early denning (i.e., birth of cubs until they are 60 days old), late denning (i.e., date cubs are 60 days old until den emergence) and post-emergence (i.e., the date of den emergence until permanent departure from the den site). We then determined whether the exposure elicited a response by the denning polar bear based on probabilities derived from the reviewed case studies (Woodruff et al. 2022b), which were updated with data from the dens monitored in 2022 and 2023 using the methods described in Woodruff et al. (2022a).

Specifically, we divided the number of cases that documented responses associated with either a Level B harassment (i.e., potential to cause a disruption of behavioral patterns), Level A harassment (i.e., potential to injure an animal), or lethal take (e, g., cub abandonment) of polar bears by the total number of cases with that combination of period and exposure type (table 7). Level B harassment was applicable to both adults and cubs, if present, whereas Level A harassment and lethal take were applicable to only cubs. AIR surveys were not considered to be a source of potential impact. In thousands of hours of AIR surveys conducted in northern Alaska over the last decade, we are not aware of a single instance of a polar bear abandoning its den during the early denning period due to an AIR survey overflight. These responses would be readily observable on the thermal cameras, and the fact that none have been observed indicates that den abandonment very likely does not occur given the brief duration of the aircraft overflight as well as the distance and altitude of the aircraft from the den site. Recent peer-

reviewed research further supports the model assumption that AIR surveys are not a source of harassment (Quigley et al. 2024).

For dens exposed to activity, we used a multinomial distribution with the probabilities of different levels of take for that period (table 7) to determine whether a den was disturbed or not. If a lethal take was simulated to occur, a den was not allowed to be disturbed again during the subsequent denning periods because the outcome of that denning event was already determined.

The level of impact associated with a disturbance varied according to the severity and timing of the exposure (table 7). Exposures that resulted in emergence from dens prior to cubs reaching 60 days of age were considered lethal takes of cubs. If an exposure resulted in a Level A harassment during the late denning period, we first assigned that den a new random emergence date from a uniform distribution that ranged between the first date of exposure during the late denning period and the original den emergence date. We then determined whether that den was disturbed during the post-emergence period, but the probability of disturbance was dependent on whether or not a den was disturbed (i.e., Level A harassment) during the late denning period (table 7). If an exposure resulted in a Level A harassment during the post-emergence period, we assigned the den a new time spent at the den site post-emergence from a uniform distribution that ranged from 0 to the original simulated time at the den post-emergence.

Recent research suggests that litter survival is related to the date of den emergence and time spent at the den post-emergence (Andersen et al. 2024), with litters having higher survival rates the later they emerge in the spring, and the longer they spend at the den site after emergence. To determine if whether dens that were disturbed during the late denning and/or post-emergence period(s) experienced Level A harassment, we relied on estimates of litter survival in the spring following den emergence, derived from the analysis of empirical data on the dates of emergence from the den and departure from the den site (Andersen et al. 2024). These estimates are dependent on the date of emergence and time spent at the den site post-emergence. For each den disturbed during the late denning and/or post-emergence periods, we

obtained a random sample of regression coefficients from the posterior distribution and calculated the probability of a litter surviving approximately 100 days post-emergence with the following equation:

$$logit(\boldsymbol{s}) = \beta_0 + \beta_1 emerge + \beta_2 depart$$

**Equation 3**

where ***s*** is the probability of at least one cub being alive approximately 100 days post-emergence, $\beta_0$ is the intercept coefficient, $\beta_1$ is the coefficient associated with the Julian date of emergence (*emerge*), and $\beta_2$ is the coefficient associated with the number of days the family group stayed at the den site post-emergence before departing (*depart*). These probabilities are based on estimates of litter survival derived from the analysis of empirical data on the dates of emergence from the den and departure from the den site (Andersen et al. 2024).

We developed the code to run this model in program R (R Core Development Team 2020) and ran 10,000 iterations of the model (i.e., Monte Carlo simulation) to derive the estimated number of dens disturbed and associated levels of harassment. We then determined the number of cubs that would have lethal take, Level A harassment, and Level B harassment, and the number of females that would experience Level B harassment. Table 7 shows the probability of an exposure resulting in the types of harassment of denning polar bears.

Table 7—Probability that an exposure elicited a response by denning polar bears that would result in Level B harassment, Level A harassment, lethal take, or no take.

| Denning Period | None (sow or cub(s)) | Level B (sow) | Level B (cub(s)) | Level A (cub(s)) | Lethal cub(s) |
|---|---|---|---|---|---|
| Den Establishment | 0.750 | 0.250 | 0.000 | 0.000 | 0.000 |
| Early Denning | 0.923 | 0.077 | 0.000 | 0.000 | 0.077 |
| Late Denning | 0.684 | 0.316 | 0.000 | 0.316 | 0.000 |
| Post Emergence-Previously Undisturbed Den | 0.000 | 1.000 | 0.316 | 0.684 | 0.000 |
| Post Emergence-Previously Disturbed Den | 0.000 | 1.000 | 0.667 | 0.333 | 0.000 |

**NOTE: Level B harassment was applicable to both adults and cubs, if present; Level A harassment and lethal take were applicable to cubs only and were not possible during the den establishment period, which ended with the birth of the cubs. During the early denning period, there was no Level A harassment for cubs, only lethal take. We provide two sets of take probabilities for the post-emergence period. The first (Post-emergence–Undisturbed) is the set of probabilities when a den has not been disturbed during the late denning period. The second (Post-emergence–Disturbed) is the set of probabilities for a den that was disturbed during the late denning period (Rode et al. 2018; Andersen et al. 2024).**

*Model Results*

In the denning model both sows and cubs may experience Level B harassment, however, only cubs can experience either Level A harassment or lethal take (see *Model Implementation* and table 7 for further detail). The distributions of model results for Level B harassments, Level A harassments, and Lethal takes, were non-normal and heavily skewed. The heavily skewed nature of these distributions suggests that the mean value is not representative of the most common model result. Therefore, mean is not an appropriate measure of potential denning related harassments. However, the median value, which is the midpoint value of a frequency distribution of all model results, is a more precise estimator of common model results when the distribution displays a non-normal and heavily skewed pattern. In all three take scenarios, Level B harassment, Level A harassment, and Lethal take, the median value was zero (0), with 95 percent confidence intervals ranging between 0 – 2 for both Level B and Level A harassment, and from 0 – 1 for Lethal take (table 8). Table 8 also shows the probability of Level B harassment was the highest (0.220), followed by Level A harassment (0.123), lowest for lethal take (0.018). As a result of these model outputs, we anticipate zero (0), and therefore do not authorize any, Level B harassment, Level A harassment, or Lethal take associated with denning polar bears during the 1-year period of this proposed IHA.

Table 8—Results of the den disturbance model for any given winter of proposed activity.

| Level of Harassment/Take | Estimates* | | | |
|---|---|---|---|---|
| | Probability | Mean | Median | 95% CI |
| Level B Harassment | 0.22 | 0.28 | 0 | 0-2 |
| Level A Harassment | 0.12 | 0.23 | 0 | 0 –2 |
| Lethal Take | 0.02 | 0.03 | 0 | 0 –1 |

**NOTE: *Estimates are provided for the probability, mean, median, and 95 percent Confidence Intervals (CI) for Level B harassment, Level A harassment, and Lethal take. The probabilities represent the probability of ≥1 take of a bear occurring during a given winter.**

*Maritime Activities*

Narwhal's specified activities include maritime transport of personnel and equipment (i.e., barging and resupply) and activities to actively survey the project area (i.e., bathymetric and -high-resolution 3D seismic surveys). The bathymetric and seismic surveys will introduce sound into the water as described in this Proposed IHA under "**Description of Specified Activities and Specified Geographic Region**". Except for the 1,721-$cm^3$ (105-$in^3$) airgun that will be used in the high-resolution 3D seismic surveys, the equipment will either produce sound at a frequency outside of the hearing range of polar bears, or in an extremely directed and narrow area. Narwhal has indicated the airgun will create impulsive noise at approximately 231.0 dB re 1µPa peak SPL, and its use will result in ≥ 160 dB re 1µPa noise in an area up to 3,188 m (10,459 ft) surrounding the sound source. As described in "**Potential Impacts of the Specified Activities on Marine Mammals**," polar bears experiencing underwater noise ≥ 160 dB re 1µPa may exhibit behavioral responses that are indicative of Level B harassment. However, polar bears rarely swim with their heads under water unless diving or actively hunting. We do not anticipate polar bears to be actively diving or hunting within 3,188 m (10,459 ft) of survey vessels in the water. Thus, we do not estimate that harassment due to ensonification will occur as a result of the specified activities. However, the applicant has included in their request the estimated harassment of polar bears through behavioral change in response to in-water sound.

We estimated the number of polar bears that may exhibit Level B harassment resulting from interactions with vessel traffic in a manner similar to that used to generate aircraft disturbance estimates. Narwhal has supplied the highest expected number of trips that may be taken during specified activities, including placement of staging barges and resupply of summer surveys in West Harrison Bay. While resupply trips may originate from West Dock in Prudhoe Bay or from Oliktok Point, we conservatively used the longer trip originating from West Dock in

harassment estimates. The impact area of the barge/tug combination moves in its route from one location to the next. We estimated a 16.5-km$^2$ (6.37-mi$^2$) take area for vessels, which accounts for the greatest footprint anticipated, that of a barge, tow, and tug with a length of 200 m (656 ft) and a width of 100 m (328 ft), and a 1.6-km (1-mi) buffer surrounding the vessels. When a finite number of trips was supplied, we calculated the total hours of impact using an average vessel speed of two knots (3.7 km/hr). Polar bears are known to spend a biologically consequential portion of their time in coastal waters (Stirling 1974; Lone et al. 2018) and no polar bear-specific study has been conducted to establish an in-water only encounter rate. Furthermore, bear densities likely vary spatially from near shore to deeper waters. Therefore, we used the same coastal zone seasonal encounter rates for the open water season as described in "*Estimating Area of Impact for Aircraft Activities*" to conduct our vessel analysis. The hours of impact were then used to calculate the proportion of the open-water season that would be impacted (table 9). We acknowledge that the coastal zone seasonal encounter rate is a conservative estimate for an in-water encounter rate, especially for deeper offshore waters. However, without data developed specifically for an estimation of polar bears in-water densities it presents the best available data.

Table 9—Calculation of the total number of barge and tug vessel trip hours and the proportion of the season polar bears may be impacted in a 16.5-km$^2$ impact area by barge/tug presence.

| Vessel Activity | Hours Per Day or Event | Number of Days or Events | Area of Impact | Proportion of Season | Encounter rate | Harassment Rate | Number of Harassments |
|---|---|---|---|---|---|---|---|
| Barge Deployment | 119 hours | 1 trip | 132 km$^2$ | 0.04 | 1.48 | 0.19 | 1.6 |
| Resupply Vessels from West Dock | 39 hours | 45 trips | 16.5 km$^2$ | 0.62 | 1.48 | 0.19 | 2.9 |
| Bathymetry Vessels | 12 hours | 18 days | 33 km$^2$ | 0.07 | 1.48 | 0.19 | 0.7 |
| High Resolution Seismic Support Vessel | 12 hours | 30 days | 49.5 km$^2$ | 0.13 | 1.48 | 0.19 | 1.8 |
| High Resolution Seismic Source | 12 hours | 30 days | 24.4 km$^2$ | 0.13 | 1.48 | 0.19 | 0.9 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Vessels | | | | | | | |
| | Total Estimated Level B Harassments | | | | | | 7.9 |

The number of estimated takes was then calculated using equation 2, in which the impact area is multiplied by encounter rate, proportion of season, and harassment rate for the open-water season. The final number of estimated Level B harassment events from barge/tug trips and potential interactions between seismic vessels and polar bears was 7.9, rounded to eight polar bears for the duration of activities.

*Sum of Take from All Sources*

The applicant proposes to conduct SHS, preliminary field surveys, exploratory drilling operations, and summer cleanup activities in West Harrison Bay, Alaska, from August 1, 2025, through July 31, 2026. A summary of total estimated take for both walruses and polar bears via Level B harassment during the project by source is provided in table 10. Neither lethal take nor Level A harassment would occur outside of denning polar bears because the level of sound and visual stimuli experienced by polar bears on the surface or in the water would not be significant enough to result in injury or death. Denning polar bears, however, may be subject to repeated exposures, significant energy expenditure from den abandonment or departure, or potential impacts to a cub if the den is abandoned or departed prematurely. The probability of greater than or equal to one Level A harassment or lethal take is 0.171 and 0.032, respectively. As a result of these model outputs, we do not anticipate nor authorize any Level B harassment, Level A harassment, or Lethal take associated with denning polar bears during the 1-year period of this proposed IHA.

Table 10—Total estimated takes by Level B harassment of polar bears and Pacific walruses by source.

| Source | Number of Estimated Level B Harassments |
|---|---|
| **Polar bears** | |
| Bears on the surface | 3 |
| Vessel activities | 8 |

| | |
|---|---|
| Winter activities—Denning bears<br>Aircraft activities | 0<br>2 |
| Polar bear total | 13 |
| **Pacific walruses** | |
| Vessel activities | 15 |
| Pacific walrus total | 15 |

*Critical Assumptions*

In order to conduct this analysis and estimate the potential amount of Level B harassment, several critical assumptions were made.

Level B harassment is equated herein with behavioral responses that indicate harassment or disturbance. There is likely a portion of animals that respond in ways that indicate some level of disturbance but do not experience significant biological consequences. Our estimates do not account for variable responses by polar bear age and sex; however, sensitivity of denning polar bears was incorporated into the analysis. The available information suggests that polar bears are generally resilient to low levels of disturbance. Females with dependent young and juvenile polar bears are physiologically the most sensitive (Andersen and Aars 2008) and most likely to experience harassment from disturbance. There is not enough information on composition of the SBS polar bear stock in the specified project area to incorporate individual variability based on age and sex or to predict its influence on harassment estimates. Our estimates are derived from a variety of sample populations with various age and sex structures, and we assume the exposed population will have a similar composition and that, therefore, the response rates are applicable.

The estimates of behavioral response presented here do not account for the individual movements of animals away from the project area or differential response of animals to noise or human presence due to past experiences. Our assessment assumes animals remain stationary (i.e., density does not change). There is not enough information about the movement of polar bears in response to specific disturbances to refine this assumption.

The SBS polar bears do create maternal dens on the sea ice, and the specified activities may occur on sea ice close to the shoreline. The den simulation used in our analysis does not simulate dens on the sea ice. However, the portions of the sea ice that may be impacted by the specified activities are shore-fast ice, which does not typically move in a way that creates pressure ridges needed to create sufficient denning habitat.

**Determinations and Findings**

In making these findings, we considered the best available scientific information, including: the biological and behavioral characteristics of the species; the most recent information on species distribution and abundance within the area of the specified activities, the current and expected future status of the stock (including existing and foreseeable human and natural stressors), the potential sources of disturbance caused by the project; and the potential responses of marine mammals to this disturbance. In addition, we reviewed applicant-provided materials; information in our files and datasets, published reference materials, and information provided by species experts.

*Small Numbers*

For our small numbers determination, we consider whether the estimated number of polar bears and Pacific walruses to be subjected to incidental take are respectively small relative to the population size of the species or stock.

1. As stated previously, walruses are extralimital in the Beaufort Sea, with nearly the entire walrus population found in the Chukchi and Bering Seas. Industry monitoring reports have observed no more than 49 walruses between 1995 and 2023, with only a few observed instances of disturbance to those walruses (AES Alaska 2015; USFWS unpublished data). Between those years, observations were typically of a single or two animals, often separated by several years. At most, only a tiny fraction of the Pacific walrus population – which is comprised of hundreds of thousands of animals (Beatty et al. 2022) – may be found in areas potentially affected by Narwhal's specified activities. We do not anticipate that seasonal movements of a few walruses

into the Beaufort Sea will significantly increase over the 1-year period of this IHA. The estimated take of 15 Pacific walruses per year from a population numbering approximately 257,193 animals represents 0.005 percent of that population ((15 ÷ 257,193) x 100 ≈ 0.005 percent). We therefore find that the industry activities specified in Narwhal's request would result in only a small number of incidental harassments of walruses.

We estimate that Narwhal's proposed specified activities in the specified geographic region will cause no more than harassment (Level B) to 13 polar bears during the 1-year period of this proposed IHA (see *Sum of Take from All Sources*). Take of 13 animals is 1.4 percent of the best available estimate of the current SBS stock size of 907 animals (Bromaghin et al. 2015; Atwood et al. 2020; ((13÷907)×100≈1.4 percent) and represents a "small number" of polar bears of that stock.

2. The footprint of the specified activities within the specified geographic region is small relative to the range of the Pacific walrus and the SBS stock of polar bear. Walruses and SBS polar bears range well beyond the boundaries of the proposed IHA region. As such, the IHA region itself represents only a subset of the potential area in which these species may occur. Thus, the FWS concludes that a small portion of the Pacific walrus and SBS polar bear populations may be present in the specified geographic region during the time of the specified activities.

*Small Number Conclusion*

We propose a finding that take of up to 15 Pacific walrus and 13 SBS polar bears represents a small number of each stock.

*Negligible Impact*

For our negligible impacts determination, we consider the following:

1. The documented impacts of previous activities similar to the specified activities on Pacific walruses and polar bears, and, taking into consideration the baseline of existing impacts from factors such as oil and gas activities in the area and other ongoing or proposed incidental

take authorizations, suggests that the types of specified activities will have minimal effects on Pacific walruses and polar bears. Additionally, the effects will be limited to short-term, temporary behavioral changes, or minor injury. Furthermore, our analyses do not indicate, nor do we anticipate, any take by Level A harassment or lethal take of either Pacific walruses or polar bears during the 1-year period of this proposed IHA. Therefore, we anticipate that the specified activities will not have lasting impacts that could significantly affect an individual Pacific walrus or polar bear's health, reproduction, or survival. The limited extent of anticipated impacts on Pacific walruses and polar bears – i.e., temporary and minor behavioral disturbances associated with Level B harassment – is unlikely to adversely affect annual rates of Pacific walrus or polar bear survival or recruitment.

2. The distribution and habitat use patterns of Pacific walruses and polar bears indicate that relatively few Pacific walrus and polar bears will occur in the specified areas of activity at any time and, therefore, few Pacific walruses and polar bears are likely to be affected.

3. Narwhal has committed to the implementation of monitoring requirements and mitigation measures designed to reduce the potential impacts of their operations on Pacific walruses and polar bears. Den detection surveys for polar bears, along with, adaptive mitigation and management responses based on real-time monitoring information (described in this proposed authorization) will be used to avoid or minimize interactions with either Pacific walruses or polar bears and, therefore, limit potential disturbance of these species.

We also consider the conjectural or speculative impacts associated with these specified activities. The specific congressional direction described below justifies balancing the probability of such impacts with their severity: If potential effects of a specified activity are conjectural or speculative, a finding of negligible impact may be appropriate. A finding of negligible impact may also be appropriate if the probability of occurrence is low, but the potential effects may be significant. In this case, the probability of occurrence of impacts must be balanced with the potential severity of harm to the species or stock when determining negligible

impact. In applying this balancing test, the FWS will thoroughly evaluate the risks involved and the potential impacts on marine mammal populations. Such determination will be made based on the best available scientific information (54 FR 40338, September 29, 1989, quoting 53 FR 8473, March 15, 1988, and 132 Cong. Rec. S 16305 (October 15, 1986)).

The potential effects of most concern here, specific to polar bears, is the mortality of polar bear cubs that could result from disturbances during certain periods of the denning season. The FWS estimated that the probability of greater than or equal to one lethal take that is likely to result in the mortality of a denning polar bear is zero within the 1-year period of this proposed IHA. Therefore, the FWS does not anticipate any lethal take will occur during the IHA period. If a den is disturbed and lethal take were to occur, this take would be limited to only cubs during the denning period. Denning females, the demographic group most important to annual recruitment, are limited to take by Level B harassment. Therefore, the number of potentially available reproductive females that would contribute to recruitment for the SBS stock would remain unaffected if a den disturbance were to result in the mortality of the cubs.

The SBS stock of polar bears is currently estimated as 907 polar bears (Bromaghin et al. 2015, 2021; Atwood et al. 2020). The loss of one litter ranges from 0 percent (0 cubs) to approximately 0.33 percent (3 cubs) of the annual SBS stock size of polar bears (((0 cubs to 3 cubs) ÷907) ×100≈0 to 0.33). Cub litter survival was estimated at 50 percent (90 percent CI: 33–67 percent) for the SBS stock during 2001–2006 (Regehr et al. 2010). A female may lose her litter for several reasons separate from den disturbance. The determining factor for polar bear stock growth is adult female survival (Eberhardt 1990). Consequently, the loss of female cubs has a greater impact on annual recruitment rates for the SBS stock of polar bears compared to male cubs. If a den disturbance were to result in the mortality of the entire litter, the female would be available to breed during the next mating season and could produce another litter during the next denning season.

Based on our projected zero cub mortality associated with these specified activities, and the recognition that even if a den is disturbed, the number of potentially affected cubs would be minimal and the number of reproductive females in the stock would remain the same, the FWS does not anticipate that the conjectural or speculative impacts associated with these specified activities warrant a finding of non-negligible impact or otherwise preclude issuance of this proposed IHA. The potential effects of greatest concern to walrus are associated with human-induced stampedes at walrus coastal haulout sites. Hauled out walruses tend to be in close physical contact, with groups ranging from a few animals up to tens of thousands of individuals—the largest aggregations occurring at land haulouts (Gilbert 1999, Monson et al. 2013, USFWS 2017). Intra-specific trauma at coastal haulouts is a known source of injury and mortality (Garlich-Miller et al. 2011). The risk of stampede-related injuries increases with the number of animals hauled out and with the duration spent on coastal haulouts. Calves and young are the most vulnerable to suffer injuries and/or mortality (USFWS 2017). There has never been a reported large coastal haulout site located in the South Beaufort Sea, nor is there any reason to suspect a large coastal haulout may occur in the near future given the extremely low density and transient nature of walrus in the region. Therefore, the FWS does not anticipate that the conjectural or speculative impacts associated with these specified activities warrant a finding of non-negligible impact or otherwise preclude issuance of this proposed IHA

We reviewed the effects of the specified activities on polar bears, including impacts from surface interactions, aircraft overflights, and den disturbance. We also reviewed the effects of the specified activities on Pacific walruses including vessel activity, which is the primary source of potential exposure during the specified activities. Based on our review of these potential impacts, past monitoring reports, and the biology and natural history of polar bears, we anticipate that such effects will be limited to short-term behavioral disturbances.

We have evaluated climate change regarding Pacific walruses and polar bears as part of the environmental baseline. Climate change is a global phenomenon and was considered as the

overall driver of effects that could alter Pacific walrus and polar bear habitat and behavior. The FWS is currently involved in research to understand how climate change may affect Pacific walruses and polar bears. As we gain a better understanding of climate change effects, we will incorporate the information in future authorizations.

We find that the impacts of these specified activities cannot be reasonably expected to, and are not reasonably likely to, adversely affect either Pacific walruses or SBS polar bears through effects on annual rates of recruitment or survival. We therefore find that the total of the taking estimated above and proposed for authorization will have a negligible impact on Pacific walruses and SBS polar bears.

*Impact on Subsistence Use*

Based on past community consultations, locations of hunting areas, no anticipated overlap of hunting areas and industry projects, and the best scientific information available, including monitoring data from similar activities, we propose a finding that take caused by the specified activities will not have an unmitigable adverse impact on the availability of walruses or polar bears for taking for subsistence uses during the proposed timeframe.

While walruses and polar bears represent a small portion, in terms of the number of animals, of the total subsistence harvest for the Utqiagvik, Nuiqsut, and Kaktovik communities, their harvest is important to Alaska Natives. The project activities are in close proximity to an established industrial area, with the closest known common polar bear harvest locations greater than 70 km (43.5 mi) away. Walrus harvest from Nuiqsut and Kaktovik is opportunistic, and none of the walrus harvests for Utqiagvik, Nuiqsut, or Kaktovik from 2014 through 2022 have occurred within the area of specified activities. Narwhal has committed to notify the Village of Kaktovik and Village of Nuiqsut of the planned activities and document any discussions of potential conflict. Narwhal will make reasonable efforts to ensure that activities do not interfere with subsistence hunting and that adverse effects on the availability of walruses or polar bears are minimized. Should such a concern be voiced, Narwhal will develop a plan of cooperation

(POC) that identifies measures to minimize any adverse effects. The POC will ensure that project activities will not have an unmitigable adverse impact on the availability of the species or stock for subsistence uses. This POC must provide the procedures addressing how Narwhal will work with the affected Alaska Native communities and what actions will be taken to avoid interference with subsistence hunting of walruses or polar bears, as warranted.

The FWS is not aware of information that indicates that walruses or polar bears will be deterred from hunting areas or impacted by the specified project activities in any way that diminishes their availability for subsistence use.

*Least Practicable Adverse Impact*

We evaluated the practicability and effectiveness of mitigation measures based on the nature, scope, and timing of the specified activities; the best available scientific information; and monitoring data during industry activities in the specified geographic region. We propose a finding that the mitigation measures included within Narwhal's request will ensure least practicable adverse impacts on walruses and polar bears and also ensure no unmitigable adverse impacts to the availability of polar bears or walruses for subsistence use.

Polar bear den surveys at the beginning of the winter season; the resulting 805 m (0.5-mi) operational exclusion zone around all known polar bear dens, 24-hour monitoring of any den site located within the 805 m buffer of activity; and restrictions on the timing and types of activities in the vicinity of dens will minimize impacts to denning female polar bears and their cubs during this critical period. Minimum flight elevations over polar bear areas and flight restrictions around observed polar bears and known polar bear dens will reduce the potential for aircraft disturbing polar bears. Finally, Narwhal will implement mitigation measures to prevent the presence and impact of attractants in camps, such as the use of wildlife-resistant waste receptacles, daily food waste incineration, and storage of hazardous materials in drums or other secure containers. These measures are outlined in a polar bear interaction plan that was developed in coordination with the FWS and is part of Narwhal's application for this IHA. Based on the information we currently

have regarding den and aircraft disturbance and polar bear attractants, we concluded that the mitigation measures outlined in Narwhal's request (ECO49 Consulting LLC 2024) and incorporated into this authorization will minimize impacts from the specified SHS, preliminary field surveys, exploratory drilling operations, and summer cleanup activities to the extent practicable.

Several additional potential mitigation measures were considered but determined to be not practicable. These measures are listed below:

- *Required use of helicopters for AIR surveys*—Use of helicopters to survey active dens might lead to greater levels of disturbance and take compared to fixed-wing aircraft. Additionally, there is no published data to indicate increased den detection efficacy of helicopter AIR.
- *Grounding all flights if they must fly below 457 m (1,500 ft)* —Requiring all aircraft to maintain an altitude of 457 m (1,500 ft) at all times is not possible, as some operations may require flying below 457 m (1,500 ft) to perform necessary inspections or maintain safety of flight crew. Aircraft are required to fly above 457 m (1,500 ft) at all times within 805 m (0.5 mi) of an observed polar bear unless there is an emergency or critical logistical need, such as medical supply delivery or fuel resupply.
- *Spatial and temporal restrictions on surface activity*—Some spatial and temporal restrictions of operations were included in Narwhal's request; however, imposing further restrictions would risk preventing the accomplishment of project objectives.
- *One-mile buffer around all known polar bear denning habitat*—Creating one-mile (1.6-km) buffers around all known polar bear denning habitat is not practicable, as much of Narwhal's proposed survey area occurs within 1.6 km (1 mi) of denning habitat; thus, to exclude all areas within 1.6 km (1 mi) of denning habitat would preclude surveys from occurring.
- *One-mile exclusionary buffer around dens detected within project area*—establishing a 1.6 km (1-mi) exclusionary buffer around located den sites was deemed impracticable due to: (1)

potential conflict with ringed seal mitigation measures as required by the National Marine Fisheries Service (NMFS); (2) risks to human health and safety imposed by moving the sea ice road away from grounded sea ice; and (3) logistical impracticalities. However, Narwhal will establish an 805 m (0.5 mi) exclusionary buffer around any dens located within the project area and provide 24-hour monitoring of a den site located within an exclusionary buffer. Narwhal's project activities utilize coastal areas that may overlap with both polar bear and ringed seal habitat. Travel routes will be conducted on grounded sea ice whenever possible. Should a den be discovered in the coastal area, a 1.6 km (1-mi) buffer could force the travel route off of the grounded sea ice, which has the potential to disturb ringed seal layers and is in conflict with NMFS mitigation measures. Additionally, a road not on grounded sea ice may not be able to support the transit load, resulting in risks to human health and safety.

- *Prohibition of driving over high-relief areas, embankments, or stream and river crossings*—While the denning habitat must be considered during tundra travel, complete prohibition is not practicable for operational and safety reasons (e.g., not being able to access project areas or evacuating personnel via the fastest route possible in an emergency).

- *Use of a broader definition of "denning habitat" for operational offsets*—There is no available data to support broadening the defining features of denning habitat beyond that established by the USGS. Such a redefinition would cause an increase in the area surveyed for maternal dens, and the associated increase in potential harassment of polar bears on the surface would outweigh the mitigative benefits.

- *Establishment of corridors for sow and cub transit to the sea ice*—As there is no data to support the existence of natural transit corridors to the sea ice, establishment of corridors in the IHA area would be highly speculative. Therefore, there would be no mitigative benefit realized by their establishment.

- *Requirement of third-party neutral marine mammal observers*—The applicant has committed to the use of a dedicated lead marine mammal observer and other project personnel

serving as designated marine mammal observers during high-resolution seismic surveys. However, operational constraints prevent the applicant from hiring third-party marine mammal observers for all operations due to space considerations. Additional crew may also require additional transit vehicles or larger vessels, which could increase disturbance.

- *Require a mandatory shutdown or power-down if a polar bear or walrus enters the 160-dB ensonification zone*—Vessels will avoid polar bears and walruses in the water to the extent practicable; however, the size of the Level B ensonification zone (3,188 m (10,459 ft) from the sound source) created by the airgun is too big to effectively observe and a walrus or polar bear may enter the Level B zone without being seen. The Level A ensonification zones are so small (10 m (33 ft) or less from the sound source) that the sound pressure levels associated with Level A harassment are inside the vessel's footprint and would not be exceeded at any measurable distance from the source vessel.

- *Require all activities to cease if a walrus or polar bear is injured or killed until an investigation is completed*—The FWS has incorporated into this proposed authorization reporting requirements for all polar bear interactions. While it may aid in any subsequent investigation, ceasing all activities may not be possible or safe in certain circumstances, and thus will not be mandated.

- *Require use of den detection dogs*—It is not feasible or safe to require scent-trained dogs to detect dens due to the large spatial extent that would need to be surveyed within activity areas.

- *Require the use of handheld or vehicle-mounted Forward Looking Infrared (FLIR)*—The efficacy rates for AIR have been found to be four times more likely to detect dens than ground-based FLIR (handheld or vehicle-mounted FLIR) due to impacts of blowing snow on detection. Narwhal has incorporated into their mitigation measures the use of handheld or vehicle-mounted FLIR when transiting rivers occurring in suitable denning habitat, but it is not practicable to use the equipment during all transit.

**References Cited**

A list of the references cited in this notice may be found at https://www.regulations.gov under Docket No. FWS–R7–ES–2025–0021.

**Required Determinations**

*National Environmental Policy Act (NEPA)*

We have prepared a draft environmental assessment in accordance with the NEPA (42 U.S.C. 4321 et seq.). We have preliminarily concluded that authorizing the nonlethal, incidental, unintentional take by Level B harassment of up to 15 individuals from the Pacific walrus population and 13 individuals from the SBS stock of polar bears in the specified geographic region during the specified activities during the regulatory period would not significantly affect the quality of the human environment and, thus, preparation of an environmental impact statement for this incidental harassment authorization is not required by section 102(2) of NEPA or its implementing regulations. We are accepting comments on the draft environmental assessment as specified above in **DATES** and **ADDRESSES**.

*Endangered Species Act (ESA)*

Under the Endangered Species Act (16 U.S.C. 1536(a)(2)), all Federal agencies are required to ensure the actions they authorize are not likely to jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of critical habitat. Prior to issuance of a final IHA, the FWS will complete intra-Service consultation under section 7 of the ESA on our proposed issuance of an IHA. These evaluations and findings will be made available on the FWS's website at: https://ecos.fws.gov/ecp/report/biological-opinion.

*Government-to-Government Consultation*

It is our responsibility to communicate and work directly on a Government-to-Government basis with federally recognized Tribes in developing programs for healthy ecosystems. We are also required to consult with Alaska Native Claims Settlement Act (ANCSA) Corporations in certain circumstances. We seek their full and meaningful participation

in evaluating and addressing conservation concerns for protected species. It is our goal to remain sensitive to Alaska Native culture, and to make information available to Alaska Natives. Our efforts are guided by the following policies and directives:

(1) The Native American Policy of the Service (January 20, 2016);

(2) The Alaska Native Relations Policy (currently in draft form; see 87 FR 66255, November 3, 2022);

(3) Executive Order 13175 (January 9, 2000);

(4) Department of the Interior Secretary's Orders 3206 (June 5, 1997), 3225 (January 19, 2001), 3317 (December 1, 2011), 3342 (October 21, 2016), and 3403 (November 15, 2021), as well as Director's Order 227 (September 8, 2022);

(5) Alaska Government-to-Government Policy (a departmental memorandum issued January 18, 2001); and

(6) Department of the Interior's policies on consultation with Alaska Native Tribes and Organizations.

We have evaluated possible effects of the proposed IHA on federally recognized Alaska Native Tribes and ANCSA Corporations. The FWS has determined that authorizing the Level B harassment of up to 15 walruses and 13 polar bears from Narwhal's specified activities would not have any Tribal implications or ANCSA Corporation implications and, therefore, Government-to-Government consultation or Government-to-ANCSA Corporation consultation is not necessary. However, we invite continued discussion, either about the project and its impacts or about our coordination and information exchange throughout the IHA/POC public comment process.

*Paperwork Reduction Act*

This rule does not contain any new collection of information that requires approval by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.). OMB has previously approved the information collection requirements

associated with IHAs and assigned OMB Control Number 1018–0194 (expires 8/31/2026). An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

**Proposed Authorization**

We propose to authorize the nonlethal, incidental take by Level B harassment of 15 individuals from the Pacific walrus population and 13 individuals from the SBS stock of polar bears. Authorized take will be limited to disruption of behavioral patterns that may be caused by the shallow hazard surveys, preliminary field surveys, exploratory drilling operations, and summer cleanup activities by Narwhal, LLC in West Harrison Bay, Alaska, from August 1, 2025, through July 31, 2026. We do not anticipate or authorize any take by Level A harassment, injury, or death to polar bears resulting from these activities.

A. *General Conditions for the IHA for Narwhal*

1. Activities must be conducted in the manner described in the Revised Request dated April 2025 (received by the FWS April 3, 2025) for an IHA and in accordance with all applicable conditions and mitigation measures. The taking of walruses or polar bears whenever the required conditions, mitigation, monitoring, and reporting measures are not fully implemented as required by the IHA is prohibited. Failure to follow the measures specified both in the revised request and within this proposed authorization may result in the modification, suspension, or revocation of the IHA.

2. If project activities cause unauthorized take (i.e., take of more than 15 walruses or 13 polar bears from the SBS stock, a form of take other than Level B harassment, or take of one or more polar bears through methods not described in the IHA), Narwhal must take the following actions:

i. Cease its activities immediately (or reduce activities to the minimum level necessary to maintain safety);

ii. Report the details of the incident to the FWS within 48 hours; and

iii. Suspend further activities until the FWS has reviewed the circumstances and determined whether additional mitigation measures are necessary to avoid further unauthorized taking.

3. All operations managers, vehicle operators, and vessel operators must receive a copy of this IHA and maintain access to it for reference at all times during project work. These personnel must understand, be fully aware of, and be capable of implementing the conditions of the IHA at all times during project work.

4. This IHA will apply to activities associated with the proposed project as described in this document and in Narwhal's revised request. Changes to the proposed project without prior authorization may invalidate the IHA.

5. Narwhal's revised request is approved and fully incorporated into this IHA unless exceptions are specifically noted herein. The revised request includes:

i. Narwhal's *Request for Incidental Harassment Authorization Under the Marine Mammal Protection Act for Exploration Activities in West Harrison Bay, Alaska*, dated November 2024 and revised April 2025 (revised application received by the FWS April 3, 2025), which includes Narwhal's *Polar Bear and Pacific Walrus Safety, Awareness, and Interaction Plan*, and geospatial files.

6. Operators will allow FWS personnel or the FWS's designated representative to visit project work sites to monitor for impacts to walruses or polar bears and subsistence uses of walruses or polar bears at any time throughout project activities so long as it is safe to do so. "Operators" are all personnel operating under Narwhal's authority, including all contractors and subcontractors.

Narwhal must implement the following policies and procedures to avoid interactions and minimize to the greatest extent practicable any adverse impacts on walruses or polar bears, their habitat, and the availability of these marine mammals for subsistence uses.

B. *General avoidance measures.*

7. Narwhal must cooperate with the FWS and other designated Federal, State, and local agencies to monitor and mitigate the impacts of activities on walruses and polar bears.

8. Trained and qualified personnel must be designated to monitor at all times for the presence of walruses and polar bears, initiate mitigation measures, and monitor, record, and report the effects of the activities on walruses and polar bears. Narwhal must provide all operators with polar bear awareness training prior to their participation in project activities.

9. An FWS-approved polar bear and Pacific walrus safety, awareness, and interaction plan must be on file with the FWS's Marine Mammal Management office and available on site. The interaction plan must include:

i. A description of the proposed activity (i.e., a summary of the plan of operations during the proposed activity);

ii. A food, waste, and other attractants management plan;

iii. Personnel training policies, procedures, and materials;

iv. Site-specific polar bear interaction risk evaluation and mitigation measures;

v. Polar bear and walrus avoidance and encounter procedures; and

vi. Polar bear and walrus observation and reporting procedures.

Narwhal must contact potentially affected subsistence communities and hunter organizations to discuss potential conflicts caused by the activities and provide the FWS documentation of communications as described in D. *Measures to Reduce Impacts to Subsistence Users*.

10. *Mitigation measures for aircraft.* Narwhal must undertake the following activities to limit disturbance from aircraft activities:

i. Operators of support aircraft shall, at all times, conduct their activities at the maximum distance practicable from concentrations of walruses or polar bears.

ii. Fixed-wing aircraft operations within the IHA area must maintain a minimum altitude of 457 m (1,500 ft) above ground level when safe and operationally possible. Helicopter

operations within the IHA area will maintain a minimum altitude of 457 m (1,500 ft) above ground level when safe and operationally possible to scan the work area before making landings.

iii. Under no circumstances, other than an emergency, will aircraft operate at an altitude lower than 457 m (1,500 ft) within 805 m (0.5 mi) of a polar bear or walrus observed on ice or land measured in a straight line between the polar bear and the ground directly underneath the aircraft. Helicopters may not hover or circle above such areas or within 805 m (0.5 mi) of such areas. Unless weather conditions or operational constraints necessitate operation of aircraft at altitudes below 457 m (1,500 ft), the operator must avoid areas of known polar bear or walrus concentrations and should take precautions to avoid flying directly over or within 805 m (0.5 mi) of these areas.

iv. Aircraft may not be operated in such a way as to separate individual polar bears or walruses from a group (i.e., two or more individuals).

11. *Mitigation measures for winter activities*. Narwhal must undertake the following activities to limit disturbance around known polar bear dens:

i. Narwhal must conduct two aerial infrared (AIR) surveys of all denning habitat located within 1.6 km (1 mi) of specified activities in an attempt to identify maternal polar bear dens. The first survey obtained must occur between December 1 and December 25, 2025, and the second survey obtained must occur between December 15, 2025, and January 10, 2026, with at least 24 hours occurring between the completion of the first survey and the beginning of the second survey. Surveys must not be conducted during daytime or times when weather conditions significantly hinder visibility (e.g., blowing snow, precipitation, or airborne moisture). A scientist with experience in real-time aerial infrared interpretation must be onboard during all flights. All AIR survey videos must be made available to the FWS within 48 hours of survey completion.

ii. All observed or suspected polar bear dens must be reported to the FWS prior to the initiation of activities.

iii. If a suspected den site is located, Narwhal will immediately consult with the FWS to analyze the data and determine if additional surveys or mitigation measures are required. The FWS will determine whether the suspected den is to be treated as a putative den for the purposes of this IHA.

iv. Operators must observe an 805 m (0.5 mi) operational exclusion zone around all putative polar bear dens during the denning season (November through April, or until the female and cubs leave the areas). Should a suspected den be discovered within 805 m (0.5 mi) of activities, work must cease, and the FWS contacted for guidance. The FWS will evaluate these instances on a case-by-case basis to determine the appropriate action. Potential actions may range from cessation or modification of work to conducting additional monitoring, and the holder of the authorization must comply with any additional measures specified.

v. In determining the denning habitat that requires surveys, use the den habitat map developed by the USGS. A map of potential coastal polar bear denning habitat can be found at https://www.usgs.gov/centers/asc/science/polar-bear-maternal-denning?qt-science_center_objects=4#qt-science_center_objects.

vi. During the emergence season, February 15 to April 15, ATV travel along the coastal sea ice road must include a lead ATV equipped with a vehicle-mounted or hand-held thermal imaging device to scan for sows with cubs that are moving to the sea ice. Should sows and cubs of the year be seen, traffic must be halted to allow their unimpeded travel to the sea ice.

12. *Mitigation measures for in-water activities.*

i. Prior to and during airboat use, Narwhal must assess the access route for polar bears. While workers are transiting in the airboat, a designated occupant must be assigned to scan the surrounding area for marine mammals.

ii. Vessels must always maintain the maximum distance possible from polar bears and walruses. Vessels should never approach within an 805-m (0.5-mi) radius of polar bears or walruses unless it is an emergency.

iii. Vessels must take all practical measures (i.e., reduce speed, change course heading) to avoid approaching polar bears or walruses in the water, avoid separating individual polar bears or walruses from a group, encircling polar bears or walruses, and impeding movement of polar bears or walruses.

iv. When operationally feasible, vessels should engage in methods to limit vessel noise, such as reducing speed, performing regular vessel maintenance, using fewer vessels, and/or implementing vessel-quieting technologies (e.g., propeller design, wake improvement devices, propulsion enhancement measures, hull treatment solutions).

v. During seismic operations, Narwhal must designate a marine mammal observer aboard the source vessel that will monitor the area surrounding the seismic sound source. In the event that a walrus or polar bear is seen, Narwhal must report the encounter to the FWS following the requirements in *C. Monitoring*.

C. *Monitoring*

13. Operators must provide on-site observers and implement the FWS-approved polar bear and Pacific walrus safety, awareness, and interaction plan to apply mitigation measures, monitor the project's effects on polar bears and subsistence uses, and evaluate the effectiveness of mitigation measures.

14. All on-site observers shall complete an FWS-provided training course designed to familiarize individuals with monitoring and mitigation activities identified in the polar bear and Pacific walrus safety, awareness, and interaction plan.

15. On-site observers must be present during all operations and must record all Pacific walrus and polar bear observations, identify and document potential harassment, and work with personnel to implement appropriate mitigation measures.

16. Operators shall cooperate with the FWS and other designated Federal, State, and local agencies to monitor the impacts of project activities on walruses and polar bears. Where information is insufficient to evaluate the potential effects of activities on walruses and polar

bears and the subsistence use of this species, Narwhal may be required to participate in joint monitoring efforts to address these information needs and ensure the least practicable impact to this resource.

D. *Measures to Reduce Impacts to Subsistence Users*

Narwhal must conduct its activities in a manner that, to the greatest extent practicable, minimizes adverse impacts on the availability of walruses and polar bears for subsistence uses.

18. Narwhal will be required to develop an FWS-approved POC if, through community consultation, concerns are raised regarding impacts to subsistence harvest or Alaska Native Tribes and Organizations.

19. If required, Narwhal will implement the FWS-approved POC.

20. Prior to conducting the work, Narwhal will take the following steps to reduce potential effects on subsistence harvest of walruses and polar bears:

i. Avoid work in areas of known polar bear subsistence harvest;

ii. Notify the Native Village of Kaktovik and the Native Village of Nuiqsit of the proposed project activities;

iii. Work to resolve any concerns of potentially affected Alaska Native Tribal Organizations and Corporations regarding the project's effects on subsistence hunting of walruses and polar bears;

iv. If any unresolved or ongoing concerns of potentially affected Alaska Native Tribal Organizations and Corporations remain, modify the POC in consultation with the FWS and subsistence stakeholders to address these concerns; and

v. Implement FWS-required mitigation measures that will reduce impacts to subsistence users and their resources.

E. *Reporting Requirements*

Narwhal must report the results of monitoring to the FWS Marine Mammals Management office via email at fw7_mmm_reports@fws.gov.

21. *Activity progress reports.* Narwhal must notify the FWS at least 48 hours prior to the onset of activities;

22. *Walrus observation reports.* Narwhal must report, within 48 hours, all observations of walruses during any activity. Upon request, monitoring report data must be provided in a common electronic format (to be approved by the FWS). Information in the observation report must include, but is not limited to:

i. Date, time, and location of each walrus sighting;

ii. Number of walruses;

iii. Sex and age (if known);

iv. Observer name and contact information;

v. Weather, visibility, sea state, and sea ice conditions at the time of observation;

vi. Estimated range at closest approach;

vii. Industry activity at time of sighting;

viii. Behavior of animals sighted;

ix. Description of the encounter;

x. Duration of the encounter; and

xi. Mitigation actions taken.

23. *Polar bear observation reports.* Narwhal must report, within 48 hours, all observations of polar bears and potential polar bear dens during any project activities. Upon request, monitoring report data must be provided in a common electronic format (to be specified by the FWS). Information in the observation report must include, but need not be limited to:

i. Date and time of each observation;

ii. Locations of the observer and polar bears (GPS coordinates if possible);

iii. Number of polar bears;

iv. Sex and age class—adult, subadult, cub (if known);

v. Observer name and contact information;

vi. Weather, visibility, and, if at sea, sea state and sea ice conditions at the time of observation;

vii. Estimated closest distance of polar bears from personnel and facilities;

viii. Type of work being conducted at time of sighting;

ix. Possible attractants present;

x. Polar bear behavior—initial behavior when first observed (e.g., walking, swimming, resting, etc.);

xi. Potential reaction—behavior of polar bear potentially in response to presence or activity of personnel and equipment;

xii. Description of the encounter;

xiii. Duration of the encounter; and

xiv. Mitigation actions taken.

24. *Human–polar bear interaction reports.* Narwhal must report all human–polar bear interaction incidents immediately, and not later than 48 hours after the incident. Human–polar bear interactions include:

i. Any situation in which there is a possibility for unauthorized take. For instance, when project activities exceed those included in an IHA, when a mitigation measure was required but not enacted, or when injury or death of a polar bear occurs. Reports must include all information specified for an observation report in condition 23 above, a complete detailed description of the incident, and any other actions taken.

ii. Injured, dead, or distressed polar bears that are clearly not associated with project activities (e.g., animals found outside the project area, previously wounded animals, or carcasses with moderate to advanced decomposition or scavenger damage) must also be reported to the FWS immediately, and not later than 48 hours after discovery. Photographs, video, location information, or any other available documentation must be included.

25. *Final report.* The results of monitoring and mitigation efforts identified in the marine mammal avoidance and interaction plan must be submitted to the FWS for review within 90 days of the expiration of this IHA. Upon request, final report data must be provided in a common electronic format (to be specified by the FWS). Information in the final report must include, but need not be limited to:

i. Copies of all observation reports submitted under the IHA;

ii. A summary of the observation reports;

iii. A summary of monitoring and mitigation efforts including areas, total hours, total distances, and distribution;

iv. Analysis of factors affecting the visibility and detectability of walruses and polar bears during monitoring;

v. Analysis of the effectiveness of mitigation measures;

vi. A summary and analysis of the distribution, abundance, and behavior of all walruses and polar bears observed; and

vii. Estimates of take in relation to the specified activities.

**Request for Public Comments**

If you wish to comment on this proposed authorization, the associated draft environmental assessment, or both documents, you may submit your comments by either of the methods described in **ADDRESSES**. Please identify if you are commenting on the proposed authorization, draft environmental assessment, or both, make your comments as specific as possible, confine them to issues pertinent to the documents, and explain the reason for any changes you recommend. Where possible, your comments should reference the specific section or paragraph that you are addressing. The FWS will consider all comments that are received before the close of the comment period (see **DATES**). The FWS does not anticipate extending the public comment period beyond the 30 days required under section 101(a)(5)(D)(iii) of the MMPA.

Comments, including names and street addresses of respondents, will become part of the administrative record for this proposal. Before including your address, telephone number, email address, or other personal identifying information in your comment, be advised that your entire comment, including your personal identifying information, may be made publicly available at any time. While you can ask us in your comments to withhold your personal identifying information from public review, we cannot guarantee that we will be able to do so.

**Peter Fasbender**,
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*Alaska Region.*

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