

**DEPARTMENT OF THE INTERIOR****Fish and Wildlife Service****50 CFR Part 18**

[FWS-R7-FHC-2008-0040; 71490-1351-0000-L5]

RIN 1018-AU41

**Marine Mammals; Incidental Take During Specified Activities****AGENCY:** Fish and Wildlife Service, Interior.**ACTION:** Final rule.

**SUMMARY:** The Fish and Wildlife Service (Service or we) has developed regulations that authorize the nonlethal, incidental, unintentional take of small numbers of Pacific walrus (*Odobenus rosmarus divergens*) and polar bears (*Ursus maritimus*) during oil and gas industry (Industry) exploration activities in the Chukchi Sea and adjacent western coast of Alaska. This rule will be effective for 5 years from date of issuance. We find that the total expected takings of Pacific walrus (walrus) and polar bears during Industry exploration activities will impact small numbers of animals, will have a negligible impact on these species, and will not have an unmitigable adverse impact on the availability of these species for subsistence use by Alaska Natives. The regulations include: permissible methods of nonlethal taking; measures to ensure that Industry activities will have the least practicable adverse impact on the species and their habitat, and on the availability of these species for subsistence uses; and requirements for monitoring and reporting. The Service will issue Letters of Authorization (LOAs) to conduct activities under the provisions of these regulations.

**DATES:** This rule is effective June 11, 2008, and remains effective through June 11, 2013. We find that it is appropriate to make this rule effective immediately because it relieves restrictions that would otherwise apply under the Marine Mammal Protection Act and therefore section 553(d)(1) of the Administrative Procedure Act applies.

**FOR FURTHER INFORMATION CONTACT:** Craig Perham, Office of Marine Mammals Management, U.S. Fish and Wildlife Service, 1011 East Tudor Road, Anchorage, AK 99503, telephone 907-786-3810 or 1-800-362-5148, or e-mail [R7\\_MMM\\_Comment@fws.gov](mailto:R7_MMM_Comment@fws.gov).

**SUPPLEMENTARY INFORMATION:****Background**

Section 101(a)(5)(A) of the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1371(a)(5)(A)) gives the Secretary of the Interior (Secretary) through the Director of the Service (we) the authority to allow the incidental, but not intentional, taking of small numbers of marine mammals, in response to requests by U.S. citizens (you) [as defined in 50 CFR 18.27(c)] engaged in a specified activity (other than commercial fishing) in a specified geographic region. According to the MMPA, we shall allow this incidental taking if (1) we make a finding that the total of such taking for the 5-year regulatory period will have no more than a negligible impact on these species and will not have an unmitigable adverse impact on the availability of these species for taking for subsistence use by Alaska Natives, and (2) we issue regulations that set forth (i) permissible methods of taking, (ii) means of effecting the least practicable adverse impact on the species and their habitat and on the availability of the species for subsistence uses, and (iii) requirements for monitoring and reporting. If we issue regulations allowing such incidental taking, we can issue LOAs to conduct activities under the provisions of these regulations when requested by citizens of the United States.

The term "take," as defined by the MMPA, means to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal. Harassment, as defined by the MMPA, 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 calls this 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 calls this Level B harassment] (16 U.S.C. 1362).

The terms "small numbers," "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. "Small numbers" is defined as "a portion of a marine mammal species or stock whose taking would have a negligible impact on that species or stock." "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."

Industry conducts activities, such as oil and gas exploration, in marine mammal habitat that could result in the taking of marine mammals. Although Industry is under no legal requirement to obtain incidental take authorization, since 1991, Industry has requested, and we have issued regulations for, incidental take authorization for conducting activities in areas of walrus and polar bear habitat. We issued incidental take regulations for walrus and polar bears in the Chukchi Sea for the period 1991-1996 (56 FR 27443; June 14, 1991). In the Beaufort Sea, incidental take regulations have been issued from 1993 to present: November 16, 1993 (58 FR 60402); August 17, 1995 (60 FR 42805); January 28, 1999 (64 FR 4328); February 3, 2000 (65 FR 5275); March 30, 2000 (65 FR 16828); November 28, 2003 (68 FR 66744); and August 2, 2006 (71 FR 43926). These regulations are at 50 CFR part 18, subpart J (§§ 18.121-18.129).

**Summary of Current Request**

On August 5, 2005, the Alaska Oil and Gas Association (AOGA), on behalf of its members, (Agrium Kenai Nitrogen Operations, Alyeska Pipeline Service Company, Anadarko Petroleum Corporation, BP Exploration (Alaska) Inc., Chevron, Eni Petroleum, ExxonMobil Production Company, Flint Hills Resources, Alaska, Forest Oil Corporation, Marathon Oil Company, Petro-Canada (Alaska) Inc., Petro Star Inc., Pioneer Natural Resources Alaska, Inc., Shell Exploration & Production Company, Tesoro Alaska Company, and XTO Energy, Inc.) requested that the Service issue regulations to allow the nonlethal, incidental take of small numbers of walrus and polar bears in the Chukchi Sea for a period of 5 years. The Service requested additional information from AOGA regarding the nature, scope, and location of proposed

activities for its analysis of potential impacts on walruses, polar bears, and subsistence harvests of these resources. On November 22, 2006, Shell Offshore Inc. (SOI) provided an addendum to the AOGA petition describing SOI's projected activities for 2007–2012.

On January 2, 2007, AOGA, on behalf of its members, also provided an addendum to its original petition referencing a Draft Environmental Impact Statement prepared by the Minerals Management Service (MMS) for the Chukchi Sea Planning Area: Oil and Gas Lease Sale 193 and Seismic Surveying Activities in the Chukchi Sea (Chukchi Sea DEIS). The Chukchi Sea DEIS included estimates of all reasonably foreseeable oil and gas activities associated with proposed Outer Continental Shelf (OCS) lease sales in the Chukchi Sea Planning Area. The AOGA petition requested that the Service consider activities described in the Chukchi Sea DEIS for the period 2007–2012. On January 2, 2007, ConocoPhillips Alaska, Inc. (CPAI), also provided an addendum to the original AOGA petition describing CPAI's projected activities from 2007–2012. The petition and addendums are available at: ([Alaska.fws.gov/fisheries/mmm/itr.htm](http://Alaska.fws.gov/fisheries/mmm/itr.htm)). The Chukchi Sea DEIS, referenced in the AOGA petition, has subsequently been finalized and is available at [http://www.mms.gov/alaska/ref/EIS%20EA/Chukchi\\_feis\\_Sale193/feis\\_193.htm](http://www.mms.gov/alaska/ref/EIS%20EA/Chukchi_feis_Sale193/feis_193.htm) (OCS EIS/EA MMS 2007–026).

The combined requests are for regulations to allow the incidental, nonlethal take of small numbers of walruses and polar bears in association with oil and gas activities in the Chukchi Sea and adjacent coastline projected out to the year 2012. The information provided by the petitioners indicates that projected oil and gas activities over this timeframe will be limited to exploration activities. Development and production activities were not considered in the requests. The petitioners have also specifically requested that these regulations be issued for nonlethal take. The petitioners have indicated that, through the implementation of appropriate mitigation measures, they are confident that no lethal take will occur.

Prior to issuing regulations in response to this request, we must evaluate the level of industrial activities, their associated potential impacts to walruses and polar bears, and their effects on the availability of these species for subsistence use. All projected exploration activities described by SOI, CPAI, and AOGA (on behalf of its members) in their petitions,

as well as projections of reasonably foreseeable activities for the period 2007–2012 described in the Chukchi Sea EIS were considered in our analysis. The activities and geographic region specified in the requests, and considered in these regulations are described in the ensuing sections titled “Description of Geographic Region” and “Description of Activities.”

#### Description of Regulations

The regulations are limited to the nonlethal, incidental take of small numbers of walruses and polar bears associated with oil and gas exploration activities (geophysical seismic surveys, exploratory drilling, and associated support activities) in the Chukchi Sea and adjacent coast of Alaska and would be effective for a period of up to 5 years from the date of issuance. We assessed the geographic region, as outlined in the “Description of Geographic Region,” and the type of industrial activities, as outlined in the “Description of Activities” section. No development or production activities are anticipated over this timeframe, or included in the regulations.

The total estimated level of activity covered by these regulations, as outlined in the “Description of Activities” section, was based on all projected exploration activities described by SOI, CPAI, and AOGA (on behalf of its members) in their petitions, as well as projections of reasonably foreseeable activities for the period 2007–2012 described in the Chukchi Sea EIS. If the level of activity is more than anticipated, such as additional support vessels or aircraft, more drilling units, or more miles of geophysical surveys, the Service must re-evaluate its findings to determine if they continue to be appropriate.

It is important to note that these regulations do not authorize, or “permit,” the actual activities associated with oil and gas exploration in the Chukchi Sea. Rather, they will authorize the nonlethal incidental, unintentional take of small numbers of walruses and polar bears associated with those activities based on standards set forth in the MMPA. The MMS, the U.S. Army Corps of Engineers (COE), and the Bureau of Land Management (BLM) are responsible for permitting activities associated with oil and gas activities in Federal waters and on Federal lands. The State of Alaska is responsible for permitting activities on State lands and in State waters.

The regulations include permissible methods of nonlethal taking, measures to ensure the least practicable adverse impact on the species and the

availability of these species for subsistence uses, and requirements for monitoring and reporting. The process for nonlethal incidental take regulations will be that persons seeking taking authorization for particular projects must apply for an LOA to cover nonlethal take associated with specified exploration activities under the regulations. Each group or individual conducting Industry-related activity within the area covered by these regulations may request an LOA.

A separate LOA is mandatory for each activity, (i.e., geophysical survey, seismic activity, and exploratory drilling operation). We must receive applications for LOAs at least 90 days before the activity is to begin.

Applicants for LOAs must submit an Operations Plan for the activity, a polar bear interaction plan, and a site-specific marine mammal monitoring and mitigation plan to monitor the effects of authorized activities on walruses and polar bears. A report on all exploration and monitoring activities must be submitted to the Service within 90 days after the completed activity. Details of monitoring and reporting requirements are further described in “Potential Effects of Oil and Gas Industry Activities on Pacific Walruses and Polar Bears.”

Depending upon the nature, timing, and location of a proposed activity, applicants may also have to develop a Plan of Cooperation (POC) with potentially affected subsistence communities to minimize interactions with subsistence users. The POC is further described in “Potential Effects of Oil and Gas Industry Activities on Subsistence Uses of Pacific Walruses and Polar Bears.”

We will evaluate each request for an LOA based upon the specific activity and the specific location. Each authorization will identify allowable methods or conditions specific to that activity and location. For example, we will consider seasonal or location-specific restrictions to limit interactions between exploration activities and walrus aggregations, or interference with subsistence hunting activities. Individual LOAs will include monitoring and reporting requirements specific to each activity, as well as any measures necessary for mitigating impacts to these species and the subsistence use of these species. The granting of each LOA will be based on a determination that the total level of taking by all applicants in any one year is consistent with the estimated level used to make a finding of negligible impact and a finding of no unmitigable adverse impacts on the availability of

the species or the stock for subsistence uses. We will publish in the **Federal Register** a notice of issuance of LOAs. More information on applying for and receiving an LOA can be found at 50 CFR 18.27(f).

The status of polar bears range wide was reviewed for potential listing under the Endangered Species Act and was listed as threatened on May 15, 2008 (73 FR 28212). The Service conducted an intra-Service section 7 consultation for these regulations, which resulted in a "no jeopardy" conclusion and developed a process to incorporate section 7 consultations under the ESA into the established framework for processing LOAs.

### Description of Geographic Region

These regulations will allow Industry operators to incidentally take small numbers of Pacific walrus and polar bears within the same area, hereafter referred to as the Chukchi Sea Region (Figure 1). The geographic area covered by the request is the continental shelf of the Arctic Ocean adjacent to western Alaska. This area includes the waters (State of Alaska and OCS waters) and seabed of the Chukchi Sea, which encompasses all waters north and west of Point Hope (68°20'20" N, -166°50'40" W, BGN 1947) to the U.S.-Russia Convention Line of 1867, west of a north-south line through Point Barrow (71°23'29" N, -156°28'30" W, BGN 1944), and up to 200 miles north of Point Barrow. The region includes that area defined as the MMS OCS oil and gas Lease Sale 193 in the Chukchi Sea Planning Area. The region also includes the terrestrial coastal land 25 miles inland between the western boundary of the south National Petroleum Reserve-Alaska (NPR-A) near Icy Cape (70°20'00", -148°12'00") and the north-south line from Point Barrow. The geographic region encompasses an area of approximately 90,000 square miles. This terrestrial region encompasses a portion of the Northwest and South Planning Areas of the NPR-A. It is noteworthy that the north-south line at Point Barrow is the western border of the geographic region in the Beaufort Sea incidental take regulations (71 FR 43926; August 2, 2006).

### Description of Activities

This section reviews the types and scale of oil and gas activities projected to occur in the Chukchi Sea Region over the specified time period (2007–2012). This information is based upon information provided by the petitioners and referenced in the Chukchi Sea EIS. The Service has used these descriptions of activity as a basis for its findings. If

requests for LOAs exceed the projected scope of activity analyzed under these regulations, the Service will reevaluate its findings to determine if they continue to be appropriate before further LOAs are issued.

The Service does not know the specific locations where oil and gas exploration will occur over the proposed regulatory period. The location and scope of specific activities will be determined based on a variety of factors, including the outcome of future Federal and State oil and gas lease sales and information gathered through subsequent rounds of exploration discovery. The information provided by the petitioners indicates that offshore exploration activities will be carried out during the open water season to avoid seasonal pack ice. Onshore exploration activities are not expected to occur in the vicinity of known polar bear denning areas or coastal walrus haulouts.

Incidental take regulations do not authorize the placement and location of Industry activities; they can only authorize incidental nonlethal take of walrus and polar bears. Allowing the activity at particular locations is part of the permitting process that is authorized by the lead permitting agency, such as the COE or BLM. The specific dates and durations of the individual operations and their geographic locations will be provided to the Service in detail when requests for LOAs are submitted.

Oil and gas activities anticipated and considered in our analysis of incidental take regulations include: (1) Marine-streamer 3D and 2D seismic surveys; (2) high-resolution site-clearance surveys; (3) offshore exploration drilling; (4) onshore seismic exploration and exploratory drilling; (5) and the associated support activities for the afore-mentioned activities. Descriptions of these activities follow.

#### *Marine-Streamer 3D and 2D Seismic Surveys*

Marine seismic surveys are conducted to locate geological structures potentially capable of containing petroleum accumulations. Air guns are the typical acoustic (sound) source for 2-dimensional and 3-dimensional (2D and 3D, respectively) seismic surveys. An outgoing sound signal is created by venting high-pressure air from the air guns into the water to produce an air-filled cavity (bubble) that expands and contracts. A group of air guns is usually deployed in an array to produce a downward-focused sound signal. Air gun array volumes for both 2D and 3D seismic surveys are expected to range from 1,800–6,000 cubic inches (in<sup>3</sup>). The

air guns are fired at short, regular intervals, so the arrays emit pulsed rather than continuous sound. While most of the energy is focused downward and the short duration of each pulse limits the total energy into the water column, the sound can propagate horizontally for several kilometers.

A 3D source array typically consists of two to three sub-arrays of six to nine air guns each, and is about 12.5–18 meters (m) long and 16–36 m wide. The size of the source-array can vary during the seismic survey to optimize the resolution of the geophysical data collected at any particular site. Vessels usually tow up to three source arrays, depending on the survey-design specifications. Most 3D operations use a single source vessel; however, in a few instances, more than one source vessel may be used. The sound-source level (zero-to-peak) associated with typical 3D seismic surveys ranges between 233 and 240 decibels at 1 meter (re 1  $\mu$ Pa at 1 m).

The vessels conducting 3D surveys are generally 70–90 m (330–295 ft) long. Surveys are typically acquired at a vessel speed of approximately 8.3 km/hour (4.5 knots). Source arrays are activated approximately every 10–15 seconds, depending on vessel speed. The timing between outgoing sound signals can vary for different surveys to achieve the desired "shot point" spacing to meet the geological objectives of the survey; typical spacing is 25–37.5 m (27–41 yards) wide. The receiving arrays could include multiple (4–16) streamer-receiver cables towed behind the source array. Streamer cables contain numerous hydrophone elements at fixed distances within each cable. Each streamer can be 3–8 km (2–5 mi) long with an overall array width of up to 1,500 m (1,640 yards) between outermost streamer cables. Biodegradable liquid paraffin is used to fill the streamer and provide buoyancy. Solid/gel streamer cables also are used. The wide extent of this towed equipment limits both the turning speed and the area a vessel covers with a single pass over a geologic target. It is, therefore, common practice to acquire data using an offset racetrack pattern. Adjacent transit lines for a survey generally are spaced several hundred meters apart and are parallel to each other across the survey area. Seismic surveys are conducted day and night when ocean conditions are favorable, and one survey effort may continue for weeks or months, depending on the size of the survey. Data-acquisition is affected by the arrays towed by the survey vessel and weather conditions. Typically, data are only collected

between 25 and 30 percent of the time (or 6–8 hours a day) because of equipment or weather problems. In addition to downtime due to weather, sea conditions, turning between lines, and equipment maintenance, surveys could be suspended to avoid interactions with biological resources. The MMS estimates that individual surveys could last between 20–30 days (with downtime) to cover a 322 km<sup>2</sup> (200 mi<sup>2</sup>) area.

Marine-streamer 2D surveys use similar geophysical-survey techniques as 3D surveys, but both the mode of operation and general vessel type used are different. The 2D surveys provide a less-detailed subsurface image because the survey lines are spaced farther apart, but they cover wider areas to image geologic structure on more of a regional basis. Large prospects are easily identified on 2D seismic data, but detailed images of the prospective areas within a large prospect can only be seen using 3D data. The 2D seismic-survey vessels generally are smaller than 3D-survey vessels, although larger 3D-survey vessels are also capable of conducting 2D surveys. The 2D source array typically consists of three or more sub-arrays of six to eight air gun sources each. The sound-source level (zero-to-peak) associated with 2D marine seismic surveys are the same as 3D marine seismic surveys (233–240 dB re 1  $\mu$ Pa at 1 m). Typically, a single hydrophone streamer cable approximately 8–12 km long is towed behind the survey vessel. The 2D surveys acquire data along single track lines that are spread more widely apart (usually several miles) than are track lines for 3D surveys (usually several hundred meters).

Both 3D and 2D marine-streamer surveys require a largely ice-free environment to allow effective operation and maneuvering of the air gun arrays and long streamers. In the Chukchi Sea Region, the timing and areas of the surveys will be dictated by ice conditions. The data-acquisition season in the Chukchi Sea could start sometime in July and end sometime in early November. Even during the short summer season, there are periodic incursions of sea ice, so there is no guarantee that any given location will be ice free throughout the survey.

Approximately 160,934 km (100,000 line-miles) of 2D seismic surveys already have been collected in the Chukchi Sea program area, so the MMS assumes that additional geophysical surveys will be primarily 3D surveys focusing on specific leasing targets surrounding OCS Lease Sale 193. The 3D surveys are likely to continue during the early phase of exploration when

wells are drilled; however, the number of surveys is expected to decrease over time as data is collected over the prime prospects and these prospects are tested by drilling.

Based upon information provided by the petitioners, and estimates prepared by the MMS in the Chukchi Sea EIS, the Service estimates that, in any given year during the specified timeframe (2007–2012), up to four seismic survey vessels could be operating simultaneously in the Chukchi Sea Region during the open water season. During the 2006 open water season, three seismic surveys were conducted, while only one seismic survey was conducted during the 2007 open-water season. Each seismic vessel is expected to collect between 3,200–14,500 km (2,000–9,000 linear miles) of seismic survey data. Seismic surveys are expected to occur in open water conditions between July 1 and November 30 each year. We estimate that each seismic survey vessel will be accompanied or serviced by one to three support vessels. Helicopters may also be used, when available, for vessel support and crew changes.

#### *High-Resolution Site-Clearance Surveys*

Based on mapping of the subsurface structures using 2D and 3D seismic data, several well locations may be proposed. Prior to drilling deep test wells, high-resolution site clearance seismic surveys and geotechnical studies will be necessary to examine the proposed exploration drilling locations for geologic hazards, archeological features, and biological populations. Site clearance and studies required for exploration will be conducted during the open water season before a drill rig is mobilized to the site. A typical operation consists of a vessel towing an acoustic source (air gun) about 25 m behind the ship and a 600-m streamer cable with a tail buoy. The source array usually is a single array composed of one or more air guns. A 2D high-resolution site-clearance survey usually has a single air gun, while a 3D high-resolution site survey usually tows an array of air guns. The ships travel at 5.6–6.5 km/hour (3–3.5 knots), and the source is activated every 7–8 seconds (or about every 12.5 m). All vessel operations are designed to be ultra-quiet, as the higher frequencies used in high-resolution work are easily masked by the vessel noise. Typical surveys cover one OCS block at a time. MMS regulations require information be gathered on a 300-by 900-m grid, which amounts to about 129 line kilometers of data per lease block. If there is a high probability of archeological resources,

the north-south lines are 50 m apart and the 900 m remains the same.

Including line turns, the time to survey a lease block is approximately 36 hours. Air gun volumes for high-resolution surveys typically are 90–150 in<sup>3</sup>, and the output of a 90-in<sup>3</sup> air gun ranges from 229–233 dB high-resolution re 1  $\mu$ Pa at 1m. Air gun pressures typically are 2,000 psi (pounds per square inch), although they can be used at 3,000 psi for higher signal strength to collect data from deep in the subsurface.

Based upon information provided by the petitioners, and estimates prepared by the MMS in the Chukchi Sea EIS, we estimate that during the specified timeframe (2007–2012), as many as six high-resolution site surveys may be carried out in any given year, with the majority of site surveys occurring in the latter part of the regulatory time period.

#### *Offshore Drilling Operations*

Considering water depth and the remoteness of this area, drilling operations are most likely to employ drill ships with ice-breaker support vessels. Water depths greater than 30 m (100 ft) and possible pack-ice incursions during the open-water season will preclude the use of bottom-founded platforms as exploration drilling rigs. Using drill ships allows the operator to temporarily move off the drill site if sea or ice conditions require it. Drilling operations are expected to range between 30 and 90 days at different well sites, depending on the depth to the target formation, difficulties during drilling, and logging/testing operations. Drill ships will operate only during the open-water season, where drifting ice can prevent their operation.

A drill ship is secured over the drill site by deploying anchors on as many as ten to twelve mooring lines. The drill pipe is encased in a riser that compensates for the vertical wave motion. The blowout preventer (BOP) is typically located at the seabed in a hole dug below the ice-scour depth. BOP placement is an important safety feature enabling the drill ship to shut down operations and get underway rapidly without exposing the well. One or more ice management vessels (ice breakers) generally support drill ships to ensure ice does not encroach on operations. A barge and tug typically accompany the vessels to provide a standby safety vessel, oil spill response capabilities, and refueling support. Most supplies (including fuel) necessary to complete drilling activities are stored on the drill ship and support vessels. Helicopter servicing of drill ships can occur as frequently as 1–2 times/day. The abandonment phase is initiated if

exploratory wells are not successful. In a typical situation, wells are permanently plugged (with cement) and wellhead equipment removed. The seafloor site is restored to some practicable, pre-exploration condition. Post-abandonment surveys are conducted to confirm that no debris remains following abandonment or those materials remain at the lease tract. The casings for delineation wells are either cut mechanically or with explosives during the process of well abandonment. The MMS estimates that exploration wells will average 2,438 m (8,000 ft), will use approximately 475 tons of dry mud, and produce 600 tons of dry rock cuttings. Considering the cost of synthetic drilling fluids now commonly used, the MMS assumes that most of the drilling mud will be reconditioned and reused. All of the rock cuttings will be discharged at the exploration site.

Considering the relatively short open-water season in the Chukchi Sea (July–November), the MMS estimates that up to four wells could be started by one rig each drilling season. However, it is more likely that only one to two wells could be drilled, tested, and abandoned by one drill ship in any given season, leaving work on the other wells to the next summer season. A total of five exploration wells have been drilled on the Chukchi shelf, and the MMS estimates that 7 to 14 additional wells will be needed to discover and delineate a commercial field.

Based upon information provided by the petitioners, and estimates prepared by the MMS in the Chukchi Sea EIS, we estimate that as many as three drill ships could be operating in the Chukchi Sea Region in any given year during the specified timeframe (2007–2012), with the majority of exploratory drilling occurring in the latter part of the regulatory time period. Each drill ship could drill up to four exploratory or delineation wells per season. Each drill ship is likely to be supported by one to two ice breakers, a barge and tug, one to two helicopter flights per day, and one to two supply ships per week. The operating season is expected to be limited to the open-water season July 1 to November 30.

#### *Onshore Seismic Exploration and Drilling*

CPAI's petition also describes conducting onshore seismic exploration and drilling over the next five years, including geotechnical site investigations, vibroseis, construction of ice pads, roads, and islands, and exploratory drilling. One of these activities is the Intrepid prospect,

approximately 32 km (20 mi) south of Barrow.

Geotechnical site investigations include shallow cores and soil borings to investigate soil conditions and stratigraphy. Geotechnical properties at select points may be integrated with seismic data to develop a regional model for predicting soil conditions in areas of interest.

Vibroseis seismic operations are conducted both onshore and on nearshore ice using large trucks with vibrators that systematically put variable frequency energy into the earth. A minimum of 1.2 m (4 ft) of sea ice is required to support heavy vehicles used to transport equipment offshore for exploration activities. These ice conditions generally exist from January 1 until May 31. The exploration techniques are most commonly used on landfast ice, but they can be used in areas of stable offshore pack-ice. Multiple vehicles are normally associated with a typical vibroseis operation. One or two vehicles with survey crews move ahead of the operation and mark the source receiver points. Occasionally, bulldozers are needed to build snow ramps on the steep terrain or to smooth offshore rough ice within the site.

A typical wintertime exploration seismic crew consists of 40–140 personnel. Roughly 75 percent of the personnel routinely work on the active seismic crew, with approximately 50 percent of those working in vehicles and the remainder outside laying and retrieving geophones and cables.

With the vibroseis technique, activity on the surveyed seismic line begins with the placement of sensors. All sensors are connected to the recording vehicle by multi-pair cable sections. The vibrators move to the beginning of the line, and recording begins. The vibrators move along a source line, which is at some angle to the sensor line. The vibrators begin vibrating in synchrony via a simultaneous radio signal to all vehicles. In a typical survey, each vibrator will vibrate four times at each location. The entire formation of vibrators subsequently moves forward to the next energy input point (67 m (220 ft) in most applications) and repeats the process. In a typical 16-to 18-hour day, a survey will complete 6 to 16 linear km (4–10 mi) in a 2D seismic operation and 24 to 64 linear km (15–40 mi) in a 3D seismic operation. CPAI anticipates conducting between one and five vibroseis seismic programs onshore within the northwest NPR–A over the next 5 years.

CPAI also anticipates developing vertical seismic profiles (VSPs) to calibrate seismic and well data.

Typically, VSP operations are staffed by less than eight people. Four or five of the operators remain in the vehicles (vibrators) within 1.6 to 3.2 km (1 to 2 mi) of the rig, while the others are located at the rig.

On Federal lands, CPAI estimates drilling three to six onshore wells within the next five years. Drilling will likely include both well testing and VSPs. Three onshore wells are proposed for the 2007/2008 season. Drilling operations will require an estimated 32–161 km (20–100 mi) of ice roads, 32–483 km (20–300 mi) of rolligon trails, one to four airfields approximately 1,500 m (5,000 ft) in length on lakes or tundra, rig storage on gravel, possibly at new sites in the Northwest NPR–A, one to five camps, and one to three rigs operating in a given year.

#### **Existing Mitigation Measures for Oil and Gas Exploration Activities**

Measures to mitigate potential effects of oil and gas exploration activities on marine mammal resources and subsistence use of those resources have been identified and developed through previous MMS lease sale National Environmental Policy Act (NEPA) review and analysis processes. The Chukchi Sea Final EIS (CS FEIS) ([http://www.mms.gov/alaska/ref/EIS%20EA/Chukchi\\_feis\\_Sale193/feis\\_193.htm](http://www.mms.gov/alaska/ref/EIS%20EA/Chukchi_feis_Sale193/feis_193.htm)) (OCS EIS/EA MMS 2007–026) identifies several existing measures designed to mitigate potential effects of oil and gas exploration activities on marine mammal resources and subsistence use of those resources (CS FEIS, Sections II.B.3; II–B.5–24). All plans for OCS exploration activities will go through an MMS review and approval to ensure compliance with established laws and regulations. Operational compliance is enforced through the MMS on-site inspection program. The following MMS lease sale stipulations and mitigation measures will be applied to all exploration activities in the Chukchi Lease Sale Planning Area and the geographic region of the incidental take regulations. The Service has incorporated these MMS Lease sale mitigation measures into their analysis of impacts to Pacific walrus and polar bears in the Chukchi Sea.

MMS lease sale stipulations that will help minimize Industry impacts to Pacific walrus and polar bears include:

#### *Oil Spill Prevention and Response*

In compliance with 30 CFR 254, Oil-Spill-Prevention and Response Plans and contingency actions must be prepared by lessees to address the

prevention, detection, and cleanup of fuel and oil spills associated with exploration operations.

#### *Site-Specific Monitoring Program for Marine Mammal Subsistence Resources*

A lessee proposing to conduct exploration operations within traditional subsistence use areas will be required to conduct a site-specific monitoring program designed to assess when walruses and polar bears are present in the vicinity of lease operations and the extent of behavioral effects on these marine mammals due to their operations. This stipulation applies specifically to the communities of Barrow, Wainwright, Point Lay, and Point Hope.

Site-specific monitoring programs will provide information about the seasonal distributions of walruses and polar bears. The information can be used to improve evaluations of the threat of harm to the species and provides immediate information about their activities, and their response to specific events. This stipulation is expected to reduce the potential effects of exploration activities on walruses, polar bears, and the subsistence use of these resources. This stipulation also contributes incremental and important information to ongoing walrus and polar bear research and monitoring efforts.

#### *Conflict Avoidance Mechanisms To Protect Subsistence-Harvesting Activities*

Through consultation with potentially affected communities, the lessee shall make every reasonable effort to assure that their proposed activities are compatible with marine mammal subsistence hunting activities and will not result in unreasonable interference with subsistence harvests. In the event that no agreement is reached between the parties, the lessee, the appropriate management agencies and co-management organizations, and any communities that could be directly affected by the proposed activity may request that the MMS assemble a group consisting of representatives from the parties specifically to address the conflict and attempt to resolve the issues before the MMS makes a final determination on the adequacy of the measures taken to prevent unreasonable conflicts with subsistence harvests.

This lease stipulation will help reduce potential conflicts between subsistence hunters and proposed oil and gas exploration activities. This stipulation will help reduce noise and disturbance conflicts from oil and gas operations during specific periods, such as peak hunting seasons. It requires that

the lessee meet with local communities and subsistence groups to resolve potential conflicts. The consultations required by this stipulation ensure that the lessee, including contractors, consult and coordinate both the timing and sighting of events with subsistence users. This stipulation has proven to be effective in the Beaufort Sea Planning Area in mitigating offshore exploration activities through the development of annual agreements between the Alaska Eskimo Whaling Commission and participating oil companies.

#### *Measures To Mitigate Seismic-Surveying Effects*

The measures summarized below are based on the protective measures in MMS' most recent marine seismic survey exploration permits and the recently completed *Programmatic Environmental Assessment of Arctic Ocean OCS Seismic Surveys—2006* ([http://www.mms.gov/alaska/ref/pea\\_be.htm](http://www.mms.gov/alaska/ref/pea_be.htm)). As stated in the MMS Programmatic Environmental Assessment, these protective measures will be incorporated in all MMS-permitted seismic activities.

1. Spacing of Seismic Surveys—Operators must maintain a minimum spacing of 15 miles between the seismic-source vessels for separate simultaneous operations.

2. Exclusion Zone—A 180/190-decibel (dB) isopleth-exclusion zone (also called a safety zone) from the seismic-survey-sound source shall be free of marine mammals, including walruses and polar bears, before the survey can begin and must remain free of mammals during the survey. The purpose of the exclusion zone is to protect marine mammals from Level A harassment. The 180-dB (Level A harassment injury) applies to cetaceans and walruses, and the 190-dB (Level A harassment-injury) applies to pinnipeds other than walruses and polar bears.

3. Monitoring of the Exclusion Zone—Trained marine mammal observers (MMOs) shall monitor the area around the survey for the presence of marine mammals to maintain a marine mammal-free exclusion zone and monitor for avoidance or take behaviors. Visual observers monitor the exclusion zone to ensure that marine mammals do not enter the exclusion zone for at least 30 minutes prior to ramp up, during the conduct of the survey, or before resuming seismic survey work after a shut down.

Shut Down—The survey shall be suspended until the exclusion/safety zone is free of marine mammals. All observers shall have the authority to, and shall instruct the vessel operators

to, immediately stop or de-energize the airgun array whenever a marine mammal is seen within the zone. If the airgun array is completely shut down for any reason during nighttime or poor sighting conditions, it shall not be re-energized until daylight or whenever sighting conditions allow for the zone to be effectively monitored from the source vessel and/or through other passive acoustic, aerial, or vessel-based monitoring.

Ramp Up—Ramp up is the gradual introduction of sound from airguns to deter marine mammals from potentially damaging sound intensities and from approaching the specified zone. This technique involves the gradual increase (usually 5–6 dB per 5-minute increment) in emitted sound levels, beginning with firing a single airgun and gradually adding airguns over a period of at least 20–40 minutes, until the desired operating level of the full array is obtained. Ramp-up procedures may begin after observers ensure the absence of marine mammals for at least 30 minutes. Ramp-up procedures shall not be initiated at night or when monitoring the zone is not possible. A single airgun operating at a minimum source level can be maintained for routine activities, such as making a turn between line transects, for maintenance needs or during periods of impaired visibility (e.g., darkness, fog, high sea states), and does not require a 30-minute clearance of the zone before the airgun array is again ramped up to full output.

Field Verification—Before conducting the survey, the operator shall verify the radii of the exclusion/safety zones within real-time conditions in the field. This provides for more accurate radii rather than relying on modeling techniques before entering the field. Field-verification techniques must use valid techniques for determining propagation loss. When moving a seismic-survey operation into a new area, the operator shall verify the new radii of the zones by applying a sound-propagation series.

4. Monitoring of the Seismic-Survey Area—Aerial-monitoring surveys or an equivalent monitoring program acceptable to the Service will be required through the LOA authorization process. Field verification of the effectiveness of any monitoring techniques may be required by the Service.

5. Reporting Requirements—Reporting requirements provide regulatory agencies with specific information on the monitoring techniques to be implemented and how any observed impacts to marine mammals will be recorded. In addition,

operators must immediately report to Federal regulators any shut downs due to a marine mammal entering the exclusion zones and provide the regulating agencies with information on the frequency of occurrence and the types and behaviors of marine mammals (if possible to ascertain) entering the exclusion zones.

6. Temporal/Spatial/Operational Restrictions—Seismic-survey and associated support vessels shall observe an 805-m (0.5-mi) safety radius around walrus hauled-out onto land or ice. Aircraft shall be required to maintain a 305-m (1,000-ft) minimum altitude within 805 m (0.5 mi) of hauled-out walrus.

7. Seismic-survey operators shall notify MMS immediately in the event of any loss of cable, streamer, or other equipment that could pose a danger to marine mammals.

These seismic mitigation measures will help reduce the potential for Level A Harassment of walrus and polar bears during seismic operations. The spatial separation of seismic operations will also reduce potential cumulative effects of simultaneous operations. The monitoring and reporting requirements will provide location-specific information about the seasonal distributions of walrus and polar bears. The additional information can be used to evaluate the future threat of harm to the species and also provides immediate information about their activities, and their response to specific events.

## Biological Information

### *Pacific Walrus*

#### 1. Stock Definition and Range

Pacific walrus are represented by a single stock of animals that inhabit the shallow continental shelf waters of the Bering and Chukchi seas. The population ranges across the international boundaries of the United States and Russia, and both nations share common interests with respect to the conservation and management of this species.

The distribution of Pacific walrus varies markedly with the seasons. During the late winter breeding season, walrus are found in areas of the Bering Sea where open leads, polynyas, or areas of broken pack-ice occur. Significant winter concentrations are normally found in the Gulf of Anadyr, the St. Lawrence Island Polynya, and in an area south of Nunivak Island. In the spring and early summer, most of the population follows the retreating pack-ice northward into the Chukchi Sea; however, several thousand animals,

primarily adult males, remain in the Bering Sea, utilizing coastal haul-outs, during the ice-free season. During the summer months, walrus are widely distributed across the shallow continental shelf waters of the Chukchi Sea. Significant summer concentrations are normally found in the unconsolidated pack-ice west of Point Barrow, and along the northern coastline of Chukotka, Russia, near Wrangel Island. As the ice edge advances southward in the fall, walrus reverse their migration and re-group on the Bering Sea pack-ice.

Between 1975 and 1990, aerial surveys were carried out by the United States and Russia at five year intervals, producing population estimates of: 221,350 (1975); 246,360 (1980); 234,020 (1985); and 201,039 (1990). The estimates generated from these surveys are considered conservative abundance estimates and are not useful for detecting trends because walrus are found in large groups that are distributed in a non-uniform fashion. Efforts to survey the Pacific walrus population were suspended after 1990 due to unresolved problems with survey methods to address the patchy distribution of walrus and that resulted in population estimates with unacceptably large confidence intervals. In the spring of 2006, a joint U.S./Russia aerial survey to estimate the walrus population was carried out in the pack ice of the Bering Sea. This information is currently being analyzed and a current population estimate is expected in the near future.

Estimating the abundance or population size of Pacific walrus has been an inherently problematic task. Previous efforts conducted in the autumn (1975, 1980, 1985, and 1990) resulted in widely varying estimates with high variance and low confidence limits. Accounting for animals using traditional haul-outs is factored into the abundance estimates. The 1975, 1980, and 1985 walrus surveys predominately found animals over sea ice habitat. In contrast, the 1990 survey included a large number of walrus located on land haul-outs, predominantly in Russia, during a season of extreme ice recession.

A 1975 evaluation of aerial survey methods conducted in the U.S. sector over the eastern half of the Chukchi Sea (5 days of effort covering 7,743 km and 30.2 flight hours) found walrus were unevenly distributed, patchy, and encountered more frequently in ice habitat where at least 75 percent of the surface was covered by ice. Estimates of abundance, based on single day density estimates, ranged from 818 to 1,760

walrus in the open-water area, and 2,475 to 100,568 walrus in pack ice sampled areas.

In 1980, a coordinated U.S. and Russian aerial survey found walrus located throughout the area surveyed and the U.S. distribution showed extreme clustering of walrus on pack ice in an area of high density between longitude 166° W and 171° W. Initially the estimates were 140,000 animals in the U.S. and 130,000 to 150,000 animals in Russia, with a final total estimate of 246,360 animals.

In 1985, the third joint walrus survey found few walrus in the U.S. sector east of 161° or west of 170°. On days when more walrus were in the water, they were found farther into the pack ice, and on days when nearly all walrus were hauled out on the ice, they were close to the southern edge of the ice. The estimate of abundance for the U.S. portion of the survey was 63,487 animals with an additional 15,238 animals, mainly males, estimated in Bristol Bay, far to the south. The Russians estimated either 54,080 or 115,531 walrus in the pack ice of their sector, depending on the inclusion or exclusion of a large aggregation of walrus encountered on survey transects from the abundance estimate. This illustrates the symptomatic nature of clustered or patchy distributions of walrus noted earlier and the consequence on abundance estimates. In addition, the Russians counted 39,572 animals on their Bering Sea land haul-outs. The combined U.S. and Russia estimate was 234,020 animals.

In 1990, a fourth joint survey was designed to employ a common survey design. Unlike other surveys, the study area was unexpectedly characterized by an extreme amount of open water caused by an unusual recession of pack ice. As a result, the survey covered land haul-outs in the U.S. and Russia as well as open water and pack ice. The total combined population estimate was 201,039. Of this total, the U.S. sector was comprised of 7,522 walrus in Bristol Bay haul-outs and only 16,489 estimated in the Chukchi Sea area. This estimate differs dramatically from previous pack ice estimates in the U.S. Chukchi Sea region, where walrus were relatively abundant in previous surveys. The vast majority of walrus were located in the Russian sector (154,225 walrus) and occupied land haul-outs, including 112,848 animals on Wrangel Island. Land haul-outs in Kamchatka, Southern Chukotka, the Gulf of Anadyr, and the north shore of Chukotka accounted for the remaining 41,377 animals. The Russian pack ice

was remarkably sparse with an estimate of only 16,484 animals.

## 2. Habitat

Walrus are an ice dependent species. They rely on floating pack-ice as a substrate for resting and giving birth. Walrus generally require ice thicknesses of 50 centimeters (cm) or more to support their weight. Although walrus can break through ice up to 20 cm thick, they usually occupy areas with natural openings and are not found in areas of extensive, unbroken ice. Thus, their concentrations in winter tend to be in areas of divergent ice flow or along the margins of persistent polynyas. Concentrations in summer tend to be in areas of unconsolidated pack-ice, usually within 100 km of the leading edge of the ice pack. When suitable pack-ice is not available, walrus haul out to rest on land. Isolated sites, such as barrier islands, points, and headlands, are most frequently occupied. Social factors, learned behavior, and proximity to their prey base are also thought to influence the location of haul-out sites. Traditional walrus haul-out sites in the eastern Chukchi Sea include Cape Thompson, Cape Lisburne, and Icy Cape. In recent years, the Cape Lisburne haul-out site has seen regular use in late summer. Numerous haul-outs also exist along the northern coastline of Chukotka, and on Wrangel and Herald islands, which are considered important haul-out areas in late summer, especially in years when the pack-ice retreats beyond the continental shelf. Notably, during the 1990 population survey, when the Chukchi Sea was largely ice-free, large haul-outs of walrus (over 100,000 animals) formed on Wrangel Island. In contrast, walrus observed during the 1970 through 1985 aerial surveys were seen primarily on sea ice over the continental shelf between Wrangel Island and Alaska.

Although capable of diving to deeper depths, walrus are for the most part found in shallow waters of 100 m or less, possibly because of higher productivity of their benthic foods in shallower water. They feed almost exclusively on benthic invertebrates although Native hunters have also reported incidences of walrus preying on seals. Prey densities are thought to vary across the continental shelf according to sediment type and structure. Preferred feeding areas are typically composed of sediments of soft, fine sands. The juxtaposition of ice over appropriate depths for feeding is especially important for females with dependent calves that are not capable of deep diving or long exposure in the

water. The mobility of the pack-ice is thought to help prevent walrus from overexploiting their prey resource.

Although walrus may range some distance from land or ice haul-outs, for example during migrations or foraging excursions, the species is not adapted to a pelagic existence. Foraging trips can sometimes last up to several days, during which time they dive to the bottom nearly continuously. Most foraging dives to the bottom last between 5 and 10 minutes, with a relatively short (1–2 minute) surface interval.

## 3. Life History

Walrus are long-lived animals with low rates of reproduction. Females reach sexual maturity at 4 to 9 years of age. Males become fertile at 5 to 7 years of age; however, they are usually unable to compete for mates until they reach full physical maturity at 15–16 years of age. Breeding occurs between January and March in the pack-ice of the Bering Sea. Calves are usually born in late April or May the following year during the northward migration from the Bering Sea to the Chukchi Sea. Calving areas in the Chukchi Sea extend from the Bering Strait to latitude 70 °N. Calves are capable of entering the water shortly after birth, but tend to haul-out frequently, until their swimming ability and blubber layer are well developed. Newborn calves are tended closely. They accompany their mother from birth and are usually not weaned for 2 years or more. Cows brood neonates to aid in their thermoregulation, and carry them on their back or under their flipper while in the water. Females with newborns often join together to form large “nursery herds”. Summer distribution of females and young walrus is closely tied to the movements of the pack-ice relative to feeding areas. Females give birth to one calf every 2 or more years. This reproductive rate is much lower than other pinniped species; however, some walrus live to age 35–40, and remain reproductively active until relatively late in life.

Walrus are extremely social and gregarious animals. They tend to travel in groups and haul-out onto ice or land in groups. Walrus spend approximately one-third of their time hauled out onto land or ice. Hauled-out walrus tend to lie in close physical contact with each other. Youngsters often lie on top of the adults. The size of the hauled-out groups can range from a few animals up to several thousand individuals.

## 4. Mortality

Polar bears are known to prey on walrus calves, and killer whales (*Orcinus orca*) have been known to take all age classes of animals. Predation levels are thought to be highest near terrestrial haul-out sites where large aggregations of walrus can be found; however, few observations of killer whales preying on walrus exist.

Pacific walrus have been hunted by coastal Natives in Alaska and Chukotka for thousands of years. Exploitation of the Pacific walrus population by Europeans has also occurred in varying degrees since first contact. Presently, walrus hunting in Alaska and Chukotka is restricted to meet the subsistence needs of aboriginal peoples. Over the past decade, the combined harvest of the United States and Russia has averaged approximately 5,500 walrus per year. This mortality estimate includes corrections for under-reported harvest and struck and lost animals.

Intraspecific trauma is also a known source of injury and mortality. Disturbance events can cause walrus to stampede into the water and have been known to result in injuries and mortalities. The risk of stampede-related injuries increases with the number of animals hauled out. Calves and young animals at the perimeter of these herds are particularly vulnerable to trampling injuries.

## 5. Distributions and Abundance of Pacific Walrus in the Chukchi Sea

Walrus are seasonably abundant in the Chukchi Sea. Their distribution in the region is influenced primarily by the distribution and extent of seasonal pack-ice. In May and June walrus migrate into the region along lead systems that form along the coastlines of Alaska and Chukotka. During the summer months walrus are widely distributed along the southern margin of the seasonal pack-ice both in U.S. and Russian waters. During August, the edge of the pack-ice generally retreats northward to about 71 °N, but in light ice years, the ice edge can retreat beyond 76 °N. The sea ice normally reaches its minimum (northern) extent in September. In recent years, several tens of thousands of walrus have been reported congregating at coastal haul-outs along the Russian coast in late summer. Russian biologists attribute the formation of these coastal aggregations to diminishing sea ice habitats in offshore regions. In 2007, a new sea ice minima record was established. Sea ice had completely retreated from the continental shelf waters of the Chukchi Sea by mid-August, 2007 and anecdotal

reports from Russia indicate that as many as 100,000 walrus, comprised of mixed herds of females and calves, congregated at coastal haul-outs along the northern Chukotka coastline. An estimated 2,000 to 5,000 walrus were also observed along the Alaskan Chukchi Sea coast in 2007 using nontraditional haul-outs. This is a relatively small portion of the annual, hauled-out animals in the population. Historically, approximately 5,000 animals have annually used the Bristol Bay haul-outs, such as Round Island and Cape Seniavin. The pack-ice usually advances rapidly southward in October, and most walrus move into the Bering Sea by mid-to-late November.

Walrus are closely associated with sea ice. The dynamic nature of sea ice habitats is expected to result in considerable seasonal and annual variation in the number of animals likely to be present in the proposed exploration arena. While a recent abundance estimate for the number of walrus likely to be present in the offshore waters of the eastern Chukchi Sea during the proposed exploration season is not available, an aerial survey was carried out in the fall of 1990 during a season of minimum ice conditions where sea ice retracted north beyond the continental shelf, similar to recent conditions throughout the Chukchi Sea. This survey observed 16,489 walrus distributed along the Chukchi Sea pack-ice between Wrangel Island and Point Barrow, where a much larger portion of the population was distributed in Russia on land and sea ice haul-outs. The sea ice was distributed well beyond the continental shelf at the time of the survey and most walrus were using coastal haul-outs in Russia, which is similar to the pattern of distribution observed in 2007.

#### *Polar Bears*

##### 1. Alaska Stock Definition and Range

Polar bears occur throughout the Arctic. The world population estimate of polar bears ranges from 20,000–25,000 individuals. In Alaska, they have been observed as far south in the eastern Bering Sea as St. Matthew Island and the Pribilof Islands. However, they are most commonly found within 180 miles of the Alaskan coast of the Chukchi and Beaufort seas, from the Bering Strait to the U.S./Canada border. Two stocks occur in Alaska: (1) The Chukchi-Bering seas stock (CS); and (2) the Southern Beaufort Sea stock (SBS). A summary of the Chukchi and Southern Beaufort Sea polar bear stocks is described below. A detailed description of the Chukchi Sea and Southern Beaufort Sea polar bear

stocks can be found in the “Range-Wide Status Review of the Polar Bear (*Ursus maritimus*)” (<http://alaska.fws.gov/fisheries/mmm/polarbear/issues.htm>).

##### A. Chukchi/Bering Seas Stock (CS)

The CS is defined as those polar bears inhabiting the area as far west as the eastern portion of the Eastern Siberian Sea, as far east as Point Barrow, and extending into the Bering Sea, with its southern boundary determined by the extent of annual ice. Based upon telemetry studies, the western boundary of the population has been set near Chaunskaya Bay in northeastern Russia. The eastern boundary is at Icy Cape, Alaska, which was, until recently, also considered to be the western boundary of the SBS. This eastern boundary constitutes a large overlap zone with bears in the SBS population. The CS population appeared to increase after the level of harvest was reduced in 1972. However, harvest records suggest that the population now may be declining. Illegal polar bear hunting in Russia is thought to be one reason for this decline. The most recent population estimate for the CS population is 2,000 animals. This was based on extrapolation of aerial den surveys from the early 1990s; however, this estimate is currently considered to be of little value for management. Reliable estimates of population size based upon mark and recapture are not available for this region and measuring the population size remains a research challenge due to the movements of the polar bear and the dynamic Arctic habitat.

Legal harvesting activities for the CS stock are currently restricted to Native Alaskans in western Alaska, as long as this does not affect the sustainability of the polar bear population. In Alaska, average annual harvest levels declined by approximately 50 percent between the 1980s and the 1990s and have remained at low levels in recent years. We believe there are several factors affecting the harvest level of CS bears in western Alaska. Substantial illegal harvest in Chukotka is the most relevant factor affecting the CS population level. In recent years a reportedly sizable illegal harvest has occurred in Russia, despite a ban on hunting that has been in place since 1956. In addition, other factors such as climatic change and its effects on pack-ice distribution, as well as changing demographics and hunting effort in Native communities could influence the population and the declining take. The unknown rate of illegal take makes a stable designation for the CS population uncertain and tentative.

Until recently, the United States and Russia have managed the shared CS polar bear population independently. Now, Alaska and Russian bear researchers and managers are working to update and enhance the collective knowledge of polar bears in the CS stock to improve management goals and objectives. On September 21, 2007, the United States ratified the U.S./Russia Bilateral Polar Bear Conservation Agreement (Bilateral Agreement) for the shared polar bear population, which had been signed by both countries on October 16, 2000; implementing legislation for the agreement occurred in January 2007. The purpose of the Bilateral Agreement is to assure long-term, science-based conservation of the polar bear population and includes binding harvest limits. Implementation of the Bilateral Agreement will unify management regimes and provide for harvest limits. The treaty calls for the active involvement of Native people and their organizations in future management programs. It will also enhance such long-term joint efforts as conservation of ecosystems and important habitats, harvest allocations based on sustainability, collection of biological information, and increased consultation and cooperation with state, local, and private interests.

In association with the ratification of the agreement, the Service sponsored a meeting from August 7 through 9, 2007, of technical specialists from the United States and Russia to discuss future management, research, and conservation needs for the CS polar bear population. The goals of the meeting were to exchange information about current and future research activities and priorities, provide technical input concerning research and management needs for the implementation of the Bilateral Agreement with specific regard to field research and conservation practices, and to initiate planning for managing the subsistence harvest in Alaska and Russia under the newly activated treaty. The primary challenge discussed by the group is the lack of population information (status and trends) to support determination of a sustainable harvest as called for by the Bilateral Agreement. Information from this meeting will be shared at the first meeting of the Joint Commissioners.

##### B. Southern Beaufort Sea (SBS)

The SBS polar bear population is shared between Canada and Alaska. Radio-telemetry data, combined with earlier tag returns from harvested bears, suggested that the SBS region comprised a single population with a western boundary near Icy Cape, Alaska, and an

eastern boundary near Pearce Point, Northwest Territories, Canada. Early estimates from the mid 1980s suggested the size of the SBS population was approximately 1,800 polar bears, although uneven sampling was known to compromise the accuracy of that estimate. A population analysis of the SBS stock was completed in June 2006 through joint research coordinated between the United States and Canada. That analysis indicated the population within the region between Icy Cape and Pearce Point is now approximately 1,500 polar bears (95 percent confidence intervals approximately 1,000–2,000). Although the confidence intervals of the current population estimate overlap the previous population estimate of 1,800; other statistical and ecological evidence (e.g., high recapture rates encountered in the field) suggest that the current population is actually smaller than has been estimated for this area in the past.

Recent analyses of radio-telemetry data of spatio-temporal use patterns of bears of the SBS stock using new spatial modelling techniques suggest realignment of the boundaries of the Southern Beaufort Sea area. We now know that nearly all bears in the central coastal region of the Beaufort Sea are from the SBS population, and that proportional representation of SBS bears decreases to both the west and east. For example, only 50 percent of the bears occurring in Barrow, Alaska, and Tuktoyaktuk, Northwest Territories, are SBS bears, with the remainder being from the CS and Northern Beaufort Sea populations, respectively. The recent radio-telemetry data indicate that bears from the SBS population seldom reach Pearce Point, which is currently on the eastern management boundary for the SBS population.

Only a small proportion of the SBS polar bear population will be found in the Chukchi Sea region during the ice-covered season. This is based on estimates of probabilities of polar bear distribution from each population. The relative probabilities of sighting a bear were developed using satellite radio-telemetry data. This technique has also increased our understanding of the proportions of the populations that could occur in the region where both populations overlap. These probabilities indicate that SBS polar bears will be found at lower proportions in the western portions of their range (Chukchi Sea) than in the central portions of their range (central Beaufort Sea).

Management and conservation concerns for the CS and SBS polar bear populations include: climate change, which continues to increase both the expanse and duration of open water in

summer and fall; human activities within the near-shore environment, including hydrocarbon development and production; atmospheric and oceanic transport of contaminants into the Arctic; and the potential for inadvertent over-harvest, should polar bear stocks become nutritionally stressed or decline due to some combination of the above concerns.

Today, habitat loss, illegal hunting, and, in particular, the diminishing extent, thickness, and seasonal persistence of sea ice pose the most serious threats to polar bears worldwide. As a result of such concerns, the polar bear was listed as threatened under the U.S. Endangered Species Act of 1973, as amended (ESA), on May 15, 2008 (73 FR 28212). More information can be found at: <http://www.fws.gov/>.

## 2. Habitat

Polar bears of the Chukchi Sea are subject to the movements and coverage of the pack-ice and annual ice as they are dependent on the ice as a platform for hunting and surviving. Polar bears are widely distributed within their range and are generally solitary animals, although they will form aggregations around food sources. Historically, polar bears of the Chukchi Sea have spent most of their time on the annual ice in near-shore, shallow waters over the productive continental shelf, which is associated with the shear zone and the active ice adjacent to the shear zone. Sea ice and food availability are two important factors affecting the distribution of polar bears. During the ice-covered season, bears use the extent of the annual ice. The most extensive north-south movements of polar bears are associated with the spring and fall ice movement. For example, during the 2006 ice-covered season, six bears radio-collared in the Beaufort Sea were located in the Chukchi and Bering Seas as far south as 59° latitude, which was the farthest extent of the annual ice during 2006. A small number of bears sometimes remain on the Russian and Alaskan coasts during the initial stages of ice retreat in the spring.

Polar bear distribution during the open-water season in the Chukchi Sea, where maximum open water occurs in September, is dependent upon the location of the ice edge as well. The summer ice pack can be quite disjointed and segments can be driven great distances by wind carrying polar bears with them. Recent telemetry movement data are lacking for bears in the Chukchi Sea; however, an increased trend by polar bears to use coastal habitats in the fall during open-water and freeze-up

conditions has been noted by researchers since 1992. Recently, during the minimum sea ice extents, which occurred in 2005 and 2007, polar bears exhibited this coastal movement pattern as observations from Russian biologists and satellite telemetry data of bears in the Beaufort Sea indicated that bears were found on the sea ice or along the Chukotka coast during the open-water period.

## 3. Denning and Reproduction

Although insufficient data exist to accurately quantify polar bear denning along the Alaskan Chukchi Sea coast, dens in the area appear to be less concentrated than for other areas in the Arctic. The majority of denning of CS polar bears occurs in Russia on Wrangel Island, Herald Island, and certain locations on the northern Chukotka coast. In addition, due to changes in the formation of sea ice along the Chukotka coast, there are some indications that the Bear Islands (Medvezhiy Ostrova), near the Kolyma River estuary, have become a denning area for the CS stock as well.

Females without dependent cubs breed in the spring. Females can initiate breeding at five to six years of age. Females with cubs do not mate. Pregnant females enter maternity dens by late November, and the young are usually born in late December or early January. Only pregnant females den for an extended period during the winter; other polar bears may excavate temporary dens to escape harsh winter winds. An average of two cubs are born. Reproductive potential (intrinsic rate of increase) is low. The average reproductive interval for a polar bear is three to four years, and a female polar bear can produce about 8 to 10 cubs in her lifetime; in healthy populations, 50 to 60 percent of the cubs will survive. Female bears can be quite sensitive to disturbances during this denning period.

In late March or early April, the female and cubs emerge from the den. If the mother moves young cubs from the den before they can walk or withstand the cold, mortality to the cubs may increase. Therefore, it is thought that successful denning, birthing, and rearing activities require a relatively undisturbed environment. Radio and satellite telemetry studies elsewhere indicate that denning can occur in multi-year pack-ice and on land. Recent studies of the SBS indicate that the proportion of dens on pack-ice have declined from approximately 60 percent in 1985–1994 to 40 percent in 1998–2004.

#### 4. Prey

Ringed seals (*Phoca hispida*) are the primary prey of polar bears in most areas. Bearded seals (*Erignathus barbatus*) and walrus calves are hunted occasionally. Polar bears can opportunistically scavenge marine mammal carcasses. Polar bears will occasionally feed on bowhead whale (*Balaena mysticetus*) carcasses at Point Barrow, Cross, and Barter Islands, areas where bowhead whales are harvested for subsistence purposes. There are also reports of polar bears killing beluga whales (*Delphinapterus leucas*) trapped in the ice. Polar bears are also known to ingest anthropogenic, nonfood items including Styrofoam, plastic, antifreeze, and hydraulic and lubricating fluids.

Polar bears use the sea ice as a platform to hunt seals. Polar bears hunt seals using various means. They can hunt along leads and other areas of open water, by waiting at a breathing hole, or by breaking through the roof of a seal lair. Lairs are excavated in snow drifts on top of the ice. Bears also stalk seals in the spring when they haul out on the ice in warm weather. The relationship between ice type and polar bear distribution is as yet unknown, but it is suspected to be related to seal availability. Due to changing sea ice conditions the area of open water and proportion of marginal ice has increased and extends later in the fall. This may limit seal availability to polar bears as the most productive areas for seals appear to be over the shallower waters of the continental shelf.

#### 5. Mortality

Polar bears are long-lived (up to 30 years) and have no natural predators, and they do not appear to be prone to death by diseases or parasites. Cannibalism by adult males on cubs and occasionally on other bears is known to occur. The most significant source of mortality is man. Before the MMPA was passed in 1972, polar bears were taken by sport hunters and residents. Between 1925 and 1972, the mean reported kill was 186 bears per year. Seventy-five percent of these were males, as cubs and females with cubs were protected. Since 1972, only Alaska Natives from coastal Alaskan villages have been allowed to hunt polar bears in the United States for their subsistence uses or for handicraft and clothing items for sale. The Native hunt occurs without restrictions on sex, age, or number provided that the population is not determined to be depleted. From 1980 to 2005, the total annual harvest for Alaska averaged 101 bears: 64 percent from the Chukchi Sea and 36 percent from the Beaufort Sea.

Other sources of mortality related to human activities include bears killed during research activities, euthanasia of injured bears, and defense of life kills by non-Natives.

#### 6. Distributions and Abundance of Polar Bears in the Chukchi Sea

Polar bears are seasonably abundant in the Chukchi Sea and Lease Sale Area 193 and their distribution is influenced by the movement of the seasonal pack-ice. Polar bears in the Chukchi and Bering Seas move south with the advancing ice during fall and winter and move north in advance of the receding ice in late spring and early summer. The distance between the northern and southern extremes of the seasonal pack-ice is approximately 800 miles. In May and June, polar bears are likely to be encountered in the Lease Sale Area 193 as they move northward from the northern Bering Sea through the Bering Strait into the southern Chukchi Sea. During the fall/early winter period, polar bears are likely to be encountered in the Lease Sale Area 193 during their southward migration in late October and November. Furthermore, bears from the SBS and CS populations can be encountered in the Chukchi Sea as they travel with the pack-ice or ice floes in search of food. Polar bears are dependent upon the sea ice for foraging and the most productive areas to be near the ice edge, leads, or polynyas over the continental shelf where the ocean depth is minimal. In addition, polar bears could be present along the shoreline in this area, as they will opportunistically scavenge on marine mammal carcasses washed up along the shoreline and they may become stranded on land due to the receding pack-ice.

#### Subsistence Use and Harvest Patterns of Pacific Walruses and Polar Bears

Walruses and polar bears have been traditionally harvested by Alaska Natives for subsistence purposes. The harvest of these species plays an important role in the culture and economy of many coastal communities in Alaska and Chukotka. Walrus meat is consumed by humans and dogs, and the ivory is used to manufacture traditional arts and crafts. Polar bears are primarily hunted for their fur, which is used to manufacture cold weather gear; however, their meat is also occasionally consumed. The communities most likely to be impacted by the proposed activities are Point Hope, Point Lay, Wainwright, and Barrow.

An exemption under section 101(b) of the MMPA allows Alaska Natives who reside in Alaska and dwell on the coast

of the North Pacific Ocean or the Arctic Ocean to take walruses and polar bears if such taking is for subsistence purposes, including creating and selling authentic native articles of handicrafts and clothing, as long as the take is not done in a wasteful manner. Under the terms of the MMPA, there are no restrictions on the number, season, or ages of walruses or polar bears that can be harvested in Alaska. A more restrictive Inuvialuit-Inupiat Polar Bear Native-to-Native Agreement (Native Agreement) between the Inupiat in Northern Alaska and the Inuvialuit in the Northwest Territories Canada was created for the SBS bears in 1988. Polar bears harvested from the communities of Barrow and Wainwright are currently considered part of the SBS stock and thus are subject to the terms of the Native Agreement. The Native Agreement establishes quotas and recommendations concerning protection of denning females, family groups, and methods of take. Quotas are based on estimates of population size and age-specific estimates of survival and recruitment. The polar bears harvested by the communities of Point Hope and Point Lay are thought to come primarily from the Chukchi/Bering sea stock. Neither Point Hope nor Point Lay hunters are parties to the Native Agreement.

The Service collects information on the subsistence harvest of walruses and polar bears in Alaska through the Marking, Tagging and Reporting Program (MTRP). The program is administered through a network of MTRP "taggers" employed in subsistence hunting communities. The marking and tagging Rule requires that hunters report harvested walruses and polar bears to MTRP taggers within 30 days of kill. Taggers also certify (tag) specified parts (ivory tusks for walruses, hide and skull for polar bears) to help control illegal take and trade. MTRP reports are thought to generally underestimate the total U.S. subsistence walrus harvest, with one recent estimate as low as 30 percent of actual harvest in Barrow. According to Service records, polar bear harvests reported by the MTRP are believed to be as high as 80 percent of the actual subsistence harvest in the communities most affected by this regulation.

Harvest levels of polar bears and walruses in these communities vary considerably between years, presumably in response to differences in animal distribution and ice conditions. Descriptive information on subsistence harvests of walruses and polar bears in each community is presented below.

### Point Hope

Between 1990 and 2006, the average annual walrus harvest recorded through the MTRP at Point Hope was  $3.6 \pm 5.1$  (SD) animals per year. Point Hope hunters typically begin their walrus hunt in late May and June as walruses migrate into the Chukchi Sea. The sea ice is usually well off shore of Point Hope by July and does not bring animals back into the range of hunters until late August and September. Most (70.8 percent) of the reported walrus harvest at Point Hope occurred in the months of June and September. Most of the walruses recorded through the MTRP at Point Hope were taken within five miles of the coast, or near coastal haulout sites at Cape Lisburne.

Between 1990 and 2006, the average reported polar bear harvest at Point Hope was  $13.1 \pm 4.8$  animals per year. Polar bear harvests typically occur from January to April. Most of the polar bears reported through the MTRP program were harvested within 10 miles of the community; however, residents also reported taking polar bears as far away as Cape Thompson and Cape Lisburne.

### Point Lay

Point Lay hunters reported an average of  $2.2 \pm 2.0$  walruses per year between 1990 and 2006. Based on MTRP data, walrus hunting in Point Lay peaks in June–July with 84.4 percent of all walruses being harvested during these months. Historically, harvests have occurred primarily within 40 miles north and south along the coast from Point Lay and approximately 30 miles offshore.

Between 1990 and 2006, the average reported polar bear harvest at Point Lay was  $2.3 \pm 1.4$  animals per year. The only information on harvest locations comes from the MTRP database; all reported harvest occurred within 25 miles of Point Lay.

### Wainwright

Wainwright hunters have consistently harvested more walruses than any other subsistence community on the North Slope. Between 1990 and 2006, the average reported walrus harvest in Wainwright was  $44.2 \pm 29.2$  animals per year. A discrepancy between MTRP data and past household surveys is noted. Walruses are thought to represent approximately 40 percent of the communities' annual subsistence diet of marine mammals. Wainwright residents hunt walruses from June through August as the ice retreats northward. Walruses can be plentiful in the pack-ice near the village this time of year. Most (85.2 percent) of the harvest occurs

in June and July. Most walrus hunting is thought to occur within 20 miles of the community, in all seaward directions.

Between 1990 and 2006, the average reported polar bear harvest at Wainwright was  $6.8 \pm 3.7$  animals per year. Polar bears are harvested throughout much of the year, with peak harvests reported in May and December. Polar bear are often harvested coincidentally with beluga and bowhead whale harvests. MTRP data indicate that most hunting occurs within 10 miles of the community.

### Barrow

Barrow is the northernmost community within the geographical region being considered. Most (88.6 percent) walrus hunting occurs in June and July when the land-fast ice breaks up and hunters can access the walruses by boat as they migrate north on the retreating pack-ice. Walrus hunters from Barrow sometimes range up to 60 miles from shore; however, most harvests reported through the MTRP have occurred within 30 miles of the community. Between 1990 and 2006, the average reported walrus harvest in Barrow was  $24.1 \pm 14.6$  animals per year.

Between 1990 and 2006, the average reported polar bear harvest at Barrow was  $21.3 \pm 8.9$  animals per year. The number of polar bears harvested in Barrow is thought to be influenced by ice conditions and the number of people out on the ice. Most (74 percent) of all polar bear harvests reported by Barrow residents occurred in February and March. Although relatively few people are thought to hunt specifically for polar bears, those that do hunt primarily between October and March. Hunting areas for polar bears overlap strongly with areas of bowhead subsistence hunting; particularly the area from Point Barrow south to Walakpa Lagoon where walrus and whale carcasses are known to attract polar bears.

## Potential and Observed Impacts of Oil and Gas Industry Activities on Pacific Walruses and Polar Bears

### Pacific Walruses

#### A. Potential Impacts of Oil and Gas Industry Activities on Pacific Walruses

##### 1. Disturbance

Proposed oil and gas exploration activities in the Chukchi Sea Region include the operation of seismic survey vessels, drill ships, icebreakers, supply boats, fixed-winged aircrafts, and helicopters. Operating this equipment near walruses without appropriate

mitigation measures could result in disturbances. Potential effects of disturbances on walruses include insufficient rest, increased stress and energy expenditure, interference with feeding, masking of communication, and impaired thermoregulation of calves that spend an increased amount of time in the water. Prolonged or repeated disturbances could potentially displace individuals or herds from preferred feeding or resting areas. Disturbance events can cause walrus groups to abandon land or ice haul-outs. Severe disturbance events occasionally result in trampling injuries or cow-calf separations, both of which are potentially fatal. Calves and young animals at the perimeter of the herds appear particularly vulnerable to trampling injuries.

The response of walruses to disturbance stimuli is highly variable. 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. Hearing sensitivity is assumed to be within the 13 Hz and 1,200 Hz range of their own vocalizations. Walrus hunters and researchers have noted that walruses tend to react to the presence of humans and machines at greater distances from upwind approaches than from downwind approaches, suggesting that odor is also a stimulus for a flight response. The visual acuity of walruses is thought to be less than for other species of pinnipeds.

Walruses are poorly adapted to life in the open ocean. They must periodically haul out onto ice or land to rest between feeding bouts. Previous aerial survey efforts in the offshore region of the eastern Chukchi Sea found that most (80–96 percent) walruses were closely associated with sea ice and that the number of walruses observed in open water decreased significantly with distance from the pack ice. Under minimal or no-ice conditions, we expect most walruses will either migrate out of the region in pursuit of more favorable ice habitats, or relocate to coastal haulouts where their foraging trips will be restricted to near-shore habitats. Therefore, in evaluating the potential impacts of exploration activities on Pacific walruses, the presence or absence of pack ice could serve as one indicator of whether or not walruses are likely to be found in the area. Activities occurring in or near sea ice habitats are presumed to have the greatest potential for interacting with walruses. Activities

occurring under open water conditions are expected to interact with relatively small numbers of animals.

Seismic operations are expected to add significant levels of noise into the marine environment. Although the hearing sensitivity of walrus is poorly known, source levels associated with Marine 3D and 2D seismic surveys are thought to be high enough to cause temporary hearing loss in other pinniped species. Therefore, walrus within the 180-decibel (dB re 1  $\mu$ Pa) safety radius described by Industry for seismic activities could potentially suffer shifts in hearing thresholds and temporary hearing loss. Seismic survey vessels will be required to ramp up airguns slowly to allow marine mammals the opportunity to move away from potentially injurious sound sources. Marine mammal monitors will also be required to monitor seismic safety zones and call for the power down or shut down of airgun array if any marine mammals are detected within the prescribed safety zone.

Geotechnical seismic surveys and high-resolution site clearance seismic surveys are expected to occur primarily in open water conditions, at a sufficient distance from the pack-ice and large concentrations of walrus to avoid most disturbances. Although most walrus are expected to be closely associated with sea ice or coastal haulouts during offshore exploration activities, small numbers of animals may be encountered in open water conditions. Walrus swimming in open water will likely be able to detect seismic airgun pulses up to several kilometers from a seismic source vessel. The most likely response of walrus to noise generated by seismic surveys will be to move away from the source of the disturbance. Because of the transitory nature of the proposed seismic surveys, impacts to walrus exposed to seismic survey operations are expected to be temporary in nature and have little or no effects on survival or recruitment.

Although concentrations of walrus in open water environments are expected to be low, groups of foraging or migrating animals transiting through the area may be encountered. Adaptive mitigation measures based upon real time monitoring information will be implemented to mitigate potential impacts to walrus groups feeding in offshore locations and ensure that these impacts are limited to small numbers of animals. The National Marine Fisheries Service (NMFS) identified that Level B harassment of marine mammals begins at 160-dB re 1  $\mu$ Pa. The Service concurs with this determination and believes its use is applicable to walrus aggregations.

For that reason, whenever an aggregation of 12 or more walrus are detected within an acoustically verified 160-dB re 1  $\mu$ Pa disturbance zone ahead of or perpendicular to the seismic vessel track, the Service will require the operator to immediately power down the seismic airgun array and/or other acoustic sources to ensure sound pressure levels at the shortest distance to the aggregation do not exceed 160-dB re 1  $\mu$ Pa. The operator will not be allowed to proceed with powering up the seismic airgun array until it can be established that there are no walrus aggregations within the 160-dB zone based upon ship course, direction, and distance from last sighting.

Offshore exploration activities are expected to occur primarily in areas of open water some distance from the pack-ice; however, support vessels and/or aircraft may occasionally encounter aggregations of walrus hauled out onto sea ice. The sight, sound, or smell of humans and machines could potentially displace these animals from ice haul-outs. Ice management operations are expected to have the greatest potential for disturbances since these operations typically require vessels to accelerate, reverse direction, and turn rapidly, activities that maximize propeller cavitations and resulting noise levels. Previous studies suggest that icebreaking activities can displace some walrus groups up to several miles away; however, most groups of hauled out walrus showed little reaction beyond 805 m (0.5 mi). Impacts associated with transiting support vessels and aircrafts are likely to be distributed in time and space. Therefore, noise and disturbance from aircraft and vessel traffic associated with exploration projects are expected to have relatively localized, short-term effects. Nevertheless, the potential for disturbance events resulting in injuries, mortalities, or mother-calf separations is of concern. The potential for injuries is expected to increase with the size of affected walrus aggregations. Adaptive mitigation measures designed to separate Industry activities from walrus aggregations at coastal haulouts and in sea-ice habitats are expected to reduce the potential for animal injuries, mortalities, and mother-calf separations. Restricting offshore exploration activities to the open-water season (July 1 to November 30) is also expected to reduce the number of potential interactions between walrus and Industry operations occurring in or near sea ice habitats. Adaptive operational restrictions, including an 800-m (0.5-mi) operational exclusion zone for marine

vessels, and a 305-m (1,000-ft) altitude restriction for aircraft flying near walrus groups hauled-out onto land or sea ice, are similarly expected to minimize disturbances to walrus hauled out onto ice or land.

Drilling operations are expected to occur at several offshore locations during the later stages of the regulations. Although drilling activities are expected to occur primarily during open water conditions, the dynamic movements of sea ice could transport walrus within range of drilling operations. The MMS permit stipulation identifying a 0.5-mile operational exclusion zone around groups of hauled-out walrus is expected to help mitigate disturbances to walrus near prospective drill sites. Mitigation measures specified in an LOA including requirements for ice-scouting, surveys for walrus and polar bears in the vicinity of active drilling operations and ice breaking activities, requirements for marine mammal observers onboard drill ships and ice breakers, and operational restrictions near walrus and polar bear aggregations are expected to further reduce the potential for interactions between walrus and drilling operations.

## 2. Waste Discharge and Oil Spills

The potential exists for fuel and oil spills to occur from seismic and support vessels, fuel barges, and drilling operations. Little is known about the effects of fuel and oil on walrus; however, walrus may react to fuel and oil much like other pinniped species. Damage to the skin of pinnipeds can occur from contact with oil because some of the oil penetrates into the skin, causing inflammation and ulcers. Exposure to oil can quickly cause permanent eye damage. In studies conducted on other pinniped species, pulmonary hemorrhage, inflammation, congestion, and nerve damage resulted after exposure to concentrated hydrocarbon fumes for a period of 24 hours. Walrus are extremely gregarious animals and normally associate in large groups; therefore, any contact with spilled oil or fuel could impact several individuals.

Exposure to oil could also impact benthic prey species. Bivalve mollusks, a favorite prey species of the walrus, are not effective at processing hydrocarbon compounds, resulting in highly concentrated accumulations and long-term retention of contamination within the organism. Exposure to oil may kill prey organisms or result in slower growth and productivity. Because walrus feed primarily on mollusks, they may be more vulnerable to a loss of this

prey species than other pinnipeds that feed on a larger variety of prey.

Although fuel and oil spills have the potential to cause adverse impacts to walrus and prey species, operational spills associated with the proposed exploration activities are not considered a major threat. Operational spills would likely be of a relatively small volume, and occur in areas of open water where walrus densities are expected to be relatively low. Furthermore, blowout prevention technology will be required for all exploratory drilling operations in the Chukchi Sea by the permitting agencies, and the MMS considers the likelihood of a blowout occurring during exploratory drilling in the Chukchi Sea as negligible (OCS EIS/EA MMS 2007-026). The MMS operating stipulations, including oil spill prevention and response plans, reduce both the risk and scale of potential spills. For these reasons, any impacts associated with an operational spill are expected to be limited to a small number of animals.

Despite the minimal risk, all projects will have oil spill contingency plans (specific to the project) that will be approved by the appropriate permitting agencies prior to the issuance of an LOA. The contingency plans have a wildlife component, which outlines protocols to minimize wildlife exposure, including polar bears and walrus, to oil spills.

### 3. Cumulative Effects

The following events have contributed to current environmental conditions in the Chukchi Sea and could also cumulatively affect Pacific walrus population status in the next five years:

*Commercial and Subsistence Harvest*—Walrus have an intrinsically low rate of reproduction and are thus limited in their capacity to respond to exploitation. In the late 19th century, American whalers intensively harvested walrus in the northern Bering and southern Chukchi seas. Between 1869 and 1879, catches averaged more than 10,000 per year, with many more animals struck and lost. The population was substantially depleted by the end of the century, and the commercial hunting industry collapsed in the early 1900s. Since 1930, the combined walrus harvests of the United States and Russia have ranged from 2,300–9,500 animals per year. Notable harvest peaks occurred during 1930–1960 (4,500–9,500 per year) and in the 1980's (5,000–9,000 per year). Commercial hunting continued in Russia until 1991 under a quota system of up to 3,000 animals per year. Since 1992, the harvest of Pacific walrus has

been limited to the subsistence catch of coastal communities in Alaska and Chukotka. Harvest levels through the 1990s ranged from approximately 2,400–4,700 animals per year. Although recent harvest levels are lower than historic highs, lack of information on current population size or trend precludes an assessment of sustainable harvest rates.

*Climate Change*—Analysis of long-term environmental data sets indicates that substantial reductions in both the extent and thickness of the arctic sea-ice cover have occurred over the past 40 years. Record minimum sea ice extent was recorded in 2002, 2005, and again in 2007; sea ice cover in 2003 and 2004 was also substantially below the 20-year mean. Walrus rely on suitable sea ice as a substrate for resting between foraging bouts, calving, molting, isolation from predators, and protection from storm events. The juxtaposition of sea ice over shallow-shelf habitat suitable for benthic feeding is important to walrus. Recent trends in the Chukchi Sea have resulted in seasonal sea-ice retreat off the continental shelf and over deep Arctic Ocean waters, presenting significant adaptive challenges to walrus in the region. Reasonably foreseeable impacts to walrus as a result of diminishing sea ice cover include: shifts in range and abundance; increased vulnerability to predation and disturbance; declines in prey species; increased mortality rates resulting from storm events; and premature separation of females and dependent calves. Secondary effects on animal health and condition resulting from reductions in suitable foraging habitat may also influence survivorship and productivity. Future studies investigating walrus distributions, population status and trends, and habitat use patterns in the Chukchi Sea are important for responding to walrus conservation and management issues associated with environmental and habitat changes.

*Commercial Fishing and Marine Vessel Traffic*—Available data suggest that walrus rarely interact with commercial fishing and marine vessel traffic. Walrus are normally closely associated with sea ice, which limits their interactions with fishing vessels and barge traffic. However, as previously noted, the temporal and seasonal extent of the sea ice is projected to diminish in the future. Commercial shipping through the Northwest Passage and Siberian arctic waters may develop in coming decades. Commercial fishing opportunities may also expand should the sea ice continue to diminish. The result could be

increased temporal and spatial overlap between fishing and shipping operations and walrus habitat use and increased interactions between walrus and marine vessels.

*Past Offshore Oil and Gas Related Activities*—Oil and gas related activities have been conducted in the Chukchi and Beaufort Seas since the late 1960's. Much more oil and gas related activity has occurred in the Beaufort Sea than in the Chukchi Sea OCS. Pacific walrus do not normally range into the Beaufort Sea, and documented interactions between oil and gas activities and walrus have been minimal (see Observed Impacts of Oil and Gas Industry Activities on Pacific Walrus). The Chukchi Sea OCS has previously experienced some oil and gas exploration activity, but no development or production. Because of the transitory nature of past oil and gas activities in any given region, we do not think that any of these encounters had lasting effects on individuals or groups.

*Summary of Cumulative Effects*—Hunting pressure, declining sea ice due to climate change, and the expansion of commercial activities into walrus habitat all have potential to impact walrus. Combined, these factors are expected to present significant challenges to future walrus conservation and management efforts. The success of future management efforts will rely in part on continued investments in research investigating population status and trends and habitat use patterns. The effectiveness of various mitigation measures and management actions will also need to be continually evaluated through monitoring programs and adjusted as necessary. The decline in sea ice is of particular concern, and will be considered in the evaluation of future proposed activities and as more information on walrus population status becomes available.

*Contribution of Proposed Activities to Cumulative Impacts*—The proposed seismic surveys and exploratory drilling operations identified by the petitioners are likely to result in some incremental cumulative effects to walrus through the potential exclusion or avoidance of walrus from feeding or resting areas and disruption of associated biological behaviors. However, based on the habitat use patterns of walrus in the Chukchi Sea and their close association with seasonal pack ice, relatively small numbers of walrus are likely to be encountered in the open sea conditions where most of the proposed activities are expected to occur. Required monitoring and mitigation measures, designed to minimize interactions between authorized projects and

concentrations of resting or feeding walrus, are also expected to limit the severity of any behavioral responses. Therefore, we conclude that the proposed exploration activities, especially as mitigated through the regulatory process, are not at this time expected to add significantly to the cumulative impacts on the Pacific walrus population from past, present, and future activities that are reasonably likely to occur within the 5-year period covered by the regulations if adopted.

#### *B. Observed Impacts of Oil and Gas Industry Activities on Pacific Walrus*

Oil and gas related activities have been conducted in the Beaufort and Chukchi Seas since the late 1960s. Much more oil and gas related activity has occurred in the Beaufort Sea OCS than in the Chukchi Sea OCS. Many offshore activities required ice management (icebreaking), helicopter traffic, fixed-wing aircraft monitoring, other support vessels, and stand-by barges. Although Industry has encountered Pacific walrus while conducting exploratory activities in the Beaufort and Chukchi seas, to date, no walrus are known to have been killed due to encounters associated with Industry activities.

Pacific walrus do not normally range into the Beaufort Sea, although individuals and small groups have been observed. From 1994 to 2004, Industry monitoring programs recorded a total of nine walrus sightings involving a total of 10 animals. Three of the reported sightings involved potential disturbances to walrus; two sightings were of individual animals hauled-out onto the armor of Northstar Island, and one sighting occurred at the McCovey prospect, where a walrus appeared to react to helicopter noise. Physical effects or impacts to individual walrus were not noted. Because of the small numbers of walrus encountered by past and present oil and gas activity in the Beaufort Sea, impacts to the Pacific walrus population appear to have been minimal.

Three pre-lease seismic surveys were carried out in the Chukchi Sea OCS planning area in 2006, where marine mammal monitoring was based on vessel and aerial platforms. Marine mammal observers onboard the seismic and support vessels recorded a total of 1,186 walrus sightings during their operations. Most of the walrus sightings were reported by seismic support vessels during ice-scouting missions. Three hundred and eighteen of the walrus sighted (27 percent) exhibited some form of behavioral response to the vessels, primarily dispersal or diving.

Seismic vessels, operating in open water conditions, recorded a total of 33 walrus sightings. Marine mammal observers reported 19 incidents in which walrus were observed within a predetermined safety zone of ensonification, requiring the shut down of airgun arrays to prevent potential injuries. Based upon the transitory nature of the survey vessels, and the monitoring reports that noted behavioral reactions of the animals to the passage of the vessels, our best assessment is that these interactions resulted in no more than temporary changes in animal behavior. Additionally, the 2006 Chukchi Sea aerial surveys recorded a total of 1,882 walrus sightings. These regional aerial surveys were conducted in support of seismic activities as part of the marine mammal mitigation. During the three pre-lease seismic surveys conducted using vessel and aircraft platforms, a total of 3,068 walrus were observed. This represents a relatively small portion of the total number of animals that occurred at low densities within the open-water study area.

Aerial surveys and vessel-based observations of walrus were carried out in 1989 and 1990 to examine the responses of walrus to drilling operations at three Chukchi Sea drill prospects. Aerial surveys documented several thousand walrus in the vicinity of the drilling prospects; most of the animals (> 90 percent) were closely associated with sea ice. The monitoring reports concluded that: (1) Walrus distributions were closely linked with pack ice; (2) pack ice was near active drill prospects for relatively short time periods; and (3) ice passing near active prospects contained relatively few animals, concluded that effects of the drilling operations on walrus were limited in time, geographical scale, and proportion of the affected population.

#### *C. Evaluation*

Based on our review of the proposed activities; existing and proposed operating conditions and mitigation measures; information on the biology, ecology, and habitat use patterns of walrus in the Chukchi Sea; information on potential effects of oil and gas activities on walrus; and the results of previous monitoring efforts associated with Industry activity in the Beaufort and Chukchi Seas, we conclude that, while the incidental take (by harassment) of walrus is reasonably likely to or reasonably expected to occur as a result of the proposed activities, most of the anticipated takes will be limited to temporary, nonlethal disturbances impacting a relatively small numbers of

animals. Our review of the nature and scope of the proposed activities, when considered in light of the observed impacts of past exploration activities by Industry, indicates that it is unlikely that there will be any lethal take of walrus associated with these activities or any impacts on survivorship or reproduction.

#### *Polar Bears*

##### *A. Potential Impacts of Oil and Gas Industry Activities on Polar Bears*

###### *1. Disturbance*

In the Chukchi Sea, polar bears will have a limited presence during the open-water season during Industry operations. It is assumed they generally move to the northwestern portion of the Chukchi Sea and distribute along the pack-ice during this time, which is outside of the geographic region of the regulations. Additionally, they are found more frequently along the Chukotka coastline in Russia. This limits the chances of impacts on polar bears from Industry activities. Although polar bears have been observed in open-water, miles from the ice edge or ice floes, this has been a relatively rare occurrence.

*Offshore Activities.* In the open-water season, Industry activities will be limited to vessel-based exploration activities, such as seismic surveys and site clearance surveys and during the latter part of the regulatory period, offshore exploratory drilling may occur. These activities avoid ice floes and the multi-year ice edge; however, they could contact a limited number of bears in open water.

Seismic exploration activities in the Chukchi Sea could affect polar bears in a number of ways. Seismic ships and icebreakers may be physical obstructions to polar bear movements, although these impacts are of short-term and localized effect. Noise, sights, and smells produced by exploration activities could repel or attract bears, either disrupting their natural behavior or endangering them by threatening the safety of seismic personnel.

Little research has been conducted on the effects of noise on polar bears. Currently, researchers are studying the hearing sensitivity of polar bears to understand how noise affects polar bears. Polar bears are curious and tend to investigate novel sights, smells, and possibly noises. Noise produced by seismic activities could elicit several different responses in individual polar bears. Noise may act as a deterrent to bears entering the area of operation, or the noise could potentially attract curious bears.

In general, little is known about the potential for seismic survey sounds to cause auditory impairment or other physical effects in polar bears. Available data suggest that such effects, if they occur at all, would be limited to short distances and probably to projects involving large airgun arrays. There is no evidence that airgun pulses can cause serious injury, or death, even in the case of large airgun arrays. Additionally, the planned monitoring and mitigation measures include shut downs of the airguns, which will reduce any such effects that might otherwise occur if polar bears are observed in the ensonification zones. Polar bears normally swim with their heads above the surface, where underwater noises are weak or undetectable, and this behavior may naturally limit noise exposure to polar bears. Thus, it is doubtful that any single bear would be exposed to strong underwater seismic sounds long enough for significant disturbance, such as an auditory injury, to occur.

Polar bears are known to run from sources of noise and the sight of vessels, icebreakers, aircraft, and helicopters. The effects of fleeing from aircraft may be minimal if the event is short and the animal is otherwise unstressed. On a warm spring or summer day, a short run may be enough to overheat a well-insulated polar bear; however, fleeing from a working icebreaker may have minimal effects for a healthy animal on a cool day.

As already stated, polar bears spend the majority of their time on pack-ice during the open-water season in the Chukchi Sea or along the Chukotka coast, which limits the chance of impacts from human and Industry activities in the geographic region. In recent years, the Chukchi Sea pack-ice has receded over the Continental Shelf during the open water season. Although this poses potential foraging ramifications, by its nature the exposed open water creates a barrier between the majority of the ice pack-bound bear population and human activity occurring in open water, thereby limiting potential disturbance.

Researchers have observed that bears occasionally swim long distances during the open-water period seeking either ice or land. In 2005, researchers monitored one radio-collared individual as it swam through ice-free waters from Kotzebue north to the pack-ice 350 miles away. The bear began swimming on June 16, 2005, rested twice in open water (presumably on icebergs) and eventually reached the pack-ice on July 2, 2005. Researchers suspected that the bear was not swimming constantly, but found

solitary icebergs or remnants to haul-out on and rest. The movement is unusual, but highlights the ice-free environment that bears are being increasingly exposed to that requires increased energy demands.

Seismic activities avoid ice floes and the pack-ice edge; however, they may contact bears in open water. It is unlikely that seismic exploration activities would result in more than temporary behavioral disturbance to polar bears.

Vessel traffic could result in short-term behavioral disturbance to polar bears. If a ship is surrounded by ice, it is more likely that curious bears will approach. Any on-ice activities required by exploration activities create the opportunity for bear-human interactions. In relatively ice-free waters, polar bears are less likely to approach ships, although they could be encountered on ice floes. For example, during the late 1980s, at the Belcher exploration drilling site in the Beaufort Sea, in a period of little ice, a large floe threatened the drill rig at the site. After the floe was moved by an ice breaker, workers noticed a female bear with a cub-of-the-year and a lone adult swimming nearby. It was assumed these bears had been disturbed from the ice floe.

Ships and ice breakers may act as physical obstructions, altering or intercepting bear movements in the spring during the start-up period for exploration if they transit through a restricted lead system, such as the Chukchi Polynya. Polynyas are important habitat for ice seals and walrus, which makes them important hunting areas for polar bears. A similar situation could occur in the fall when the pack-ice begins to expand. The separation of polar bears, whether on land, on ice, or in water, and marine vessels by creating an operational exclusion zone would limit potential impact of marine vessels to polar bears.

High altitude routine aircraft traffic appears to have little to no effect on polar bears; however, extensive or repeated over-flights of fixed-wing aircraft or helicopters could disturb polar bears. Behavioral reactions of polar bears are expected to be limited to short-term changes in behavior that would have no long-term impact on individuals and no identifiable impacts on the polar bear population.

In the later years of the regulations, offshore exploratory drilling may occur during the open water seasons. Disturbances to polar bears by vessel and aircraft traffic used in support of exploratory drilling would be similar to those that have already been described.

Monitoring and mitigation measures required for open water, offshore activities will include, but will not be limited to: (1) A 0.5-mile operational exclusion zone around polar bear(s) on land, ice, or swimming; (2) MMOs on board all vessels; (3) requirements for ice-scouting; (4) surveys for polar bears in the vicinity of active operations and ice breaking activities; and (5) operational restrictions near polar bear aggregations. These mitigation measures are expected to further reduce the potential for interactions between polar bears and offshore operations.

*Onshore Activities.* Onshore activities will have the potential to interact with polar bears mainly during the fall and ice-covered season when bears come ashore to feed, den, or travel. Noise produced by Industry activities during the open-water and ice-covered seasons could potentially result in takes of polar bears at onshore activities. During the ice-covered season, denning female bears, as well as mobile, non-denning bears, could be exposed to oil and gas activities, such as seismic exploration or exploratory drilling facilities, and could potentially be affected in different ways.

Noise disturbance can originate from either stationary or mobile sources. Stationary sources include exploratory drilling operations and their associated facilities. Mobile sources can include vehicle and aircraft traffic in association with Industry activities, such as ice road construction and vibroseis programs.

Noise produced by stationary Industry activities could elicit several different responses in polar bears. The noise may act as a deterrent to bears entering the area, or the noise could potentially attract bears. Attracting bears to these facilities, especially exploration facilities in the coastal or nearshore environment, could result in human-bear encounters, which could result in unintentional harassment, lethal take, or intentional hazing (under separate authorization) of the bear.

During the ice-covered season, noise and vibration from exploratory drilling facilities could deter females from denning in the surrounding area, although polar bears have been known to den in proximity to industrial activities without any perceived impacts. For example, in 1991, two maternity dens were located on the south shore of a barrier island within 2.8 km (1.7 mi) of an already established production facility. In addition, during the ice-covered season of 2001–2002, two known polar bear dens were located within approximately 0.4 km and 0.8 km (0.25 mi and 0.5 mi) of remediation activities on Flaxman Island that were initiated after denning presumably

occurred. Through increased monitoring efforts, there were no observed impacts to denning success or the polar bears.

In contrast, information exists indicating that polar bears may have abandoned dens in the past due to exposure to human disturbance. For example, in January 1985, a female polar bear may have abandoned her den due to rolligon traffic, which occurred between 250 and 500 meters from the den site. Researcher disturbance created by camp proximity and associated noise, which occurred during a den emergence study in 2002 on the North Slope, may have caused a female bear and her cub(s) to abandon their den and move to the ice sooner than necessary. The female was observed later without the cub(s). While such events caused by Industry-related activities may have occurred in the Beaufort Sea, information indicates they have been infrequent and isolated.

In addition, polar bears exposed to routine industrial noises may acclimate to those noises and show less vigilance than bears not exposed to such stimuli. This implication came from a study that occurred in conjunction with industrial activities performed on Flaxman Island in 2002 and a study of undisturbed dens in 2002 and 2003 (N = 8). Researchers assessed vigilant behavior with two potential measures of disturbance: (1) Proportion of time scanning their surroundings and (2) frequency of observable vigilant behaviors. Bears exposed to industrial activity spent less time scanning their surroundings than bears in undisturbed areas and engaged in vigilant behavior significantly less often.

As with offshore activities, routine high-altitude aircraft traffic should have little to no effect on polar bears; however, extensive or repeated low-altitude over-flights of fixed-wing aircraft for monitoring purposes or helicopters used for re-supply of Industry operations could disturb polar bears. Behavioral reactions of non-denning polar bears are expected to be limited to short-term changes in behavior and would have no long-term impact on individuals and no impacts on the polar bear population. In contrast, denning bears could abandon or depart their dens early in response to repeated noise such as that produced by extensive aircraft over-flights occurring in close proximity to the den. Mitigation measures, such as minimum flight elevations over polar bears or areas of concern and flight restrictions around known polar bear dens, will be required, as appropriate, to reduce the likelihood that bears are disturbed by aircraft.

Noise and vibrations produced by vibroseis activities during the ice-covered season could potentially result in impacts on polar bears. During this time of year, denning female bears as well as mobile, non-denning bears could be exposed to and affected differently by potential impacts from seismic activities. The best available scientific information indicates that female polar bears entering dens, or females in dens with cubs, are more sensitive to noises than other age and sex groups. Standardized mitigation measures will be implemented to limit or minimize disturbance impacts to denning females. These Industry mitigation measures are currently in place in the Beaufort Sea and are implemented when necessary through LOAs. They will be implemented in the Chukchi Sea geographic region when necessary as well.

In the case of exploratory seismic or drilling activities occurring around a known bear den, each LOA will require Industry to have developed a polar bear interaction plan and will require Industry to maintain a 1-mile buffer between Industry activities and known denning sites to limit disturbance to the bear. In addition, we may require Industry to avoid working in known denning habitat depending on the type of activity, the location of activity, and the timing of the activity. To further reduce the potential for disturbance to denning females, we have conducted research, in cooperation with Industry, to enable us to accurately detect active polar bear dens through the use of Forward Looking Infrared (FLIR) imagery.

The FLIR imagery, as a mitigation tool, is used in cooperation with coastal polar bear denning habitat maps and scent-trained dogs. Industry activity areas, such as coastal ice roads and transitory exploratory activities, are compared to polar bear denning habitat, and transects are then created to survey the specific habitat within the Industry area. The FLIR heat signatures within a standardized den protocol are noted, and further mitigation measures are placed around these locations if dens are apparent. These measures include the 1-mile operational exclusion zone or increased monitoring of the site. FLIR surveys are more effective at detecting polar bear dens than visual observations. The effectiveness increases when FLIR surveys are combined with site-specific, scent-trained dog surveys.

Based on these evaluations, the use of FLIR technology, coupled with trained dogs, to locate or verify occupied polar bear dens is a viable technique that

helps to minimize impacts of Industry activities on denning polar bears. These techniques will continue to be required as conditions of LOAs, when appropriate.

In addition, Industry has sponsored cooperative research evaluating transmission of noise and vibration through the ground, snow, ice, and air and the received levels of noise and vibration in polar bear dens. This information has been useful to refine site-specific mitigation measures and placement of facilities.

Furthermore, as part of the LOA application for seismic surveys during denning season, Industry provides us with the proposed seismic survey routes. To minimize the likelihood of disturbance to denning females, we evaluate these routes along with information about known polar bear dens, historic denning sites, and delineated denning habitat. Should a potential denning site be identified along the survey route, FLIR or polar bear scent-trained dogs, or both, will be used to determine whether the den is occupied, in which case a 1-mile buffer surrounding the den will be required.

There is the potential for Industry activities other than seismic, such as transport activities and ice road construction, to contact polar bear dens as well. Known polar bear dens around the oil and gas activities are monitored by the Service, when practicable. Only a small percentage of the total active den locations are known in any year. Industry routinely coordinates with the Service to determine the location of Industry's activities relative to known dens and den habitat. General LOA provisions will be similar to those imposed on seismic activities and will require Industry operations to avoid known polar bear dens by 1 mile. There is the possibility that an unknown den may be encountered during Industry activities. Industry is required to contact the Service if a previously unknown den is identified. Communication between Industry and the Service and the implementation of mitigation measures, such as the 1-mile operational exclusion area around known dens or the temporary cessation of Industry activities, would ensure that disturbance is minimized.

Human encounters can be dangerous for both the polar bear and the human and are another type of onshore disturbance. These can occur during any onshore Industry activity. Whenever humans work in the habitat of the animal, there is a chance of an encounter, even though, historically, such encounters have been uncommon in association with Industry.

Encounters are more likely to occur during fall and winter periods when greater numbers of bears are found in the coastal environment searching for food and possibly den sites later in the season. Potentially dangerous encounters are most likely to occur at coastal exploratory sites because a higher percentage of bears transit through the coastal areas, rather than inland, and because of the temporary nature of exploratory activities. In the Beaufort Sea, Industry has developed and uses devices to aid in detecting polar bears, including human bear monitors, motion and infrared detection systems, and closed-circuit TV systems. Industry also takes steps to actively prevent bears from accessing facilities using safety gates and fences. The types of detection and exclusion systems are implemented on a case-by-case basis with guidance from the Service and depend on the location and needs of the facility. Industry will implement these same mitigative measures onshore in the Chukchi Sea region to minimize disturbance of polar bears.

Onshore drilling sites near the coastline could potentially attract polar bears. Polar bears use the coastline as a travel corridor. In the Beaufort Sea, the majority of polar bear observations have occurred along the coastline. Most bears were observed as passing through the area; however, nearshore facilities could potentially increase the rate of human-bear encounters, which could result in increased incidents of harassment of bears. Employee training and company policies through interaction plans will be implemented to reduce and mitigate such encounters. In the Beaufort Sea region, the history of the effective application of interaction plans has shown reduced interactions between polar bears and humans and no injuries or deaths to humans since the implementation of incidental take regulations. Therefore, the Service concludes that interaction plans are an effective means of reducing Industry impacts to polar bears.

Depending upon the circumstances, bears can be either repelled from or attracted to sounds, smells, or sights associated with onshore Industry activities. In the past, such interactions have been mitigated through conditions on the LOA, which require the applicant to develop a polar bear interaction plan for each operation. These plans outline the steps the applicant will take, such as garbage disposal, attractant management, and snow management procedures, to minimize impacts to polar bears by reducing the attraction of Industry activities to polar bears. Interaction plans also outline the chain

of command for responding to a polar bear sighting. In addition to interaction plans, Industry personnel participate in polar bear interaction training while on site.

Employee training programs are designed to educate field personnel about the dangers of bear encounters and to implement safety procedures in the event of a bear sighting. The result of these polar bear interaction plans and training allows personnel on site to detect bears and respond safely and appropriately. Often, personnel are instructed to leave an area where bears are seen. Many times polar bears are monitored until they move out of the area. Sometimes, this response involves deterring the bear from the site. If it is not possible to leave, in most cases bears can be displaced by using forms of deterrents, such as vehicles, vehicle horn, vehicle siren, vehicle lights, spot lights, or, if necessary, pyrotechnics (e.g., cracker shells). The purpose of these plans and training is to eliminate the potential for injury to personnel or lethal take of bears in defense of human life. Since 1993, when the incidental take regulations became effective in the Beaufort Sea, there has been no known instance of a bear being killed or Industry personnel being injured by a bear as a result of Industry activities. The mitigation measures associated with the Beaufort Sea incidental take regulations have proven to minimize human-bear interactions and will be part of the requirements of future LOAs associated with the Chukchi Sea incidental take regulations.

*Effect on Prey Species.* Ringed seals are the primary prey of polar bears. Bearded seals are also a prey source. Industry will mainly have an effect on seals through the potential for contamination (oil spills) or industrial noise disturbance. Oil and gas activities in the Chukchi Sea are anticipated to have the same effects of contamination from oil discharges for seals as those described in the current Beaufort Sea incidental take regulations (71 FR 43926; August 2, 2006) in the section "Potential Impacts of Waste Product Discharge and Oil Spills on Pacific Walruses and Polar Bears" and the "Pacific Walruses" subsection of that document. Studies have shown that seals can be displaced from certain areas, such as pupping lairs or haul-outs, and may abandon breathing holes near Industry activity. However, these disturbances appear to have minor effects and are short term. In the Chukchi Sea, offshore operations have the highest potential to impact seals; however, due to the seasonal aspect (occurring only during the open-water

season) of offshore operations, the Service anticipates minimal disturbance to ringed and bearded seals. In addition, the National Marine Fisheries Service (NMFS), having jurisdiction over the conservation and management of ringed and bearded seals, will evaluate the potential impacts of oil and gas exploration activities in the Chukchi Sea through their appropriate authorization process and will identify appropriate mitigation measures for those species, if a negligible finding is appropriate. The Service does not expect prey availability to be significantly changed due to Industry activities. Mitigation measures for pinnipeds required by MMS and NMFS will reduce the impact of Industry activities on ringed and bearded seals.

## 2. Waste Discharge and Potential Oil Spills

Individual polar bears can potentially be affected by Industry activities through waste product discharge and oil spills. Spills are unintentional releases of oil or petroleum products. In accordance with the National Pollutant Discharge Elimination System Permit Program, all North Slope oil companies must submit an oil spill contingency plan with their projects. It is illegal to discharge oil into the environment, and a reporting system requires operators to report spills.

According to MMS, on the Beaufort and Chukchi OCS, the oil industry has drilled 35 exploratory wells. During the time of this drilling, Industry has had 35 small spills totaling 26.7 bbl or 1,120 gallons (gal) in the Beaufort and Chukchi OCS. Of the 26.7 bbl spilled, approximately 24 bbl were recovered or cleaned up. Larger spills ( $\geq 1,000$  bbl) accounted for much of the annual volume. Six large spills occurred between 1985 and 2006 on the North Slope. These spills were terrestrial in nature and posed minimal harm to walruses and polar bears. Based on the history of effective application of oil spill plans, to date, no major exploratory offshore oil spills have occurred on the North Slope in either the Beaufort or Chukchi Seas.

Historical large spills (greater than 1,000 bbl) associated with Alaskan oil and gas activities on the North Slope have been production-related, and have occurred at production facilities or pipeline connecting wells to the Trans-Alaska Pipeline System. MMS estimates the chance of a large (greater than 1,000 bbl) oil spill from exploratory activities in the Chukchi Sea to be low based on the types of spills recorded in the Beaufort Sea. For this rule, potential oil spills for exploration activities will

likely occur with the marine vessels. From past experiences, MMS believes these will most likely be localized and relatively small. Spills in the offshore or onshore environments classified as small could occur during normal operations (e.g., transfer of fuel, handling of lubricants and liquid products, and general maintenance of equipment). There is a greater potential for large spills in the Chukchi Sea region from drilling platforms. However, exploratory drilling platforms have required containment ability in case of a blowout as part of their oil spill contingency plan, which means that the likelihood of a large release remains minimal.

The possibility of oil and waste product spills from Industry activities in the Chukchi Sea and the subsequent impacts on polar bears is a concern; however, given the seasonal nature of the requested Industry activities, the potential for negative impacts will be minimized. During the open-water season (June to October), there is some potential for spills from offshore Industry activities. At this time, bears in the open water or on land may encounter and be affected by any such oil spill. During the ice-covered season (November to May), onshore Industry activities will have the greatest likelihood of exposing transiting polar bears to potential oil spills. Although the majority of the Chukchi Sea polar bear population spends a large amount of time offshore on the annual or multi-year pack-ice and along the Russian coastline, some bears could encounter oil from a spill regardless of the season and location.

Small spills of oil or waste products throughout the year by Industry activities on land could potentially impact small numbers of bears. The effects of fouling fur or ingesting oil or wastes, depending on the amount of oil or wastes involved, could be short term or result in death. For example, in April 1988, a dead polar bear was found on Leavitt Island, in the Beaufort Sea, approximately 9.3 km (5 nautical miles) northeast of Oliktok Point. The cause of death was determined to be poisoning by a mixture that included ethylene glycol and Rhodamine B dye; however, the source of the mixture was unknown.

During the ice-covered season, mobile, non-denning bears would have a higher probability of encountering oil or other Industry wastes in the onshore environment than non-mobile, denning females. Current management practices by Industry, such as requiring the proper use, storage, and disposal of hazardous materials, minimize the potential occurrence of such incidents.

In the event of an oil spill, it is also likely that polar bears would be intentionally hazed to keep them away from the area, further reducing the likelihood of impacting individuals or the population.

Oil exposure by polar bears could occur through the consumption of contaminated prey, and by grooming or nursing, which could affect motility, digestion, and absorption. Death could occur if a large amount of oil were ingested. Oiling can also cause thermoregulatory problems and damage to various systems, such as the respiratory and the central nervous systems, depending on the amount of exposure. Oil may also affect the prey base of polar bears where possible impacts from the loss of a food source could reduce recruitment or survival of polar bears. A detailed description of potential effects of exposure to oil by polar bears can be found in the preamble to the Beaufort Sea Incidental Take Regulations (71 FR 43926; August 2, 2006).

### 3. Cumulative Effects

The Polar Bear Status Review describes cumulative effects of oil and gas development on polar bears in Alaska (see pages 175 to 181 of the status review). This document can be found at: <http://alaska.fws.gov/fisheries/mmm/polarbear/issues.htm>. The status review concentrated on oil and gas development in the Beaufort Sea because of the established presence of the Industry in the Beaufort Sea. The Service believes the conclusions of the status review will apply to Industry activities in the Chukchi Sea during the 5-year regulatory period because the exploratory activities in the Beaufort Sea are similar to those proposed in the Chukchi Sea.

In addition, in 2003 the National Research Council published a description of the cumulative effects that oil and gas development would have on polar bears and seals in Alaska. They concluded that:

(1) "Industrial activity in the marine waters of the Beaufort Sea has been limited and sporadic and likely has not caused serious cumulative effects to ringed seals or polar bears." Industry activity in the Chukchi Sea during the regulatory period will be limited to exploration activities, such as seismic, drilling, and support vessels.

(2) "Careful mitigation can help to reduce the effects of oil and gas development and their accumulation, especially if there is no major oil spill." The Service will be using mitigation measures similar to those established in the Beaufort Sea to limit impacts of

polar bears in the Chukchi Sea. "However, the effects of full-scale industrial development off the North Slope would accumulate through the displacement of polar bears and ringed seals from their habitats, increased mortality, and decreased reproductive success." Full-scale development of this nature will not occur during the prescribed regulatory period in the Chukchi Sea.

(3) "A major Beaufort Sea oil spill would have major effects on polar bears and ringed seals." One of the concerns for future oil and gas development is for those activities that occur in the marine environment due to the chance for oil spills to impact polar bears or their habitats. No production activities are planned for the Chukchi Sea during the duration of these regulations. Oil spills as a result of exploratory seismic activity could occur in the Chukchi Sea; however, the probability of a large spill is expected to be minimal.

(4) "Climatic warming at predicted rates in the Beaufort and Chukchi sea regions is likely to have serious consequences for ringed seals and polar bears, and those effects will accumulate with the effects of oil and gas activities in the region."

(5) "Unless studies to address the potential accumulation of effects on North Slope polar bears or ringed seals are designed, funded, and conducted over long periods of time, it will be impossible to verify whether such effects occur, to measure them, or to explain their causes." Future studies in the Chukchi Sea will examine polar bear habitat use and distribution, reproduction, and survival relative to a changing sea ice environment.

A detailed description of climate change and its potential effects on polar bears by the Service can be found in the documents supporting the decision to list the polar bear as a threatened species under the ESA at <http://www.fws.gov/>. Additional detailed information by the USGS regarding the status of the SBS stock in relation to decreasing sea ice due to increasing temperatures in the Arctic, projections of habitat and populations, and forecasts of rangewide status can be found at: [http://www.usgs.gov/newsroom/special/polar\\_bears](http://www.usgs.gov/newsroom/special/polar_bears). These factors could alter polar bear habitat because seasonal changes, such as extended duration of open water, may preclude sea ice habitat use by restricting some bears to coastal areas. Biological effects on polar bears are expected to include increased movements or travel, changes in bear distribution throughout their range, changes to the access and allocation of denning areas, and increased open

water swimming. Demographic effects that may be changed due to climate change include changes in prey availability to polar bears, a potential reduction in the access to prey, and changes in seal productivity.

Locally in the Chukchi Sea, it is expected that the reduction of sea ice extent will affect the timing of polar bear seasonal movements between the coastal regions and the pack-ice. If the sea ice continues to recede as predicted, the Service anticipates that there may be an increased use of terrestrial habitat in the fall period by polar bears on the western coast of Alaska and an increased use of terrestrial habitat by denning bears in the same area, which may expose bears to Industry activity. Mitigation measures will be effective in minimizing any additional effects attributed to seasonal shifts in distributions of denning polar bears during the 5-year timeframe of the regulations. It is likely that, due to potential seasonal changes in abundance and distribution of polar bears during the fall, more frequent encounters may occur and that Industry may have to implement mitigation measures more often, for example, increasing polar bear deterrence events. In addition, if additional polar bear den locations are detected within industrial activity areas, spatial and temporal mitigation measures, including cessation of activities, may be instituted more frequently during the 5-year period of the rule. As with the Beaufort Sea, the challenge in the Chukchi Sea will be predicting changes in ice habitat and coastal habitats in relation to changes in polar bear distribution and use of habitat.

The proposed activities (seismic surveys and exploratory drilling operations) identified by the petitioners are likely to result in some incremental cumulative effects to polar bears during the 5-year regulatory period. This could occur through the potential exclusion or avoidance of polar bears from feeding, resting, or denning areas and disruption of associated biological behaviors. However, the level of cumulative effects, including those of climate change, during the 5-year regulatory period would result in less than negligible effects on the bear population.

#### *B. Observed Impacts of Oil and Gas Industry Activities on Polar Bears*

Information regarding interactions between oil and gas activities and polar bears in Canada, the Beaufort Sea, and the Chukchi Sea has been collected for several decades. This information is useful in predicting how polar bears are

likely to be affected by the proposed activities.

In 1990, in conjunction with the Shell Western E&P, Inc. walrus monitoring program, a total of 25 polar bears were observed on the pack ice in the Chukchi Sea between June 29 and August 11, 1990. Seventeen bears were encountered by the support vessel, *Robert LeMeur*, during an ice reconnaissance survey before drilling began at the prospects. During drilling operations, four bears were observed near (<9 km or 5 n mi) active prospects, and the remainder were considerably beyond (15–40 km or 8–22 n mi.). These bears responded to the drilling or icebreaking operations by approaching (two bears), watching (nine bears), slowly moving away (seven bears), or ignoring (five bears) the activities; response was not evaluated for two bears. The period of exposure to the operations was generally short because precautions were taken to minimize disturbances, including adjusting cruise courses away from bears. Similar precautions were followed in 1989, when 18 bears were sighted in the Chukchi pack ice during the monitoring program. The researchers of the 1990 monitoring program concluded that: (1) Polar bear distributions were closely linked to the pack ice; (2) the pack ice was near the active prospects for a relatively brief time; and (3) the ice passing near active prospects contained relatively few animals.

In 2006, four individual polar bears were sighted during three oil and gas seismic surveys on the Chukchi Sea. All the bears were observed by seismic support vessels. Three of the four bears were observed walking on ice, and one animal was observed swimming. Two of the four reacted to the vessel by distancing itself from the vessel. All four sightings occurred between September 2 and October 3, 2006.

Five polar bear observations (11 individuals) were recorded during the University of Texas at Austin's marine geophysical survey performed by the U.S. Coast Guard (USCG) Cutter *Healy* in 2006. This survey was located in the northern Chukchi Sea and Arctic Ocean. All bears were observed on the ice between July 21 and August 19. No polar bears were in the water where they could have been subject to appreciable noise levels from operating airguns. The closest point of approach distances of bears from the *Healy* ranged from 780 m to 2.5 km. One bear was observed approximately 575 m from a helicopter conducting ice reconnaissance. Four of the groups exhibited possible reactions to the helicopter or vessel, suggesting that

disturbances from seismic operations can be short-term and limited to minor changes in behavior.

In 2007, at the Intrepid exploration site located on the Chukchi Sea coast south of Barrow, a female bear and her cub were observed approximately 100 meters near a pad. The bear did not appear concerned about the activity and, while being observed by a bear monitor, the female changed her direction of movement and left the area. This is another example of a polar bear expressing minimal behavior change due to an interaction with Industry and it is similar to encounters between polar bears and Industry that have been documented in the Beaufort Sea.

Additional information exists on Industry and polar bear encounters in the Beaufort Sea. Documented impacts on polar bears by the oil and gas industry in the Beaufort Sea during the past 30 years appear minimal. Polar bears spend time on land, coming ashore to feed, den, or move to other areas. Recent studies suggest that bears are spending more time on land than they have in the past, perhaps in response to changing ice conditions.

Annual monitoring reports from Industry activities and community observations indicate that fall storms force bears to concentrate along the coastline where bears remain until the ice returns. For this reason, polar bears have been encountered at or near most coastal and offshore production facilities, or along the roads and causeways that link these facilities to the mainland. During those periods, the likelihood of interactions between polar bears and Industry activities increases. From Industry monitoring reports most bears are observed within a mile of the coastline. Similarly, we expect intermittent periods with high concentrations of bears to occur along the Chukchi Sea coastline.

The majority of actual impacts on polar bears in the Beaufort Sea have resulted from direct human-bear encounters. Monitoring efforts by Industry required under Beaufort Sea regulations for the incidental take of polar bears resulted in the documentation of various types of interactions between polar bears and Industry. A total of 269 LOAs have been issued for incidental (unintentional) take of polar bears in regard to oil and gas activities between 1993 to 2005; approximately 76 percent were for exploration activities.

In 2004, the most recent year where records are complete, the oil and gas industry reported 89 polar bear sightings involving 113 individual bears. Polar bears were more frequently

sighted from August to January. Seventy-four sightings were of single bears, and 15 sightings consisted of family groups. Offshore oil facilities, Northstar and Endicott, accounted for 63 percent of all polar bear sightings, 42 percent and 21 percent, respectively. This shows that Industry activities that occur on or near the Beaufort Sea coast have a greater probability of encountering polar bears than Industry activities occurring inland. Fifty-nine percent (n=53) of polar bear sightings consisted of observations of polar bears traveling through or resting near the monitored areas without a perceived reaction to human presence. Forty-one percent (n=36) of polar bear sightings involved Level B harassment, where bears were deterred from industrial areas with no injury.

We expect similar trends in the coastal areas of the Chukchi Sea. These include a higher frequency of polar bears observed on land during the fall and early winter months, single bears seen more frequently than family groups, and a higher percentage of bears observed moving passively through Industry areas than the percentage of bears involved in interactions.

Prior to issuance of regulations, lethal takes by Industry were rare. Since 1968, there have been only two documented cases of lethal take of polar bears associated with oil and gas activities. In both instances, the lethal take was reported to be in defense of human life. In winter 1968–1969, an Industry employee shot and killed a polar bear. In 1990, a female polar bear was killed at an exploratory drill site on the west side of Camden Bay. In contrast, 33 polar bears were killed in the Canadian Northwest Territories from 1976 to 1986 due to encounters with Industry. Since the beginning of the incidental take program, which includes measures that minimize impacts to the species, no polar bears have been killed due to encounters associated with Industry activities on the North Slope. For this reason, Industry has requested that these regulations cover only nonlethal, incidental take. We anticipate this nonlethal trend to continue in the Chukchi Sea.

### C. Evaluation

The Service anticipates that potential impacts of seismic noise, physical obstructions, human encounters, changes in distribution or numbers of prey species, oil spills, and cumulative effects on polar bears would be limited to short-term changes in behavior that would have no long-term impact on individuals or identifiable impacts to the polar bear population during the 5-

year regulatory period. Individual polar bears may be observed in the open water during offshore activities in Alaska waters, but the vast majority of the bear populations will be found on the pack-ice or along the Chukotka coastline in Russia during this time of year. These locations are not near the proposed Industry activities. Because there will be few encounters, and mitigation measures will be in place, it is unlikely that there will be any lethal take due to Industry activities. Our experience in the Beaufort Sea similarly suggests that there is unlikely to be any lethal take of bears due to Industry exploratory activity.

Potential impacts to bears will be mitigated through various requirements stipulated within LOAs. Mitigation measures that will be required for all projects include a polar bear interaction plan and a record of communication with affected villages that may serve as the precursor to a POC with the village to mitigate effects of the project on subsistence activities. Mitigation measures that will be used on a case-by-case basis include the use of trained marine mammal observers associated with offshore, marine activities; bear monitors for onshore activities; the use of den habitat maps (where appropriate); the use of FLIR or polar bear scent-trained dogs to determine the presence or absence of dens; timing of the activity to limit disturbance around dens; the 1-mile buffer surrounding known dens; and suggested work actions around known dens. The Service implements certain mitigation measures based on need and effectiveness for specific activities based largely on timing and location. For example, the Service will implement different mitigation measures for a 2-month-long onshore exploration project 20 miles inland, than for an offshore drilling project. Based on past monitoring information, bears are more prevalent in the coastal areas than 20 miles inland. Therefore, the monitoring and mitigation measures that the Service deems appropriate must be implemented to limit the disturbance to bears, and the measures deemed necessary to limit human-bear interactions may differ.

Potential impacts of Industry waste products and oil spills suggest that individual bears could be impacted by this type of disturbance were it to occur. Depending on the amount of oil or wastes involved, and the timing and location of a spill, impacts could be short-term, chronic, or lethal. In order for bear population reproduction or survival to be impacted, a large-volume oil spill would have to take place.

According to MMS, during exploratory activities, the probability of a large oil spill occurring throughout the duration of these proposed regulations (five years) is very small. In addition, protocols for controlling waste products in project permits will limit exposure of bears to the waste products. Oil spill contingency plans are authorized by project permitting agencies and, if necessary, will also limit the exposure of bears to oil.

Furthermore, mitigation measures imposed through MMS lease stipulations are designed to avoid Level A harassment (injury), reduce Level B harassment, reduce the potential for population-level significant adverse effects on polar bears, and avoid an unmitigable adverse impact on their availability for subsistence purposes. Additional mitigation measures described in the rule will help reduce the level of Industry impacts to polar bears during the exploration activities through the promulgation of incidental take regulations and the issuance of LOAs with site-specific operating restrictions and monitoring requirements, which will provide mitigation and protection for polar bears. Therefore, we conclude that the proposed exploration activities, as mitigated through the regulatory process, will impact relatively small numbers of animals, are not expected to have more than negligible impacts on polar bears in the Chukchi Sea and will not have any significant, adverse impact on the availability of polar bears for subsistence uses.

### Potential Effects of Oil and Gas Industry Activities on Subsistence Uses of Pacific Walruses and Polar Bears

Walruses and polar bear have cultural and subsistence significance to the Inupiat Eskimos inhabiting the north coast of Alaska. Four North Slope communities are considered within the potentially affected area of Industry activities: Point Hope, Point Lay, Wainwright, and Barrow. The open-water season for oil and gas exploration activities coincides with peak walrus hunting activities in these communities. The subsistence harvest of polar bears can occur year round in the Chukchi Sea, depending on ice conditions, with peaks usually occurring in spring and fall.

Noise and disturbances associated with oil and gas exploration activities have the potential to adversely impact subsistence harvests of walruses and polar bears by displacing animals beyond the hunting range of these communities. Disturbances associated with exploration activities could also

heighten the sensitivity of animals to humans with potential impacts to hunting success. Little information is available to predict the effects of exploration activities on the subsistence harvest of walrus and polar bears. Hunting success varies considerably from year to year because of variable ice and weather conditions. Changing walrus distributions due to declining sea ice may also directly affect hunting opportunities. As ice retreats past the continental shelf, walrus have limited places to haul-out at sea to rest. In 2007, multiple new and larger terrestrial haul-outs were documented. These terrestrial haul-outs allowed for increased access to walrus for subsistence harvests.

The MMS and the petitioners believe that exploration activities can be conducted in a manner that will not result in an adverse impact on subsistence hunting of marine mammals in the Chukchi Sea. Lease Sale Area 193 includes a 25-mile coastal deferral zone, i.e., no lease sales will be offered within 25 miles of the coast, which is expected to reduce the impacts of exploration activities on subsistence hunting. Offshore seismic exploration will be restricted prior to July 1 of each open water season to allow migrating marine mammals the opportunity to disperse from the coastal zone. It is noted that support vessels and aircrafts are expected to regularly transit the coastal deferral zone and have the potential to disturb marine mammals in coastal hunting areas. The MMS Lease stipulations will require lessees to consult with the subsistence communities of Barrow, Wainwright, Point Lay, and Point Hope prior to submitting an Operational Plan to MMS for exploration activities. The intent of these consultations is to identify any potential conflicts between proposed exploration activities and subsistence hunting opportunities in the coastal communities. Where potential conflicts are identified, MMS may require additional mitigation measures as identified by NMFS and the Service through MMPA authorizations.

In addition to the existing MMS lease stipulations and mitigation measures described above, the Service has also developed additional mitigation measures that will be implemented through these incidental take regulations. The following LOA stipulations, which will mitigate potential impacts to subsistence walrus and polar bear hunting from the proposed activities, apply to incidental take authorizations:

(1) Prior to receipt of an LOA, applicants must contact and consult with the communities of Point Hope,

Point Lay, Wainwright, and Barrow through their local government organizations to identify any additional measures to be taken to minimize adverse impacts to subsistence hunters in these communities. A POC will be developed if there is a general concern from the community that the proposed activities will impact subsistence uses of Pacific walrus or polar bears. The POC must address how applicants will work with the affected Native communities and what actions will be taken to avoid interference with subsistence hunting of walrus and polar bears. The Service will review the POC prior to issuance of the LOA to ensure that any potential adverse effects on the availability of the animals are minimized.

(2) Take authorization will not be granted for activities in the marine environment which occur within a 40-mile radius of Barrow, Wainwright, Point Hope, or Point Lay, unless expressly authorized by these communities through consultations or through a POC. This condition is intended to limit potential interactions between Industry activities and subsistence hunting in near-shore environments.

(3) Offshore seismic exploration activities will be authorized only during the open-water season, which will not exceed the period of July 1 to November 30. This condition is intended to allow communities the opportunity to participate in subsistence hunts for polar bears without interference and to minimize impacts to walrus during the spring migration. Exemption waivers to this operating condition may be issued by the Service on a case-by-case basis, based upon a review of seasonal ice conditions and available information on walrus and polar bear distributions in the area of interest.

(4) A 15-mile separation must be maintained between all active seismic surveys and/or exploratory drilling operations to mitigate cumulative impacts to resting, feeding, and migrating walrus.

#### *Evaluation*

Based on the best scientific information available and the results of harvest data, including affected villages, the number of animals harvested, the season of the harvests, and the location of hunting areas, we find that the effects of the proposed exploration activities in the Chukchi Sea region would not have an unmitigable adverse impact on the availability of walrus and polar bears for taking for subsistence uses during the period of the rule. In making this finding, we considered the following:

(1) Historical data regarding the timing and location of harvests; (2) effectiveness of mitigation measures stipulated by MMS-issued operational permits; (3) Service regulations to be codified at 50 CFR 18.118 for obtaining an LOA, which include requirements for community consultations and POCs, as appropriate, between the applicants and affected Native communities; (4) effectiveness of mitigation measures stipulated by Service-issued LOAs; and (5) anticipated effects of the applicants' proposed activities on the distribution and abundance of walrus and polar bears.

#### **Summary of Take Estimates for Pacific Walrus and Polar Bears**

##### *Small Numbers Determination*

As discussed in the "Biological Information" section, the dynamic nature of sea ice habitats influences seasonal and annual distribution and abundance of polar bears and walrus in the specified geographical region (eastern Chukchi Sea). The following five-factor analysis demonstrates that only small numbers of Pacific walrus and polar bears are likely to be taken incidental to the described Industry activities relative to the number of walrus and polar bears that are expected to be unaffected by those activities. This analysis is based upon known distribution patterns and habitat use of Pacific walrus and polar bears.

1. *The number of walrus and polar bears occupying the specified geographical region during the open water exploration season is expected to be proportionally smaller than the number of animals distributed in other regions.* During the summer months, the Pacific walrus population ranges well beyond the boundaries of the OCS lease sale area. Over the past decade, significant concentrations of animals have been observed during the open-water season at coastal haul-outs along the northern coastline of Chukotka, Russia, presumably in response to low ice concentrations in offshore areas. There are no recent aerial surveys along the western (Russian) portion of the Chukchi Sea, however, observations by hunters in 2007 noted an estimated 75,000 to 100,000 walrus on haul-outs along the Russian coastline. In comparison, aerial surveys in the U.S. sector of the Chukchi Sea in 2007 estimated 2,000–5,000 walrus were using coastal haul-outs along the Chukchi Sea coast of Alaska. Several tens of thousands of walrus (primarily bulls) are also known to use coastal haul-outs south of the Chukchi, in the Bering Sea, during the ice free season.

Based on this distribution information, we can infer that the number of walrus expected in the area of operation during the open water season when no ice is present is at least an order of magnitude less than the number of walrus utilizing pack ice and land habitats outside the proposed area of operations.

Polar bears also range well beyond the boundaries of the Chukchi Sea lease sale area. Even though they are naturally widely distributed throughout their range, a relatively large proportion of bears from the CS population utilize the western Chukchi sea region of Russia. Concurrently, polar bears from the SBS population predominantly utilize the central Beaufort Sea region of the Alaskan and Canadian Arctic. These areas are well outside of the geographic region of these regulations.

2. *Within the specified geographical region, the number of walruses and polar bears utilizing open water habitats, where the primary activity (seismic surveys) during offshore exploration operations will occur, is expected to be small relative to the number of animals utilizing pack ice habitats or coastal areas.* Both walruses and polar bears are poorly adapted to life in the open ocean. Unlike other pinnipeds, walruses must periodically "haul-out" onto ice or land to rest. The previous aerial survey efforts in the offshore region of the eastern Chukchi Sea found that most (80–96 percent) walruses were closely associated with sea ice and that the number of walruses observed in open water decreased significantly with distance from the pack ice. Previous survey efforts in the region in 1975, 1980, 1985, and 1990 concluded that most walruses will remain closely associated with floating pack ice during the open water season. We expect this behavior to continue. Under minimal or no-ice conditions, we expect most walruses will either migrate out of the region in pursuit of more favorable ice habitats, or relocate to coastal haul-outs (primarily in Russia) where their foraging trips will be restricted to near-shore habitats.

Polar bears are capable of swimming long distances across open water. However, based on scientific data, polar bears are expected to remain closely associated with either sea ice or coastal zones during the open water season where food availability is high. We expect the number of walruses and polar bears using pelagic waters during proposed open-water exploration activities to be very small relative to the number of animals exploiting more favorable habitats in the region (i.e., pack ice habitats and/or coastal haul-outs and near-shore environments).

3. *Within the specified geographical region, the footprint of authorized projects is expected to be small relative to the range of polar bear and walrus in the region.* The Chukchi Sea lease sale area represents 1.9 million square kilometers of potential walrus and polar bear habitat, comprising approximately 20 percent of the total area where walrus and polar bears would be expected to be found in the Chukchi Sea region. The typical marine seismic survey project is expected to sample less than 3 percent of this area and, because of difficulties associated with operating in and near pack ice, survey vessels will be operating in habitats where walrus and polar bear densities are expected to be low. Although it is impossible to predict with certainty the number of walruses or polar bears that might be present in the offshore environment of the lease sale area in a given year, or in a specific project area during the open water season, based on habitat characteristics where most exploration activities will occur (open-water environments) and the small sphere of influence that an authorized project would have on the lease sale area; based on scientific knowledge and observation of the species, only small numbers of walruses and polar bears will come in contact with Industry operations, and of those, only a small percentage will exhibit behavior constituting take.

As detailed in the section, "Description of Geographic Region," terrestrial habitat encompasses approximately 10,000 square kilometers of the NPR-A. A smaller portion of this habitat situated along the coast could be potential polar bear denning habitat. However, most coastal denning for the Chukchi Sea bears occurs in Russia, outside of the geographic region. Where terrestrial activities may occur in coastal areas of Alaska in polar bear denning habitat, specific mitigation measures will be required to minimize Industry impacts.

4. *Monitoring reports required of the industry in 2006 in the region where the majority of the proposed activities would occur provides insight on the level and significance of potential take.* Of the small number of walruses sighted in 2006, approximately one-fourth (318 of the 1,186 walrus documented by observers onboard a seismic vessel) of the animals observed exhibited some form of behavioral response to the same type of seismic activity covered by this rule and as such qualified as level B harassment take. The behavioral responses recorded were short-term nonlethal responses and the effects were limited to short-term, minor behavioral changes, primarily dispersal or diving.

None of the take that occurred would have affected reproduction, survival, or other critical life functions.

In 2006, sightings of 17 polar bears were reported by vessel monitoring programs for seismic activities that occurred in the region where the majority of the proposed activities will occur. Of these, only 6 of the polar bears exhibited some form of behavioral response and all effects were limited to short-term, minor behavioral changes, primarily moving away from the distraction. Therefore, none of the take that occurred would have affected reproduction, survival, or other critical life functions.

Although the actual number of animals exhibiting some form of behavioral response will vary from year to year related to the exact amount of industrial activity, we anticipate that response will be comparable to the take that occurred in 2006 in terms of the number of animals appearing to be disturbed by the activity as a proportion of the number of animals sighted. We also anticipate that the type of take will be similar to that observed in 2006, i.e., nonlethal, minor, short-term behavioral changes.

5. *Monitoring requirements and adaptive mitigation measures are expected to significantly limit the number of incidental takes of animals.* Holders of an LOA will be required to adopt monitoring requirements and mitigation measures designed to reduce potential impacts of their operations on walruses and polar bears. Restrictions on the season of operation (July–November) for marine activities are intended to limit operations to ice free conditions when walrus and polar bear densities are expected to be low in the proposed area of Industry operation. Monitoring programs are required to inform operators of the presence of marine mammals and sea ice incursions. Adaptive management responses based on real-time monitoring information (described in these regulations) will be used to avoid or minimize interactions with walruses and polar bears. For Industry activities in terrestrial environments where denning polar bears may be a factor, mitigation measures will require that den detection surveys be conducted and Industry will maintain at least a one-mile distance from any known polar bear den. A full description of the mitigation, monitoring, and reporting requirements associated with an LOA which will be requirements for Industry can be found in Section 18.118.

To summarize, only a small number of the Pacific walrus population and the Chukchi Sea and Southern Beaufort Sea

polar bear population will be impacted by the proposed Industry activity. This statement can be made with a high level of confidence because:

(1) Based upon the reported distribution of 100,000 walrus on haul-outs on the Chukotka coast and between 2,000 to 5,000 walrus in aerial surveys in 2007 on haul-outs on the Alaska coast, as well as the estimated 5,000 walrus in Bristol Bay; the number of walrus expected in the area of operation during the open water season when no ice is present is at least an order of magnitude less than the number of walrus utilizing pack ice and land habitats outside the proposed area of operations. Additionally, although polar bears are capable of swimming long distances across open water, based on scientific evidence polar bears are expected to remain closely associated with either sea ice or coastal zones where food availability is high and not in open water where the proposed activity will occur;

(2) the specific geographic region where the proposed activity will occur is approximately 20 percent of the total area where walrus and polar bears would be expected to be found, and the actual marine footprint of the Industry operations comprises less than 3 percent of this area, all of which is expected to be open water during seismic operations;

(3) based upon 2006 onboard observations, 1,186 walrus were observed by support vessels on ice scouting missions and of those, approximately 318 exhibited mild forms of behavioral response. Only 17 polar bears were observed and only 6 exhibited mild forms of behavioral response. In both instances, less than half of the animals encountered exhibited any behavioral response and those that responded did so in a mild fashion. Consequently, with the anticipation of approximately five vessels operating annually, the aggregate number of takes will remain small in comparison to the species population in the Chukchi Sea.

(4) importantly, the behavioral response observed was a very passive form of take. For walrus the response was primarily dispersal or diving and for polar bears primarily moving away from the disturbance. Such response would not have affected reproduction, survival, or other critical life functions. This same level of behavioral response is expected if encounters occur during future operations;

(5) the restrictive monitoring and mitigation measures that will be placed on Industry activity will further reduce the minimal impacts expected; and

(6) although sea ice decline as the result of climate change is likely to result in significant impacts to polar bears and walrus in the future, it will also likely reduce the number of polar bears and walrus occurring in the proposed area during Industry activity, further reducing the potential for interaction.

In conclusion, given the spatial distribution, habitat requirements, and observed and reported data, the number of animals coming in contact with the industry activity will be small by an order of magnitude to the Chukchi Sea walrus and the Chukchi and South Beaufort Sea polar bear populations. Therefore, even in the face of increased industry activity, the number of walrus and polar bear taken by this activity will be small and the effect on their respective populations negligible.

#### *Negligible Effects Determination*

Based upon our review of the nature, scope, and timing of the proposed oil and gas exploration activities and mitigation measures, and in consideration of the best available scientific information, it is our determination that the proposed activities will have a negligible impact on Pacific walrus and on polar bears. Factors considered in our negligible effects determination include:

1. *The behavior and distribution of walrus and polar bears at low densities utilizing areas that overlap with Industry is expected to limit the amount of interactions between walrus, polar bears, and Industry.* The distribution and habitat use patterns of walrus and polar bears in conjunction with the likely area of Industrial activity results in a small portion of the population in the area of operations and, therefore, likely to be affected. As discussed in the section "Biological Information" (see Pacific Walrus section), walrus are expected to be closely associated with ice and land haulouts during the operating season. Only small numbers of walrus are likely to be found in open water habitats where offshore exploration activities will occur. In 2007, up to 100,000 walrus were observed on haul-outs on the Chukotka coastline (where the vast majority of animals were females and calves) and approximately 2,000 to 5,000 walrus were observed at haul-outs on the Alaska Chukchi Sea coast, as well as the annual counts of approximately 5,000 walrus in Bristol Bay. These areas are outside of the Chukchi Sea Lease Sale area. In addition, the primary industrial activities that may affect walrus will occur outside the walrus breeding

season. Animals in the area of operations will either be traveling through the area or feeding.

In the open water season, polar bears are closely associated with pack-ice and are unlikely to interact with open-water industrial activities for the same reasons discussed in the Small Numbers Determination. Likewise, polar bears from the CS and SBS populations are widely distributed at extremely low densities and range outside of the geographic region of these regulations.

2. *The predicted effects of proposed activities on walrus and polar bears will be nonlethal, temporary passive takes of animals.* The documented impacts of previous Industry activities on walrus and polar bears, taking into consideration cumulative effects, provides direct information that the types of activities analyzed for this rule will have minimal effects and will be short-term, temporary behavioral changes. The Service predicts the effects of industry activities on walrus and polar bears will have a low frequency of occurrence, the effects will be sporadic and of short duration. Additionally, effects will involve very passive forms of take. This passive displacement will be limited to small numbers of walrus and polar bears. Displacement will not result in more than negligible effects because habitats of similar values are not limited to the area of activity and are abundantly available within the region.

A description of Industry impacts in 2006, in the Chukchi Sea, where the majority of the proposed activities will occur, showcase the number and type of impacts that will likely occur during the regulatory period. In 2006, vessel based monitors reported 1,186 walrus sightings during Industry seismic activity. Three hundred eighteen of the walrus sighted exhibited some form of behavioral response to the vessels, primarily dispersal or diving. Again, other than a short-term change in behavior, no negative effects were noted and the numbers of animals demonstrating a change in behavior was small in comparison to those observed in the area.

During the same time, polar bears documented during Industry seismic surveys in the Chukchi Sea were observed walking on ice and swimming. Bears reacted to a vessel by distancing themselves from the vessel. In addition, polar bear reactions recorded during a research marine geophysical survey in 2006 documented that bears exhibited minor reactions to helicopter or vessel traffic, suggesting that disturbances from seismic operations can be short-term and limited to minor changes in

behavior. Likewise, in the terrestrial environment, bears observed near a pad at the Intrepid project in 2007, expressed minimal behavioral changes where they altered direction while being observed by a bear monitor.

3. *The footprint of authorized projects is expected to be small relative to the range of polar bear and walrus populations.* A limited area of activity will reduce the potential to exposure of animals to Industry activities and limit potential interactions of those animals using the area, such as walruses feeding in the area or polar bears or walruses moving through the area.

4. *Mitigation measures will limit potential effects of industry activities.* As described in the Small Numbers Determination, holders of an LOA will be required to adopt monitoring requirements and mitigation measures designed to reduce potential impacts of their operations on walruses and polar bears. Seasonal restrictions, monitoring programs required to inform operators of the presence of marine mammals and sea ice incursions, den detection surveys for polar bears, and adaptive management responses based on real-time monitoring information (described in these regulations) will be used to avoid or minimize interactions with walruses and polar bears; limiting Industry effects on these animals.

5. *The potential impacts of climate change, such as a decline in sea ice, for the duration of the regulations (2008–2012) has the potential to result in a redistribution of walruses and polar bears away from the geographic region and during the season of Industry activity.* Decline in sea ice is likely to result in significant impacts to polar bear and walrus populations in the future. Recent trends in the Chukchi Sea have resulted in seasonal sea-ice retreat off the continental shelf and over deep Arctic Ocean waters, presenting significant adaptive challenges to walruses in the region. Reasonably foreseeable impacts to walruses as a result of diminishing sea ice cover include: shifts in range and abundance; increased reliance on coastal haul-outs; and increased mortality associated with predation and disturbances events at coastal haul-outs. Although declining sea ice and its causes are pressing conservation issues for ice dependent species, such as polar bears and walruses, activities proposed by Industry and addressed in this five-year rule will not adversely impact the survival of these species as the likely response to near-term climate-driven change (retreat of sea ice) will result in the species utilizing areas (such as coastal haul-outs by walrus and the edge

of the ice shelf by polar bears) that are outside the proposed areas of Industrial activity and during the season (open-water) when the majority of activities will be conducted. As a result of continued ice retreat due to climate change, we expect fewer animals in the area of proposed Industry activities during the open water season.

We therefore conclude that any incidental take reasonably likely to or reasonably expected to occur as a result of carrying out any of the activities authorized under these regulations will have no more than a negligible effect on Pacific walruses and polar bears utilizing the Chukchi Sea region, and we do not expect any resulting disturbances to negatively impact the rates of recruitment or survival for the Pacific walrus and polar bear populations. These regulations do not authorize lethal take, and we do not anticipate any lethal take will occur.

### Findings

We make the following findings regarding this

#### *Small Numbers*

The Service finds that any incidental take reasonably likely to result from the effects of the proposed activities, as mitigated through this regulatory process, will be limited to small numbers of walruses and polar bears. In making this finding the Service developed a “small numbers” analysis based on: (a) The seasonal distributions and habitat use patterns of walruses and polar bears in the Chukchi Sea; (b) the timing, scale, and habitats associated with the proposed activities and the limited potential area of impact in open water habitats, and (c) monitoring requirements and mitigation measures designed to limit interactions with, and impacts to, polar bears and walruses. We concluded that only a small proportion of the Pacific walrus population or the Chukchi Sea and Southern Beaufort Sea polar bear populations will likely be impacted by any individual project because: (1) The proportion of walruses and polar bears in the United States portion of the Chukchi Sea region during the open water season when ice is not present is small compared to numbers of walruses and polar bears found outside the region; (2) within the specified geographical region, only small numbers of walruses or polar bears will occur in the open-water habitat where marine Industry activities will occur; (3) within the specified geographical region, the footprint of marine operations is a small percentage of the open water habitat in the region; (4) based on monitoring

information, only a portion of the animals in the vicinity of the industrial activities are likely to be affected and the behavioral responses are expected to be nonlethal, minor, short-term behavioral changes; and (5) the required monitoring requirements and mitigation measures described below will further reduce impacts. Therefore, the number of animals likely to be affected is small, because: (1) A small portion of the Pacific walrus population or the Chukchi Sea and Southern Beaufort Sea polar bear populations will be present in the area of Industry activities, (2) of that portion, a small percentage will come in contact with Industry activities, and (3) the response by those animals will likely be minimal changes in behavior.

#### *Negligible Effects*

The Service finds that any incidental take reasonably likely to result from the effects of oil and gas related exploration activities during the period of the rule, in the Chukchi Sea and adjacent western coast of Alaska will have no more than a negligible effect on the rates of recruitment and survival of polar bears and Pacific walruses in the Chukchi Sea Region. In making this finding, we considered the best scientific information available on: (1) The biological and behavioral characteristics of the species, which is expected to limit the amount of interactions between walruses, polar bears, and Industry; (2) the nature of proposed oil and gas industry activities; (3) the potential effects of Industry activities on the species; (4) the documented impacts of Industry activities on the species, where nonlethal, temporary, passive takes of animals occur, taking into consideration cumulative effects; (5) potential impacts of declining sea ice due to climate change, where both walruses and polar bears can potentially be redistributed to locations outside the areas of Industry activity due to their fidelity to sea ice; (6) mitigation measures that will minimize Industry impacts through adaptive management; and (7) other data provided by monitoring programs in the Beaufort Sea (1993–2006) and historically in the Chukchi Sea (1991–1996).

Our finding of “negligible impact” applies to non-lethal incidental take associated with proposed oil and gas exploration activities as mitigated through the regulatory process. The regulations establish monitoring and reporting requirements to evaluate the potential impacts of authorized activities, as well as mitigation measures designed to minimize

interactions with and impacts to walrus and polar bears. We will evaluate each request for an LOA based on the specific activity and the specific geographic location where the proposed activities will occur to ensure that the level of activity and potential take is consistent with our finding of negligible impact. Depending on the results of the evaluation, we may grant the authorization, add further operating restrictions, or deny the authorization. For example, restrictions in potential denning areas will be applied on a case-by-case basis after assessing each LOA request and could require pre-activity surveys (e.g., aerial surveys, FLIR surveys, and/or polar bear scent-trained dogs) to determine the presence or absence of denning activity and, in known denning areas, may require enhanced monitoring or flight restrictions, such as minimum flight elevations. Monitoring requirements and operating restrictions associated with offshore drilling operations will include requirements for ice-scouting, surveys for walrus and polar bears in the vicinity of active drilling operations, requirements for marine mammal observers onboard drill ships and ice breakers, and operational restrictions near polar bear and walrus aggregations.

#### *Impact on Subsistence Take*

Based on the best scientific information available and the results of harvest data, including affected villages, the number of animals harvested, the season of the harvests, and the location of hunting areas, we find that the effects of the proposed exploration activities in the Chukchi Sea region would not have an unmitigable adverse impact on the availability of walrus and polar bears for taking for subsistence uses during the period of the rule. In making this finding, we considered the following: (1) Historical data regarding the timing and location of harvests; (2) effectiveness of mitigation measures stipulated by Service regulations for obtaining an LOA at 50 CFR 18.118, which includes requirements for community consultations and POCs, as appropriate, between the applicants and affected Native communities; (3) MMS-issued operational permits; and (4) anticipated 5-year effects of Industry proposed activities on subsistence hunting.

Applicants must use methods and conduct activities identified in their LOAs in a manner that minimizes to the greatest extent practicable adverse impacts on Pacific walrus and polar bears, their habitat, and on the availability of these marine mammals for subsistence uses. Prior to receipt of

an LOA, applicants will be required to consult with the Eskimo Walrus Commission, the Alaska Nanuq Commission, and the communities of Point Hope, Point Lay, Wainwright, and Barrow through a POC to discuss potential conflicts with subsistence walrus and polar bear hunting caused by the location, timing, and methods of proposed operations. Documentation of all consultations must be included in LOA applications. Documentation must include meeting minutes, a summary of any concerns identified by community members, and the applicant's responses to identified concerns. If community concerns suggest that the proposed activities could have an adverse impact on the subsistence uses of these species, conflict avoidance issues must be addressed through a POC.

Where prescribed, holders of LOAs will be required to have a POC on file with the Service and on-site. The POC must address how applicants will work with potentially affected Native communities and what actions will be taken to avoid interference with subsistence hunting opportunities for walrus and polar bears. The POC must include:

1. A description of the procedures by which the holder of the LOA will work and consult with potentially affected subsistence hunters.

2. A description of specific measures that have been or will be taken to avoid or minimize interference with subsistence hunting of walrus and polar bears, and to ensure continued availability of the species for subsistence use.

The Service will review the POC to ensure any potential adverse effects on the availability of the animals are minimized. The Service will reject POCs if they do not provide adequate safeguards to ensure that marine mammals will remain available for subsistence use.

If there is evidence during the 5-year period of the regulations that oil and gas activities are affecting the availability of walrus or polar bears for take for subsistence uses, we will reevaluate our findings regarding permissible limits of take and the measures required to ensure continued subsistence hunting opportunities.

#### *Monitoring and Reporting*

The purpose of monitoring requirements is to assess the effects of industrial activities on walrus and polar bears to ensure that take is consistent with that anticipated in the negligible-impact and subsistence use analyses, and to detect any unanticipated effects on the species.

Holders of LOAs will be required to have an approved, site-specific marine mammal monitoring and mitigation plan on file with the Service and on site. Marine mammal monitoring and mitigation plans must be designed to enumerate the number of walrus and polar bears encountered during authorized activities, estimate the number of incidental takes that occurred during authorized activities, and evaluate the effectiveness of prescribed mitigation measures.

Monitoring activities are summarized and reported in a formal report each year. The applicant must submit an annual monitoring and reporting plan at least 90 days prior to the initiation of a proposed activity, and the applicant must submit a final monitoring report to us no later than 90 days after the completion of the activity. We base each year's monitoring objective on the previous year's monitoring results.

We require an approved plan for monitoring and reporting the effects of oil and gas industry exploration activities on walrus and polar bears prior to issuance of an LOA. We require approval of the monitoring results for continued authorization under the LOA.

#### **Discussion of Comments on the Proposed Rule**

The proposed rule, which was published in the **Federal Register** (72 FR 30670) on June 1, 2007, included a request for public comments. The closing date for the comment period was June 30, 2007. We received 4,360 comments.

We received numerous comments regarding the Incidental Harassment Authorization (IHA) process. Those comments are beyond the scope of this rule and consequently are not addressed in this rule. However, we reviewed and considered the comments submitted as a part of the IHA process. Prior to issuance of any IHAs, we concluded that no additional changes were necessary in our finding that the impacts of seismic exploration conducted during the 2007 Chukchi Sea open-water were negligible and would not have unmitigable adverse impacts on the availability of the species or stock for taking for subsistence uses. With respect to this rule, the following issues were raised:

##### 1. MMPA and NEPA

*Comment:* The Service should conduct a more thorough analysis that explicitly considers the: (1) Direct effects on walrus and polar bear populations; (2) potential or likely effects of other oil and gas activities, climate change, and other human-

induced factors; and (3) cumulative effects of all of these activities over time.

*Response:* The Service has analyzed oil and gas exploratory activities taking into account risk factors to polar bears and walrus such as potential habitat loss, harassment, lethal take, oil spills, contaminants, and effects on prey species that are directly related to Industry within the geographic region. The Service analysis of oil and gas activities for this rulemaking encapsulates all of the known oil and gas industry's activities that will occur in the geographic region during the 5-year regulation period. If additional activities are proposed that were not included in the Industry petition or otherwise known at this time, the Service will evaluate the potential impacts associated with those projects to determine whether a given project lies within the scope of the analysis for these regulations.

The Service agrees that climate change is a likely factor in the decline of sea ice, which is a threat to the polar bear. Sea ice decline also has the potential to impact walrus populations. We addressed this issue for polar bears in the decision to list the polar bear as threatened under the ESA (73 FR 28212; May 15, 2008). We expanded our analysis in the final rule to include more detail on the decline of sea ice associated with climate change and other factors. We have concluded that the activities proposed by Industry and addressed in this rule will have limited impact on the survival of the species.

Recent trends in the Chukchi Sea have resulted in seasonal sea-ice retreat off the continental shelf and over deep Arctic Ocean waters, presenting significant adaptive challenges to walrus in the region. Reasonably foreseeable impacts to walrus as a result of diminishing sea ice cover include: Shifts in range and abundance; increased reliance on coastal haulouts; and increased mortality associated with predation and disturbances at coastal haulouts. Secondary effects on animal health and condition resulting from reductions in suitable foraging habitat may also influence survivorship and productivity. Future studies investigating walrus distributions, population status and trends, and habitat use patterns in the Chukchi Sea are important for responding to walrus conservation and management issues associated with environmental and habitat changes.

The Service is currently involved in the collection of baseline data to help us understand how the changing Arctic environment will be manifested in polar

bear and walrus stocks in Alaska. As we gain a better understanding of climate change and effects on these resources, we will incorporate the information in future actions. Ongoing studies include those led by the USGS Alaska Science Center, in cooperation with the Service, to examine polar bear habitat use, reproduction, and survival relative to a changing sea-ice environment. Specific objectives of the project include: Polar bear habitat availability and quality influenced by ongoing climate changes and the response by polar bears; the effects of polar bear responses to climate-induced changes to the sea-ice environment on body condition of adults, numbers and sizes of offspring, survival of offspring to weaning (recruitment); and population age structure. The Service and USGS are also conducting multi-year studies of the walrus population to estimate population size and investigate habitat use patterns.

Our analysis does consider cumulative effects of oil and gas activities described in Industry's petition. These occur in the area over the 5-year time period covered by these regulations. Cumulative impacts of oil and gas activities have been assessed, in part, through the information we have gained in prior Industry monitoring reports from the Beaufort Sea, which are required for each operator under the authorizations. Information from these reports provides a history of past Industry effects and trends on walrus and polar bears from interactions with oil and gas activities. In addition, information used in our cumulative effects assessment includes research publications and data, traditional knowledge of polar bear and walrus habitat use in the area, anecdotal observations, and professional judgment.

Monitoring results indicate little short-term impact on polar bears or Pacific walrus, given these types of activities. We evaluated the sum total of both subtle and acute impacts likely to occur from industrial activity and, using this information, we determined that all direct and indirect effects, including cumulative effects, of industrial activities during the 5-year regulatory period would not adversely affect the species through effects on rates of recruitment or survival. Based on past information, the level of interaction between Industry and polar bears and Pacific walrus has been minimal. Additional information, such as subsistence harvest levels and incidental observations of polar bears near shore, provide evidence that these

populations have not been adversely affected by oil and gas activities.

*Comment:* The environmental assessment (EA) provides little analysis of secondary or cumulative impacts of past, present, and reasonably foreseeable actions on walrus and polar bear populations. Consequently, there is no basis for concluding a negligible impact for walrus and polar bear, nor a conclusion that there will be no unmitigable adverse impact on subsistence use.

*Response:* Cumulative impacts have been analyzed in the context of making a finding that the total takings during the 5-year period of the rule will have a negligible impact on Pacific walrus and polar bears and will not have an unmitigable adverse impact on the availability of walrus and polar bears for subsistence uses. The Service further concluded that any potential impacts to polar bears and walrus as a result of the proposed Industry activities will be minimized with regulations in place because the Service will have increased ability to work directly with the Industry operators through implementation of monitoring and mitigation measures. It is important to note that the incidental take regulations are not valid for an indefinite length of time. They expire in 5 years. Consequently, our analyses are limited to anticipated impacts of all known activities that will occur in the geographic region during the 5-year regulation period. It should also be noted that the Service can withdraw or suspend the regulations at any time during the 5-year period if the Service concludes that new information or events create more than a negligible impact on polar bear or walrus populations or an unmitigable adverse impact on subsistence use. We have revised the EA to further clarify these points.

*Comment:* The Service violates NEPA by failing to prepare a full EIS for the proposed regulations and take authorizations. Under NEPA, an EIS must be prepared if "substantial questions are raised as to whether a project may cause significant degradation of some human environmental factor."

*Response:* Section 1501.4(b) of NEPA, found at 40 CFR Chapter V, notes that, in determining whether to prepare an EIS, a Federal agency may prepare an EA and, based on the EA document, make a determination whether to prepare an EIS. The Department of the Interior's policy and procedures for compliance with NEPA (69 FR 10866) further affirm that the purpose of an EA is to allow the responsible official to

determine whether to prepare an EIS or a "Finding of No Significant Impact" (FONSI). The Service analyzed the proposed activity, i.e., issuance of implementing regulations, in accordance with the criteria of NEPA and made an initial determination that it does not constitute a major Federal action significantly affecting the quality of the human environment. Potential impacts of these regulations on the species and the environment were analyzed in the EA rather than the potential impacts of the oil and gas activities. There appeared to be some confusion between the potential impacts of these regulations and the potential impacts of the activities themselves. It should be noted that the Service does not authorize the actual Industry activities. Those activities are authorized by other State and Federal agencies, and could likely occur even without incidental take authority. These regulations provide the Service with a means of interacting with Industry to insure that the impacts to polar bears and Pacific walruses are minimized. Furthermore, the analysis in the EA found that the proposed activity would have a negligible impact on polar bears and Pacific walruses and would not have an unmitigable adverse impact on subsistence users, thereby resulting in a FONSI. Therefore, in accordance with NEPA, an EIS is not required.

*Comment:* The EA is a deficient NEPA document because: (1) The Service needs to conduct more thorough analysis of various alternatives, not just the issuance of the 5-year take regulations and the no-action alternative; (2) the Service has failed to identify unique habitats, including national wildlife refuge lands, sensitive onshore areas, and private lands; (3) the EA is not formatted correctly; and (4) the EA fails to address the likely and potential impacts of oil spills on polar bears and walrus.

*Response:* Section 102(2)(E) of NEPA requires a Federal agency to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources." In addition to the action and no action alternatives, the Service considered other possible alternatives, but determined these were neither appropriate nor feasible. These included (1) Separating Industry operations by the type of activity; (2) separating Industry operations by the location of activities; (3) separating Industry operations by the timing of the activity; (4) promulgating separate rules for each type of activity; and (5) initiating an

IHA program similar to the NMFS program.

In determining the impact of incidental taking, the Service must evaluate the "total taking" expected from the specified activity in a specific geographic area. The estimate of total taking involved the accumulation of impacts from all anticipated activities to be covered by the specific regulations. Our analysis indicated that separating Industry operations by various means was not a viable alternative, as we cannot separate or exempt specific activities in order to make a negligible finding. In addition, during the 2006 and 2007 open-water seasons, the Service authorized IHAs for oil and gas development activities in the Chukchi Sea as a means to establish temporary incidental take authorization for a limited number of projects occurring in the area. This was a new process for the Service and, subsequently, the Service concluded that the IHA process did not provide the comprehensive coverage necessary due to the types and numbers of onshore and offshore oil and gas activities that may encounter walruses and polar bears during the next 5 years. Therefore, further analysis of these alternatives was not appropriate.

To reduce paperwork, NEPA regulations at 40 CFR 1500.4(j) encourage agencies to incorporate by reference. In describing the physical environment of the geographic area, the Service EA refers the reader to the Programmatic EA prepared by the MMS. The Service EA describes the specific biological environment of the walrus and the polar bear within the identified geographic area. To the best extent possible we have described sensitive onshore areas for walruses and polar bears in the geographic region within the EA and the regulations.

The Service acknowledges that the geographic region contains a multitude of lands that are managed under various owners; however, the use of unique lands will be dictated by those regulatory agencies with authority to permit the Industry activities. Once an Industry project has been permitted by the responsible agency, the Service will evaluate the project in regard to polar bears and walruses through a requested incidental take authorization, i.e., the LOA process provided by these regulations.

Although NEPA outlines a format for writing an EIS, no formal format is required for EAs. NEPA regulations at 40 CFR 1508.9 state that an EA shall include a brief discussion of the need for the proposal, alternatives as required by section 102(2)(E), the environment impacts of the proposed action and the

alternatives, and a listing of agencies and persons consulted. The Service EA prepared for the promulgation of these incidental take regulations provides a discussion for each of these items. The DOI policy and procedures for compliance with NEPA (69 FR 10866) further states that an EA may be "prepared in any format useful to facilitate planning, decision-making, and appropriate public participation." The EA, as prepared by the Service, serves these purposes and complies with all NEPA requirements.

The potential of oil spills, both large and small, is discussed under section 3.4 of the EA for both Pacific walruses and polar bears in their subsections under this section. The EA further contains a discussion of potential impacts to prey species of both walruses and polar bears. The information presented in these sections of the EA was considered in the Service findings for these regulations.

*Comment:* Certain geophysical survey operations, such as aeromagnetic surveys, were not analyzed in the proposed rule or the EA.

*Response:* All activities described within Industry's petitions were analyzed for these regulations. Those activities thought to have the potential to impact walruses or polar bears will be prescribed additional mitigation measures.

*Comment:* Environmental consequences of the activities of the various foreign-flagged vessels scheduled to participate in the proposed activities were ignored. The Service cannot authorize take in the Alaskan Chukchi Sea while ignoring related take that will occur elsewhere in the high seas.

*Response:* This suggestion goes beyond the scope of this rule and beyond the petitioner's request. The regulations identify the geographic area covered by this request as the continental shelf of the Arctic Ocean adjacent to western Alaska, including the waters (State of Alaska and OCS waters) and seabed of the Chukchi Sea, as well as the terrestrial coastal land 25 miles inland between the western boundary of the south National Petroleum Reserve—Alaska (NPR-A) near Icy Cape and the north-south line from Point Barrow (72 FR 30672). This identified geographical region is the subject area for these regulations, and we concluded that these boundaries are appropriate for analyzing the potential effects of the described oil and gas activities on polar bears and Pacific walruses occurring within the Chukchi Sea.

*Comment:* The areas described are too large to be defined as a “specified geographical region,” and it is unlawful to do so.

*Response:* Congress did not define “specified geographical region” when the MMPA was amended in 1981 to authorize the Secretary to allow the taking of marine mammals incidental to specified activities other than commercial fishing operations. Therefore, the Service provided a definition in the regulations at 50 CFR 18.27, which states “*specified geographical region* means an area within which a specified activity is conducted and which has similar biogeographic characteristics.” Although the use of such a broad definition has come into question, it has yet to be further defined. Instead, the agencies are given the latitude to determine what makes up the specific geographic region for the specific action being considered. The Service believes that the Chukchi Sea lease sale area as provided in the preamble of the proposed rule meets the definition of specified geographic region as currently defined and interpreted by the Service.

*Comment:* The Service cannot claim the lack of available information on the status of walrus and polar bear justifies its decisions, as determined in *Brower v. Evans*, 257 F.3d 1058, 1071 (9th Cir. 2001).

*Response:* In *Brower v. Evans*, the Court found that the NMFS, when adopting a regulation to ease the dolphin-safe labeling standard for tuna, had erred by: (1) engaging in rulemaking before conducting studies on dolphin that had been mandated by Congress as a prerequisite to the decision-making process; and (2) failing to consider the best available scientific evidence, which contradicted the agency’s conclusion that tuna caught in purse seines could be labeled as “dolphin safe.” 257 F.3d 1058, 1068–71 (9th Cir. 2001). The Court also indicated that the agency could not use insufficient evidence as a reason for ignoring a statutory mandate to determine whether or not the use of the nets was impacting dolphin stocks. *Id.* at 1071.

None of these situations apply here. The applicable statutory mandate is Section 101(a)(5)(A) of the MMPA, which allows for incidental, but not intentional, take of small numbers of marine mammals, provided that the total take will have a negligible impact on the population, and will not affect the availability of the species for subsistence uses. The Service put significant effort into insuring that it was using the best available scientific evidence before making affirmative

determinations that the incidental take under this rule will have a negligible impact on polar bear and walrus populations in the Chukchi Sea and that it will not affect subsistence uses. In addition, the mitigation measures required under the rule further reduce the potential for negative impacts on population or subsistence. Although the Service is actively engaged in ongoing studies on climate change, polar bears, and walrus in the Arctic, none of these studies have been mandated by Congress as a prerequisite to this rulemaking.

*Comment:* The Service cannot lawfully authorize some take (i.e., harassment) if other unauthorized take (i.e., serious injury or mortality) may also occur, as determined in *Kokechik Fishermen’s Association v. Secretary of Commerce*, 839 F.2d 795, 801–02 (D.C. Cir. 1988).

*Response:* We are not anticipating that any unauthorized takes, such as serious injury or mortality, will result from the implementation of this rule.

*Comment:* The regulations would allow for unlimited harassment of polar bears and Pacific walrus by oil companies in the Chukchi Sea.

*Response:* We disagree. Authorized activities are limited by the operating restrictions set forth in this rule. Section 101(a)(5)(A) of the MMPA provides for the incidental, but not intentional take of small numbers of marine mammals, provided that the total take will have a negligible impact on the population, and will not affect the availability of the species for subsistence users. The Service believes that potential adverse effects to walrus, polar bears, and the subsistence use of these resources can be greatly reduced through the operating restrictions, monitoring programs, and adaptive management responses set forth in this rule.

*Comment:* We should be permanently protecting the Chukchi Sea, not opening it up to oil leasing.

*Response:* This comment is outside the scope of the analysis for the 5-year incidental take regulations. The MMPA allows for the Secretary to authorize the incidental taking of marine mammals during the course of a specified activity conducted in a specified geographical region upon making certain findings; however, authorization to conduct the activity, in this case oil and gas exploration, falls under the agency responsible for permitting that activity, in this case, the MMS.

*Comment:* Proposed regulations give a blank check to the oil and gas Industry to operate in these species’ most sensitive habitats.

*Response:* We disagree. Section 101(a)(5)(A) of the MMPA provides a mechanism for the Secretary to authorize the incidental, but not intentional taking of marine mammals by citizens of the United States while engaged in a specified activity within a specified geographical region, provided that the Secretary finds the total expected incidental taking will have a negligible impact on the species and will not have an unmitigable adverse impact on the availability of such species for subsistence purposes. Such findings have been made based on the best available information.

The Secretary then prescribes regulations that set forth permissible methods of taking and other means of effecting the least practicable adverse impact on the species, its habitat, and its availability for subsistence purposes. Further, the Secretary sets forth monitoring and reporting requirements, which allow the Service to measure and assess impacts and their potential effect on the species or subsistence use. The reported monitoring information allows the Service to adjust future actions to better manage Industry activities and further limit potential impacts on Service trust species. These regulations emulate the intent of the MMPA by providing a process whereby stipulations will be imposed on Industry through issuance of the LOAs to ensure that potential impacts to polar bear and walrus remain negligible and mitigable. For example, should polar bears be encountered during Industry activities, the LOA outlines the appropriate measures that must be followed to safeguard the lives of both humans and bears and, thereby, minimize adverse impacts.

In addition, Section 101(5)(B) authorizes the Secretary to withdraw or suspend an authorization if the method of taking, monitoring, or reporting is not being complied with, or if the take allowed under the regulations is having, or may have, more than a negligible impact on the species or stock of concern. Again, the monitoring and reporting requirements provide the instrument for the Secretary to make such a determination.

## 2. Specificity of Action

*Comment:* The Service does not adequately specify the locations, activities, and mitigation measures to be covered by the take authorization. Deferring specific project descriptions until a later date is inappropriate and a violation of the MMPA and NEPA. Such speculation makes it impossible to do a NEPA analysis.

*Response:* We disagree. The intent of these regulations is to provide petitioners an overall “umbrella” set of guidelines which, when followed, allow certain oil and gas exploration activities to proceed after the Service has assessed whether such activities will potentially have an unmitigable impact on subsistence use or more than a negligible impact on polar bears and walrus. To that end, the Service described the geographic region where the proposed activities would occur, the four types of activities to be authorized, the projected scale of each activity, and the anticipated impacts that could occur in the specified time period of 2007 through 2012. The regulations acknowledge that in the planning phases, most projects contain some element of uncertainty. Consequently, in addition to requiring certain mitigation measures common to all projects, a separate LOA will be required for each specific survey, seismic, or drilling activity. This allows each specific LOA request to be evaluated for additional mitigation methods over and above those required in the umbrella guidelines. The regulations specify those mitigation measures that will be required for all oil and gas activities and those that may be required, depending on the type or location of the activity; for these, the regulations describe under what conditions that type of mitigation measure will be required.

This type of authorization process, i.e., provision of a general regulatory framework for certain activities with a secondary process authorizing specific individual projects under the framework, is not uncommon in NEPA analyses. Examples include: the COE Nationwide Permit Program, which authorizes over 40 different types of general projects across the nation; various COE general permits for various activities in all States; and programmatic EAs and EISs completed by various agencies for authorizing certain types of work on Federal lands, and other examples. If the framework provides enough information so that generalized project descriptions, locations, alternatives, and methods to avoid, minimize, and mitigate potential adverse impacts can be meaningfully addressed, the analyses can proceed. Similar to what is being proposed here, most general permits or authorizations include a caveat that specific project plans must be submitted prior to conducting work and, at that time, more specific stipulations may be required.

*Comment:* The proposed regulations require MMOs to report the latitude and longitude of walrus or polar bear

observations. In most instances, this information is proprietary, and a confidentiality agreement would be needed. In addition, even with a signed confidentiality agreement, many clients may not release this information until after the conclusion of the lease sale.

*Response:* We understand this concern and have provided clarification that the latitude and longitude of walrus or polar bear observations from the seismic vessel must be submitted after lease sales have occurred. Lease Sale 193 in the Chukchi Sea region occurred in February 2008, prior to the next anticipated exploration season. Therefore, we do not anticipate any further location-specific proprietary issues and will expect full and complete reporting of project locations.

*Comment:* The **Federal Register** notice and documents cited therein are inconsistent. The activities being proposed by Industry differ from the activities being authorized by the Service—multiple petitions and addendums from Industry appear inconsistent.

*Response:* While we acknowledge that requests contained in the petitions and addendums may not correspond exactly with the specified activities described in the Service’s **Federal Register** notice, the notice as written correctly describes the scope of work that was analyzed and would be authorized by this action. In addition, activities conducted in the Beaufort Sea portion of the North Slope are authorized under regulations previously analyzed and published on August 2, 2006 (71 FR 43926), for that specified geographic area.

### 3. Mitigation

*Comment:* Final rulemaking should be deferred until the Service has specifically identified the mitigation measures that would be applied through the LOA process so that the public is given the opportunity to evaluate the efficacy of those measures.

*Response:* The Service has disclosed a suite of mitigation measures that will be used to mitigate incidental take of polar bears and walrus. The Service believes that the mitigation and monitoring measures identified in the rule encompass the overall suite of measures that will be necessary to ensure negligible impact on polar bears and walrus and to ensure that the activities will not have an unmitigable adverse impact on the availability of these species for subsistence uses. When a request for an LOA is made, the Service will determine which of the mitigation and monitoring measures will be necessary for the particular activity based on the details provided in

the request. Through the LOA process the Service will examine the siting and timing of specific activities to determine the potential interactions with, and impacts to, polar bears and walrus and will use this information to prescribe the appropriate mitigation measures to ensure the least practicable impact on polar bears and walrus and subsistence use of these species. In addition, the Service will review monitoring results to examine the responses of polar bears and walrus to various exploration activities and adjust mitigation measures as necessary. We will also consider adjusting monitoring methodologies and mitigation measures as new technologies become available and practical.

*Comment:* The vessel and aircraft exclusion zones for walrus and polar bears on ice or land are inadequate mitigation measures to protect animals from disturbances. It was also noted that animals in the water are not afforded the same protection and that these measures would not afford protection to denning polar bears.

*Response:* The protective measures placed around walrus on land or ice are intended to prevent mortality and level A harassment (potential to injure) resulting from panic responses and intra-specific trauma (e.g., trampling injuries by large groups of animals). These standards are based upon the best available information concerning walrus and polar bear flight responses to vessels and aircrafts and are consistent with current guidelines in other parts of Alaska. The potential for intra-specific trauma is greatly reduced when animals are encountered in the water. Although these mitigation measures are also expected to help reduce incidences of level B (potential to disturb) harassment, they are not intended to completely eliminate the possibility of disturbances. Required monitoring during operations is expected to contribute data regarding flight responses, which will be used to evaluate the efficacy of these buffer areas in future impact assessments. Monitoring and mitigation measures to be specified through the LOA process for activities occurring in potential polar bear habitat include surveys for active polar dens and the establishment of 1-mile buffer areas around known or suspected dens. This is an established conservative distance that the Service has implemented with success in the Beaufort Sea to limit the potential for disturbance to denning polar bears.

*Comment:* The Service concludes that site-specific monitoring programs are “expected to reduce the potential effects of exploration activities on walrus,

polar bears, and the subsistence use of these resources.” (72 FR 30675; June 1, 2007). Monitoring is not mitigation—documenting the impacts of industrial activities on polar bears and walrus is not the same as minimizing the effects of such activities.

*Response:* The commenter is correct that site-specific monitoring alone does not necessarily mitigate potential adverse impacts. However, real-time monitoring does provide a basis for adaptive mitigation responses. For example, seismic vessels will be required to staff trained marine mammal observers who have the authority to modify or stop seismic operations under specified circumstances. Clarifying language has been added to the final rule indicating that site-specific monitoring programs are expected to provide the basis for initiating adaptive mitigation measures to reduce potential effects of exploration activities on walruses, polar bears, and subsistence use of these resources.

*Comment:* The Service does not impose legally required mitigation measures necessary to achieve the MMPA’s statutory mandates.

*Response:* The Service has required mitigation measures that will be imposed on Industry activities. These can be found at Section 18.118 of this rule. These mitigation measures will be effective in addressing the commenters concerns.

*Comment:* The Service’s mitigation and monitoring procedures should follow NMFS’ previously authorized IHAs for marine mammals in the Chukchi Sea.

*Response:* We coordinate closely with NMFS and strive to standardize monitoring programs and mitigation measures as much as possible. However, some of the necessary mitigation measures are species-specific (e.g., walruses aggregate in large groups and polar bears use the terrestrial environment) and require distinctive and, sometimes, innovative ways to mitigate impacts specific to the needs and behaviors of that species.

*Comment:* The MMPA explicitly requires that the prescribed regulations include other “means of effecting the least practicable adverse impact” on a species, stock, or habitat. Regulations must explain why measures that would reduce the impact on a species were not chosen (i.e., why they were not “practicable”).

*Response:* Although the MMPA does provide a mechanism for the Secretary to prescribe regulations that include “other means of effecting the least practicable adverse impact” on a species, stock, and its habitat, the

regulations do not require the Secretary to provide an explanation for measures that were determined to be impracticable. In fact, all measures that are practicable and would provide a means to minimize adverse impacts to the species as a result of the proposed activities should be included in the prescribed regulations. The Service believes it has included a full suite of means to minimize impacts to Pacific walruses and polar bears that could result from oil and gas exploration activities. As mentioned above, the regulations describe which mitigation measures are always required for certain activities and which can be selectively used to mitigate level B harassment of polar bears and walruses. There is a certain amount of uncertainty within each proposed activity. The Service adaptively manages projects case-by-case because certain mitigation measures may not be appropriate in every situation. This adaptability allows us to implement “means of effecting the least practicable impact.”

*Comment:* The Service should require that monitoring reports and information be submitted in the format of GIS data layers and computerized data that can easily be linked to geographic features.

*Response:* The Service will consider this recommendation. Currently we are working with Industry to improve the collection and management of monitoring information and data as it becomes available from the operators. Depending on the type of monitoring information requested, GIS applications are a form of data reporting that is being considered.

*Comment:* The Service requirement to conduct aerial surveys in the Chukchi introduces too great a safety risk to workers. This should not be required. There are other monitoring techniques that can be just as effective.

*Response:* Holders of an LOA are required to monitor the potential impacts of their activities on walruses and polar bears and subsistence use of these resources. The responsibility of designing and implementing programs to achieve these monitoring objectives lies with the applicant seeking the exemption from the MMPA. The Service is willing to consider any monitoring protocols and methods that meet monitoring objectives.

*Comment:* Use of scent-trained dog surveys has not been adequately tested, and caution should be used in any statement about this technique. It is still in the ‘test phase’ and it should be referenced as such.

*Response:* Although the use of scent-trained dogs to locate polar bear dens on the North Slope of Alaska is a recent

development (2002), it has proven to be an effective mitigation tool that allows the Service to locate maternal dens with accuracy and limited disturbance. The technique of using scent-trained dogs to detect ringed seals and their lairs has been employed since the 1970s. This is an example of adaptive mitigation, where the Service uses other technologies and adapts them so they can be used to help limit the disturbance by Industry on Service trust species.

*Comment:* All practicable monitoring measures should be included to afford walrus and polar bear protection from sources of disturbance. Operations should be suspended if dead or injured walrus or polar bear are found, where any suspension should be in place until the Service has reviewed the situation to determine where further mortalities would occur.

*Response:* The Service believes that all practicable monitoring measures have been analyzed and incorporated into the monitoring programs. If additional techniques become available and are appropriate to gather information that allows the Service to assess impacts of Industry on walruses and polar bears, the Service will incorporate them into the monitoring program.

Past operating procedures allow the Service the flexibility of requiring a suspension of operation if animals are injured or killed as a possible result of Industry operations. This will continue through the duration of these regulations.

*Comment:* In accordance with the Paperwork Reduction Act, were all the reporting requirements identified in the regulations at Section 18.118 of the proposed rule (72 FR 30697–30700; June 1, 2007) subjected to OMB review and approval?

*Response:* Yes, the reporting requirements as outlined in Section 18.118 were included in the Service’s request to OMB for approval under the Paperwork Reduction Act. The Service’s Supporting Statement, which is part of the Information Collection Request, provides estimated burden hours and costs for the collection of this information, i.e., the initial application, requests for LOAs, the Onsite Monitoring and Observation Report, and the Final Monitoring Reports.

#### 4. Biological Information

*Comment:* A broad-based population monitoring and assessment program is needed to ensure these activities, in combination with other risk factors, are not individually or cumulatively having any population-level effects on polar

bear and walrus, or adversely affecting the availability of the animals for subsistence purposes.

*Response:* The Service agrees with this comment, in part. One basic purpose of monitoring polar bears and walruses in association with Industry is to establish baseline information on habitat use and encounters and to detect any unforeseen effects of Industry activities. We agree that a broad-based, long-term monitoring program is useful to refine our understanding of the impacts of oil and gas activities on polar bears, walruses, and their habitat over time, and to detect and measure changes in the status of the overall polar bear and walrus populations in the Chukchi Sea. However, a broad-based population monitoring plan as described by the commenter would need to incorporate research elements as well. When making our findings, the Service uses the best and most current information regarding polar bears and walruses. The integration of, and improvement in, research and monitoring programs are useful to assess potential effects to rates of recruitment and survival and the population parameters linked to assessing population-level impacts from oil and gas development.

Where information gaps are identified, the Service will work to address them. Monitoring and reporting results specified through the LOA process during authorized exploration activities are expected to contribute information concerning walrus and polar bear distributions and habitat use patterns within the Chukchi Sea Lease sale area. The Service is also in the process of analyzing the results of a joint U.S./Russia walrus population survey carried out in 2006, and is sponsoring research investigating the distribution and habitat use patterns of Pacific walruses in the Chukchi Sea. This information will be incorporated into the decision-making process and into subsequent NEPA analyses as it becomes available.

However, it should be noted that the EA analysis followed the Council for Environmental Quality's NEPA guidance regarding assessments where information is limited. The Service used the best information available in making its determination that the impacts from the specified activities will have a negligible impact on the affected species and stocks or subsistence use of these resources. Information from a variety of sources, including peer-reviewed scientific articles, unpublished data, past aerial survey results, harvest monitoring reports, as well as the results of previous oil and gas monitoring studies were considered in the analysis.

Although the present status and trends of polar bear and walrus populations in the Chukchi Sea are poorly known, there is no information available suggesting that previous oil and gas exploration activities in this region resulted in population-level effects on polar bears and walruses, or adversely affected the availability of the animals for subsistence purposes.

Nonetheless, monitoring provisions associated with these types of regulations were never intended as the sole means to determine whether the activities will have a negligible effect on polar bear or walrus populations. There is nothing in the MMPA that indicates that Industry is wholly responsible for conducting general population research. Thus, we have not required Industry to conduct such population research and instead require monitoring of the observed effect of the activity on polar bear and walrus. We are constantly accumulating information, such as reviewing elements of existing and future research and monitoring plans that will improve our ability to detect and measure changes in the polar bear and walrus populations. We further acknowledge that additional or complimentary research, studies, and information, collected in a timely fashion, is useful to better evaluate the effects of oil and gas activities on polar bears and walruses in the future.

*Comment:* There is conflicting information in different sections of the **Federal Register** notice describing "ramp-up" procedures.

*Response:* The Service has made the appropriate modifications to this document.

*Comment:* The Service should analyze the impacts of non-native species introductions and require measures such as ballast water management to prevent such introductions.

*Response:* Although ballast water management is a valid conservation concern in the nation's waters, this issue is beyond the scope of our analyses. The USCG has published regulations at 33 CFR Part 151, Subpart D (Ballast Water Management for Control of Non-indigenous Species in Waters of the United States), establishing a national mandatory ballast water management program for all vessels equipped with ballast water tanks that enter or operate within U.S. waters. These regulations require vessels to maintain a ballast water management plan that is specific for that vessel and assigns responsibility to the master or appropriate official to understand and execute the ballast water management strategy for that vessel.

*Comment:* One commenter suggested that the Service's failure to consider several studies demonstrating a threat of serious injury and mortality to marine mammals from seismic surveys rendered its determination that serious injury or mortality will not occur from the proposed seismic surveys and other exploration activities arbitrary and capricious.

*Response:* We reviewed the references cited by the commenter and found that they provide no additional information concerning potential impacts of seismic surveys on walruses or polar bears. Although the underwater hearing characteristics of polar bears and walruses are poorly known, the Service has no reason to believe that either species are more prone to acoustical injury than other marine mammals. In the absence of specific data on polar bears and walruses, the Service has adopted monitoring and mitigation standards established for other marine mammal species. These standards are inherently conservative, as they are based upon theoretical thresholds for temporary hearing loss, a non-injurious (Level B harassment) level. Additionally, monitoring and reporting conditions specified in the regulations call for the cessation of activity in the unlikely event that an injury occurs. Activity would not be allowed to commence until the cause of the injury/mortality could be determined. The Service believes that the mitigation measures for seismic surveys identified in the regulations are adequate for mitigation against the potential for serious injury and mortality.

*Comment:* The Service cannot meaningfully assess the number of walruses likely to be impacted, consequently it is not possible to conclude that only "small numbers" will be taken, therefore any "small numbers" conclusion is arbitrary and capricious.

*Response:* There is no recent, reliable census information for either walruses or polar bears in the Chukchi Sea region. Furthermore, the distribution and abundance of walruses and polar bears in the specified geographical region considered in these regulations is expected to fluctuate dramatically on a seasonal and annual basis in response to dynamic ice conditions. Consequently, it is not practical to provide *a priori* numerical estimates of the number of walruses or polar bears that might occur within the specified geographical region in any given year, or to quantify with any statistical reliability the number of animals that could potentially be exposed to industrial noise during this time frame. Nevertheless, based on other

factors, we are able to deduce with a high degree of confidence that only small numbers of Pacific walruses and polar bears are likely to be impacted by the proposed activities. The factors considered in this finding are detailed in the "Summary of Take Estimates for Pacific Walruses and Polar Bears."

*Comment:* Each seismic survey would take approximately 3,000 walrus. With up to four seismic survey vessels operating simultaneously in the Chukchi Sea region in any given year, as many as 12,000 walrus takes could occur each year, with a total of 60,000 walrus taken over the 5-year duration of the regulations.

The Service believes that the estimated "takes" presented by the commenter are based upon an overly simplistic model (line miles of survey effort with a calculated zone of influence distributed across a habitat characterized by a theoretical, uniform animal density) that over estimates the number of walruses potentially exposed to seismic noise by the described activities. While certain aspects of this model might be considered reasonable for a seismic survey that transected a long, linear distance, the specified surveys are expected to occur within relatively small areas, transiting back and forth across a region of interest. Because of the overlapping zone of influence, the amount of potential walrus habitat ensouffied (and number of walruses potentially exposed to seismic noise) during any given survey will be far less than presented by the calculation. The Service also believes that it is not appropriate to estimate the number of potential exposures based upon a standard uniform theoretical density as presented. Based upon the results of previous survey efforts, it is clear that walruses are not distributed uniformly across the Chukchi Sea. It is likely that walruses will be absent, or at least widely distributed during the exploration season at the locations of interest. The commenter failed to consider any of the site-specific monitoring requirements or adaptive mitigation measures identified in the **Federal Register** notice that are expected to greatly reduce the chances of activities occurring in areas of high walrus concentrations. The Service also considered the likelihood that not all potential exposures would translate into "takes" and that any anticipated "take" would be limited merely to temporary shifts in animal behavior in making our determination.

*Comment:* The **Federal Register** notice concludes that anticipated "takes" will be limited to nonlethal

disturbances, affecting a relatively small number of animals and that most disturbances will be relatively short-term in duration. The MMPA only allows take affecting "small numbers" of marine mammals, not "relatively small numbers."

*Response:* The Service's analysis of "small numbers" complies with the agency's regulatory definition and is an appropriate reflection of Congress' intent. As we noted during the development of this definition (48 FR 31220; July 7, 1983), Congress itself recognized the "imprecision of the term 'small numbers,' but was unable to offer a more precise formulation because the concept is not capable of being expressed in absolute numerical limits." See H.R. Report No. 97-228 at 19. Thus, Congress focused on the anticipated effects of the activity on the species and that authorization should be available to persons "whose taking of marine mammals is infrequent, unavoidable, or accidental." *Id.*

The Chukchi Sea lease sale area extends over 1.9 million square kilometers of potential walrus and polar bear habitat. The typical seismic survey project is expected to sample less than 2 percent of this area and, because of difficulties associated with operating in and near pack ice, survey vessels will be operating in habitats where walrus and polar bear densities are expected to be extremely low. Based upon previous survey efforts in the region, the expected extent of ice during the proposed activities, behavior and movement trends of Pacific walruses and polar bears, we expect industry operations will only interact with small numbers of these animals in open water habitats. Of course, some of the proposed exploratory activities will occur on land as well. However, we have reviewed the proposed activities, both on land and at sea, and the results of previous monitoring studies in light of the existing and proposed mitigation measures. This review leads us to conclude that, while some incidental take of walruses and polar bears is reasonably expected to occur, these takes will be limited to non-lethal disturbances, affecting a small number of animals, and that most disturbances will be relatively short-term in duration. Furthermore, we do not expect the anticipated level of take from the proposed activities to affect the rates of recruitment or survival of either the Pacific walrus or polar bear populations.

*Comment:* The Service justifies making their "small numbers" and "negligible impacts" conclusion by stating that "[b]ased upon previous seismic monitoring programs, seismic

surveys can be expected to interact with relatively small numbers of walruses swimming in open water." There are multiple problems with this assertion: (1) It assumes that monitoring programs actually detect all walrus impacted by exploration activities; (2) it ignores the high density of walrus in the Chukchi Sea; (3) it ignores the fact that much of the authorized activity will occur in or near ice; (4) it is only about seismic surveys, which are only a subset of the numerous exploration activities; and (5) it ignores the fact that changing ice conditions as a result of global warming are leading to more walrus being observed in open water.

*Response:* Comments related to the Service conclusions regarding "small numbers" have been previously addressed. The commenter correctly points out that marine mammal observers are unlikely to detect all walruses potentially exposed to noise generated by exploration activities. Rather, the observer program is designed as an adaptive measure, which allows operators to quickly respond should a walrus enter a prescribed safety zone.

The commenter suggests that the Service has ignored the high density of walruses in the Chukchi Sea. Both the preamble of the **Federal Register** Notice and the EA acknowledge that the Chukchi Sea is important habitat for a significant proportion of the Pacific walrus population when ice is present. It is important to clarify that walruses are an ice-dependent species and their distribution and abundance in the region is largely influenced by the presence or absence of suitable sea ice habitats. Although the Service acknowledges that walruses can and do range considerable distances from sea ice haulouts during migrations or foraging excursions, the species is not adapted to a pelagic existence, and is not likely to adapt to a pelagic lifestyle in the absence of sea ice as suggested. Furthermore, the suggestion that much of the specified activity will occur in or near sea ice is unfounded. Most of the exploration activities specified in these regulations are expected to occur in open water conditions some distance from the pack-ice. Vessel based seismic surveys, which involve towing hydrophone arrays up to several hundred meters in length, cannot be accomplished in the presence of sea ice. Offshore exploratory drilling operations are expected to occur from drill ships requiring open water conditions. The ice management vessels associated with the drill ships are a necessary safety and environmental precaution against potential, but infrequent, incursions of

sea ice during drilling operations. In the event that icebreaker operations are necessary, they will be subject to additional monitoring and mitigation measures, including but not limited to ice scouting and marine mammal surveys in the vicinity of the drill site. Because most of the offshore activities will occur in open water conditions some distance from the sea ice, we expect them to interact with a relatively small proportion of the Pacific walrus population. In the event that any walrus are present near exploratory operations, whether in open water or on intruding sea ice, boat-based monitoring to mitigate disturbance events will occur. Furthermore, because of the transitory nature of the authorized activities, we do not anticipate that any walrus exposed to these operations will exhibit more than short term behavioral responses.

*Comment:* It is not apparent that the Service has made a separate finding that only “small numbers” of Pacific walrus and polar bears will be affected by the proposed authorizations. This is because there is no apparent numerical estimate of the number of animals that will be taken by any of the petitioners individually or cumulatively during the proposed exploration activities.

*Response:* The Service is confident that only small numbers of walrus and polar bears will be taken by the proposed activities. Although a numerical estimate of the number of Pacific walrus and polar bears that might be taken incidental to specified activities currently could not be practically obtained, the Service deduced that only small numbers of Pacific walrus and polar bears, relative to their populations, have the potential to be impacted by the proposed industry activities described in these regulations. This conclusion was based on the best available scientific information regarding the habitat use patterns of walrus and polar bears and the distribution of walrus and bears relative to where industry activities are expected to occur. In addition to our response, we have further clarified our explanation of small numbers in the regulations (Summary of Take Estimates for Pacific Walrus and Polar Bears).

*Comment:* The Service has conflated the MMPA’s requirement that the number of takings be small and that the takings have a negligible impact on a species or stock.

*Response:* We disagree. The Service’s determination that the takings are of small numbers was analyzed independently of its determination that

those takings would have a negligible impact. Moreover, the Service’s analysis of “small numbers” complies with the agency’s regulatory definition and is an appropriate reflection of Congress’ intent. As we noted during the development of this definition (48 FR 31220; July 7, 1983), Congress itself recognized the “imprecision of the term ‘small numbers,’ but was unable to offer a more precise formulation because the concept is not capable of being expressed in absolute numerical limits.” See H.R. Report No. 97–228 at 19. Thus Congress itself focused on the anticipated effects of the activity on the species and that authorization should be available to persons “whose taking of marine mammals is infrequent, unavoidable, or accidental.” *Id.* The Service’s analysis of negligible impact was based on the distribution and number of the species during proposed activities, its biological characteristics, the nature of the proposed activities, the potential effects, documented impacts, mitigation measures that will be implemented, as well as other data provided by monitoring programs in the Beaufort Sea.

*Comment:* The “small numbers” conclusion doesn’t include impact from oil spills and other direct, indirect and cumulative impacts, and doesn’t account for climate change.

*Response:* We disagree. The final EA addresses cumulative impacts, as did the draft EA within the parameters of the 5-year regulatory time period. The EA identifies reasonably foreseeable oil and gas-related and non-oil and gas-related activities in both Federal and State of Alaska waters. This included oil spill analysis, which reviewed spills from vessel transport, onshore spills, and potential release of oil from exploratory well sites. Implementing NEPA requires analysis of a most likely or reasonably foreseeable scenario when analyzing an issue, such as oil spills, not a worst case scenario. The Service analyzed potential oil spills using data from MMS, the State of Alaska, oil spill contingency plans from industry, along with known information of distribution and movements of polar bears and walrus. The type of spill, amount of oil released, potential locations of spills, their seasonal timing in addition to life history parameters of the Service trust species were incorporated into our analysis. We determined that, while the potential for oil spills to occur exists, they will have a negligible impact on polar bears and walrus, considering the likelihood of these events occurring. Other appropriate factors, such as climate change (addressed throughout the comments), military activities, and

noise contributions from community and commercial activities were also considered.

#### 5. Subsistence

*Comment:* The Service conclusion that there will be no unmitigatable adverse impacts on polar bear and walrus availability for subsistence uses is not supported.

*Response:* We disagree. In our analysis of the potential impacts of the specified activities on subsistence use of polar bears and walrus we considered: (1) The implementation of exclusion zones around established hunting areas, such as the twenty-five-mile coastal deferral zone and the 40-mile seismic exclusion zone surrounding coastal communities; (2) the timing and location of the specified activities; (3) the timing and location of subsistence hunting activities; (4) requirements for community consultations; and (5) requirements for developing POCs to resolve any conflicts. Furthermore, the regulatory process will allow the opportunity for communities to review operational plans and make recommendations for additional mitigation measures, if necessary.

*Comment:* The Service should prepare the Plan of Cooperation (POC) at the beginning of the planning stages to ensure a document is produced that is acceptable to all parties.

*Response:* The POC is developed by industry and is a document that involves industry and the affected subsistence communities. It is included as a section of the incidental take request packet submitted by industry to the Service. Within that context, the POC process requires presentation of project specific information, such as operation plans, to the communities to identify any specific concerns that need to be addressed. It is impossible to develop a POC until the nature of specific projects is identified and the concerns of the affected community are heard. Coordination with the affected subsistence communities and development of the POC are the responsibility of industry; however, the Service offers guidance during the process, if necessary. The requirements and process for the POC, including the Service’s right to review and reject the POC if it does not provide adequate safeguards to ensure that marine mammals will remain available for subsistence use, are described in the preamble of the rule and reiterated in the regulations.

*Comment:* A mandatory POC process diminishes industry’s ability to plan operations, or to negotiate fair and reasonable operational restrictions.

*Response:* The MMPA requires the Secretary to make a finding that the total of any authorized incidental take of marine mammals will not have an unmitigable adverse impact on the availability of such species or stock for taking for subsistence uses. The MMPA further identifies those exempt from the MMPA and, therefore, able to take marine mammals for subsistence purposes, i.e. any Indian, Aleut, or Eskimo who resides in Alaska and who dwells on the coast of the North Pacific Ocean or the Arctic Ocean. The Service has determined that the process of coordinating with the commissions, who represent the various Native communities, provides a viable mechanism for ensuring the availability for subsistence take. Even though a proposed operation may be more than 40 miles from a coastal subsistence-use community, the POC includes other measures that will be taken to avoid or minimize interferences with subsistence hunters.

Nonetheless, clarifying language was added indicating that any activity with the potential to disrupt animals or interact with hunters within the 25-mile coastal deferral zone and/or within traditional hunting areas (defined by a 40-mile radius of the communities) will require the applicant to consult with potentially effected communities (e.g., open public meeting within the community) and appropriate Native Hunting Commissions; the Service recognizes the Eskimo Walrus Commission (EWC) and the Alaska Nanuq Commission (ANC) as entities charged with representing the interests of walrus and polar bear hunters in these communities. Any concerns expressed by the communities (or Native Commissions) must be addressed through the POC. The Service will be responsible for determining whether or not community concerns have been adequately addressed.

*Comment:* The 40-mile radius identified in the regulations is larger than the area typically utilized by hunters during the open water season.

*Response:* The Service considered the best available information concerning walrus and polar bear hunting practices along the western coast of Alaska adjacent to the Chukchi Sea, including several unpublished reports and self-reported information collected through the Service MTRP (harvest monitoring) in defining the 40-mile radius around subsistence hunting communities.

Although any additional studies will be considered if they become available, based on the information at-hand, the Service believes the 40-mile radius is an accurate depiction of the open water

season area used by walrus and polar bear hunters.

#### 6. Oil Spills and Related Issues

*Comment:* The Service assumptions that there would be relatively small volumes of material spilling in open water due to use of blow-out technology and implementation of MMS operating stipulations is not adequate. The EA should assess the efficacy of the current spill prevention technology and clean-up procedures.

*Response:* We disagree. The Service's analysis acknowledges there is a potential for spills to occur. However, we believe that the occurrence of such an event is minimized by adherence to the regulatory standards that are in place. This is supported by historical evidence, which indicates that adherence to oil spill plans and management practices has resulted in no major spills associated with exploratory work in the Beaufort Sea or the Chukchi Sea. In addition, we believe that restricting in-water work to the ice-free period (i.e., after July 1 or earlier if the area is deemed ice-free) further minimizes potential impacts from a spill.

*Comment:* The Service does not adequately address potential take from oil or other toxic spills, including potential lethal takes that may result from the seismic vessels and support operations, drill rigs, fuel barges, waste disposal, camp operations, survey flights, and potential "in-situ" burning of oil spills.

*Response:* We disagree. The Service did analyze the potential for nonlethal take from oil or other toxic spills associated with the exploration activities described in the preamble of the rule, and concluded that the potential is small. To date, there have been no major spills associated with exploration activities in either the Beaufort or Chukchi Seas. Large spills (> 1,000 bbls) have historically been associated with production facilities or at pipelines connecting wells to the pipeline system. It is anticipated that during the authorized exploratory activities, adherence to the current regulatory standards and practices for prevention, containment, and clean-up would minimize potential adverse impacts from oil or other spills.

In addition, the Service concluded the potential for the lethal take of polar bear or walrus during Industry operations is small. As authorized under section 101(a)(5)(A) of the MMPA, these regulations allow for the incidental, but not intentional, take of polar bears and Pacific walruses. However, this provision does not override

requirements of other environmental legislation, such as the Clean Water Act and the Oil Pollution Act. In the event of a large spill that results in the lethal take of polar bears or Pacific walruses, we will reassess the impacts to polar bear and Pacific walrus populations and reconsider the appropriateness of authorization for incidental taking through this regulation.

*Comment:* The Service does not adequately assess the potential for oil spills as a result of future development and production.

*Response:* These regulations are of a finite duration (i.e., five years) and authorize incidental take associated with specified exploration activities only. The analyses did not assess the potential for spills from full-scale development and production because that was beyond the scope of analysis. If and when a full-scale facility is proposed, the Service will assess the potential impacts of those specific activities at that time.

*Comment:* The Service has failed to assess the risk of fuel or oil spills to polar bears and walruses during authorized activities.

*Response:* The Service acknowledges that there is a potential for fuel spills to occur; however, we believe that the occurrence of such an event is minimized by adherence to regulatory standards for spill prevention, containment, and cleanup. In the event of a large spill, we would reassess the impacts to the polar bear and walrus populations and reconsider the appropriateness of authorizations for taking through Section 101(a)(5)(A) of the MMPA.

*Comment:* The Service should conduct modeling studies for the overlay of potential operations with spill trajectories similar to what was done for the Northstar and Liberty projects.

*Response:* While we agree that more information and analyses will continue to improve decision-making abilities, conducting spill trajectories in a manner similar to those produced for the production sites of Northstar and Liberty in the Beaufort Sea is not possible for the types of activities, i.e., exploration, considered under these regulations. This is because Northstar and Liberty are production sites, with known location of facilities, whereas specified drill sites for exploratory activities in the Chukchi Sea are largely unknown at this time. The Service has participated in developing an oil spill contingency plan that covers the area of the Chukchi Sea. Under spill response and contingency planning, federal agencies such as the USCG, MMS, and

the Service identify vulnerable natural resource areas and develop plans to protect these areas in the event of a spill. These 5-year regulations cover only exploratory activities when, and if, incidental take regulations are requested for future production activities in the Chukchi Sea, oil spill analysis using spill trajectories and oil spill risk assessment or similar analysis techniques will be part of the future analysis.

*Comment:* Pre-booming should be removed as a requirement for fuel transfers during seismic survey operations.

*Response:* The text has been modified to indicate that operators must operate in full compliance with an MMS approved Oil Spill Prevention and Response Plan. Proposed operations in sensitive habitat areas will be reviewed by the Service on a case-by-case basis and may result in the prescription of additional mitigation measures (such as pre-booming of vessels during fuel transfers) through the LOA process.

#### 7. Climate Change

*Comment:* Potential effects of climate changes must be assessed as part of a long-term monitoring and mitigation program. A broad-based population and monitoring impacts assessment program should be developed to ensure that individual, indirect, and cumulative impacts do not have significant adverse impacts on populations, and that they do not adversely affect the availability of marine mammals for subsistence use.

*Response:* The scope of climate change goes beyond this analysis, which is to determine whether the total level of incidental take as a result of the exploration activities proposed by the oil and gas industry will have a negligible impact on polar bears and walrus as well as no unmitigable adverse impact on subsistence use. The Service has factored the information on climate change and its effects on these species into the decision-making process and into prescribing the permissible methods of take, including the mitigation and monitoring measures that will be required.

Further, the Service, in cooperation with the USGS and the Alaska Department of Fish and Game, surveys and monitors the status and trends of polar bears and walrus. The prescribed regulations and associated LOAs will allow us to modify mitigation and monitoring measures as needed to take into account new information on impacts of climate change to the polar bear and Pacific walrus populations.

Nonetheless, the objective of these regulations is not to analyze the impact

of climate change on polar bears and walrus but, to analyze the impact of oil and gas exploration activities on these species taking into consideration other ongoing factors, which includes the information gained on climate change. Although effects of climate change, such as declining sea ice, will likely affect populations, the majority of predicted takes based on current known data, Service knowledge of trust species, and previous Industry information from the Beaufort Sea suggests that the majority of takes will be limited to changes in behavior of individual animals of limited duration.

*Comment:* The small number finding is suspect due to the rapid change that the Arctic is undergoing as a result of global warming. The retreat of the sea ice from the Alaska coast has had numerous impacts, such as drowned bears documented by MMS.

*Response:* The small number finding for these regulations is based on potential Industry activities and the type of industry/bear interactions that may occur and incidental take based on those activities, not events occurring in the natural environment, such as bears caught in a storm event. Available information does indicate that, due to changes in the Arctic environment, there may be an increase in the number of bears swimming offshore, which suggests an increased susceptibility to storm events. The Service did take this information into consideration in our analysis.

Although there is a possibility that the exploration activities in the Chukchi Sea geographic region may encounter polar bears in the water, recent monitoring (2006 and 2007) and observations conclude that Industry activities have only encountered small numbers of bears (four individuals in 2006 and five individuals in 2007) late in the open water season by support vessels when they were operating near ice floes. These disturbances have been limited to temporary, short-term behavior changes. In addition, the mitigation measures we have prescribed, e.g., 0.5-mile operation exclusion zone around swimming bears and trained polar bear observers on board the vessels, will reduce potential interactions between polar bears and offshore seismic operations. Similarly, the mitigation measures prescribed for onshore exploratory activities, e.g., measures for avoiding dens and reducing the potential for human-bear interactions, are designed to reduce the numbers of takes of bear by Industry. In any event, there will be constant monitoring during the course of Industry activities and we will modify

the mitigation requirements as necessary to ensure that the numbers of animals taken remains small.

*Comment:* Impacts from climate change on walrus are apparent and further discredit the assumptions used to estimate walrus take from exploration activities.

*Response:* The Service agrees that the effects of climate change may impact Pacific walrus and new information on the extent of the potential impacts continues to present itself. However, the analysis for these regulations is not an estimated take due to climate change but, an estimated incidental take due to exploration activities. Regardless of climate change impacts similar to those expressed by the commenter, the Service believes that the mitigation measures we've prescribed, e.g., restricting the timing of offshore exploration activities, imposing a 0.5-mile operational exclusion zone, and a 1,000-ft altitude restriction, will ensure that the proposed exploration activities do not exacerbate the situation. In fact, with the reporting requirements, we stand to gain a greater understanding of the impacts and, through the use of adaptive management, can modify the mitigation requirements or withdraw the regulations as necessary. In this way, we can monitor and minimize any potential impacts of the exploration activities.

*Comment:* Because the status of both the Pacific walrus and Bering/Chukchi Sea polar bear stock are unknown, the Service cannot conclude that exploration activities, which will harass thousands of individuals, will have no more than a "negligible effect" on the stocks. Further, the Service "negligible impact" finding fails to adequately consider that the Chukchi Sea and adjacent areas are undergoing rapid change as a result of global warming and that impacts are likely to be even more severe than projected.

*Response:* The Service admits that we do not have a current number for actual population status of the Pacific walrus or the Chukchi/Bering Seas stock of polar bears. We further acknowledge that climate change must be taken into consideration as it relates to cumulative impacts on the species. However, before reaching its negligible impact determination, the Service considered not only the number of potential incidental takes, but also the type of incidental take anticipated. In the case of the proposed activities covered by these regulations, we do not anticipate any lethal takes will occur. We have concluded that incidental takes will be limited to temporary and transitory modifications of animal behavior that

will not have any negative impacts on population levels, regardless of changes in the environment.

The Service's analysis of negligible impact was based on the distribution and number of the species during proposed activities, its biological characteristics, the nature of the proposed activities, the potential effects, documented impacts, mitigation measures that will be implemented, as well as other data provided by monitoring programs in the Beaufort Sea. Taking these factors into consideration, the Service made a determination that any potential incidental take (i.e., harassment) due to Industry activities would have a negligible impact on polar bears and Pacific walrus.

The Service recognizes that climate change is a long-term, complicated issue. Although the short-term impacts of declining sea ice due to climate change on polar bears and walrus were evaluated in the analysis conducted, it is beyond the scope of these incidental take regulations to address the potentially wide ranging long-term impacts of climate change. However, it is important to note that, should Industry impacts increase during the five-year time period of these regulations beyond the scope of impacts analyzed, the Service will review this new information in terms of negligible impact. As previously indicated, the Service has the ability to withdraw the regulations if impacts are more than negligible.

#### 8. Other Applicable Agreements/Regulations

*Comment:* Allowing incidental take is a violation of the 1973 Agreement on the Conservation of Polar Bears to protect essential polar bear habitats. The Service must explain how the incidental take regulations and authorizations will protect such habitats.

*Response:* The incidental take regulations are consistent with the Agreement. Article II of the Polar Bear Agreement lists three obligations of the Parties in protecting polar bear habitat: (1) To take "appropriate action to protect the ecosystem of which polar bears are a part;" (2) to give "special attention to habitat components such as denning and feeding sites and migration patterns;" and (3) to manage polar bear populations in accordance with "sound conservation practices" based on the best available scientific data. The Service's actions are consistent with these responsibilities.

Promulgation of these regulations is authorized under Section 101(a)(5)(A) of the MMPA. The primary objective of the

MMPA is to maintain the health and stability of the marine ecosystem with a goal of maintaining marine mammal populations at optimum sustainable levels. As such, the MMPA served in large part to provide for domestic implementation of the Polar Bear Agreement. There are a number of other statutes that augment habitat protection for polar bears; these include, but are not limited to, the following: Coastal Zone Management Act; National Wildlife Refuge Act; Clean Water Act; Outer Continental Shelf Lands Act, Alaska National Interest Lands Conservation Act; and Marine Protection Research and Sanctuaries Act.

In addition, in 1993, the Secretary of the Interior required that, before incidental take regulations for the Beaufort Sea region could be finalized, the Service develop a polar bear habitat conservation strategy. And, in 1995, the Service developed a *Habitat Conservation Strategy for Polar Bears in Alaska* (Strategy). Completed in August of 1995, the Strategy provides a useful tool for habitat conservation and identifies important habitat areas used by polar bears for denning and feeding.

This rule is consistent with the Service's treaty obligations because it incorporates mitigation measures that ensure the protection of polar bear habitat. The anticipated LOAs for industrial activities will be conditioned to include area or seasonal timing limitations or prohibitions, such as placing one-mile avoidance buffers around known or observed dens (which halts or limits activity until the bear naturally leaves the den), building roads perpendicular to the coast to allow for polar bear movements along the coast, and monitoring the effects of the activities on polar bears.

In addition to the protections provided for known or observed dens, Industry has assisted in the research of FLIR thermal imagery, which is useful in detecting the heat signatures of polar bear dens. By conducting FLIR surveys prior to activities to identify polar bear dens along with verification of these dens by scent-trained dogs, disturbance of even unknown denning females is limited. Another area of Industry support has been the use of digital elevation models and aerial imagery in identifying habitats suitable for denning.

LOAs will also require the development of polar bear human interaction plans in order to minimize potential for encounters and to mitigate for adverse effects should an encounter occur. These plans protect and enhance the safety of polar bears using habitats

within the area of industrial activity. Finally, as outlined in our regulations at 50 CFR 18.27(f)(5), LOAs may be withdrawn or suspended, if non-compliance of the prescribed regulations occurs.

*Comment:* In light of the ESA, the Service should require a conference opinion for any activity that is likely to jeopardize the continued existence of any species proposed for listing.

*Response:* We agree, under section 7(a)(4) of the ESA, each Federal agency is required to confer with the Secretary on any agency action that is likely to jeopardize the continued existence of any species proposed to be listed under the ESA. During the time that the Service was developing these regulations, the polar bear was proposed for listing under the ESA. The Service made a determination that this rule would not pose any likelihood of jeopardy to the species, and therefore, a 7(a)(4) conference was not required. On May 15, 2008 (73 FR 28212), the polar bear was listed as threatened and the Service has since completed an intra-Service section 7(a)(2) consultation, which confirms that these incidental take regulations are not likely to jeopardize the continued existence of this species.

#### Required Determinations

##### *National Environmental Policy Act (NEPA) Considerations*

We have prepared an EA in conjunction with this rulemaking, and have determined that this rulemaking is not a major Federal action significantly affecting the quality of the human environment within the meaning of section 102(2)(C) of the NEPA of 1969. For a copy of the EA, contact the individual identified above in the section **FOR FURTHER INFORMATION CONTACT**.

##### *Endangered Species Act (ESA)*

On May 15, 2008 (73 FR 28212) the polar bear was listed as a threatened species under the ESA. The Service conducted an intra-Service section 7(a)(2) consultation and completed a Biological Opinion (BO) concluding that the issuance of these regulations, including the process for issuing LOAs, is not likely to jeopardize the continued existence of the polar bear.

##### *Regulatory Planning and Review*

The Office of Management and Budget (OMB) has determined that this rule is not significant and has not reviewed this rule under Executive Order 12866 (E.O. 12866). OMB bases its determination upon the following four criteria:

(a) Whether the rule will have an annual effect of \$100 million or more on the economy or adversely affect an economic sector, productivity, jobs, the environment, or other units of the government.

(b) Whether the rule will create inconsistencies with other Federal agencies' actions.

(c) Whether the rule will materially affect entitlements, grants, user fees, loan programs, or the rights and obligations of their recipients.

(d) Whether the rule raises novel legal or policy issues.

#### *Small Business Regulatory Enforcement Fairness Act*

We have determined that this rule is not a major rule under 5 U.S.C. 804(2), the Small Business Regulatory Enforcement Fairness Act. The rule is not likely to result in a major increase in costs or prices for consumers, individual industries, or government agencies or have significant adverse effects on competition, employment, productivity, innovation, or on the ability of United States-based enterprises to compete with foreign-based enterprises in domestic or export markets.

#### *Regulatory Flexibility Act*

We have also determined that this rule will not have a significant economic effect on a substantial number of small entities under the Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.* Oil companies and their contractors conducting exploration, development, and production activities in Alaska have been identified as the only likely applicants under the regulations. Therefore, a Regulatory Flexibility Analysis is not required. In addition, these potential applicants have not been identified as small businesses and, therefore, a Small Entity Compliance Guide is not required. The analysis for this rule is available from the individual identified above in the section **FOR FURTHER INFORMATION CONTACT.**

#### *Takings Implications*

This rule does not have takings implications under Executive Order 12630 because it authorizes the nonlethal, incidental, but not intentional, take of walrus and polar bears by oil and gas industry companies and thereby exempts these companies from civil and criminal liability as long as they operate in compliance with the terms of their LOAs. Therefore, a takings implications assessment is not required.

#### *Federalism Effects*

This rule does not contain policies with Federalism implications sufficient to warrant preparation of a Federalism Assessment under Executive Order 13132. The MMPA gives the Service the authority and responsibility to protect walrus and polar bears.

#### *Unfunded Mandates Reform Act*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501, *et seq.*), this rule will not "significantly or uniquely" affect small governments. A Small Government Agency Plan is not required. The Service has determined and certifies pursuant to the Unfunded Mandates Reform Act that this rulemaking will not impose a cost of \$100 million or more in any given year on local or State governments or private entities. This rule will not produce a Federal mandate of \$100 million or greater in any year, i.e., it is not a "significant regulatory action" under the Unfunded Mandates Reform Act.

#### *Government-to-Government Relationship With Tribes*

In accordance with the President's memorandum of April 29, 1994, "Government-to-Government Relations with Native American Tribal Governments" (59 FR 22951), Executive Order 13175, Secretarial Order 3225, and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with federally recognized Tribes on a Government-to-Government basis. We have evaluated possible effects on federally recognized Alaska Native tribes. Through the LOA process identified in the regulations, Industry presents a Plan of Cooperation with the Native communities most likely to be affected and engages these communities in numerous informational meetings.

#### *Civil Justice Reform*

The Departmental Solicitor's Office has determined that these regulations do not unduly burden the judicial system and meet the applicable standards provided in Sections 3(a) and 3(b)(2) of Executive Order 12988.

#### *Paperwork Reduction Act*

This rule contains information collection requirements. We 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.

Although we had initially planned to combine our information collection request for the Chukchi Sea into the request package for the Beaufort Sea

(OMB Control No. 1018-0070) because the activities and requirements are nearly identical, we were not able to finalize the rule for the Chukchi Sea prior to the expiration date of the information collection approved for the Beaufort Sea. Therefore, we separated the requests for approval. The proposed rule for incidental take regulations in the Chukchi Sea invited interested members of the public and affected agencies to comment on the proposed information collection and recordkeeping activities for the Chukchi Sea. We have addressed all comments received in this preamble.

OMB has approved our collection of information for incidental take of marine mammals during specified activities in the Chukchi Sea for a 3-year term and assigned OMB Control No. 1018-0139. We will use the information that we collect to evaluate applications for specific incidental take regulations from the oil and gas industry to determine whether such regulations and subsequent LOAs should be issued. The information is needed to (1) establish the scope of specific incidental take regulations and (2) evaluate impacts of activities on species or stocks of marine mammals and on their availability for subsistence uses by Alaska Natives. It will ensure that applicants considered all available means for minimizing the incidental take associated with a specific activity.

We estimate that up to 10 companies will request LOAs and submit monitoring reports annually for the Chukchi Sea region covered by the specific regulations. We estimate that the total annual burden associated with the request will be 792 hours during years when applications for regulations are required and 492 hours when regulatory applications are not required. This represents an average annual estimated burden taken over a 3-year period, which includes the initial 300 hours required to complete the request for specific procedural regulations. We estimate that there will be an annual average of six on-site observation reports per LOA. For each LOA expected to be requested and issued subsequent to issuance of specific procedural regulations, we estimate that 33.5 hours per project will be invested (24 hours will be required to complete each request for an LOA, approximately 1.5 hours will be required for onsite observation reporting, and 8 hours will be required to complete each final monitoring report).

*Title:* Incidental Take of Marine Mammals During Oil and Gas Exploration Activities in the Chukchi

Sea and Adjacent Coast of Alaska, 50 CFR 18.27 and 50 CFR 18, Subpart I.  
OMB Number: 1018-0139.

Bureau form number: None.  
Frequency of collection: Semiannual.

Description of respondents: Oil and gas industry companies.

Type of Action	Annual number of responses	Average burden hours per action	Total annual burden hours
One time application for procedural regulations	* 1	300	300
LOA Requests	12	24	288
Onsite Monitoring and Observation Reports	72	1.5	108
Final Monitoring Report	12	8	96
Total	97		792

\* Per term of regulations.

Members of the public and affected agencies may comment on these information collection and recordkeeping activities at any time. *Comments are invited on:* (1) Whether or not the collection of information is necessary for the proper performance of the functions of the Service, including whether or not the information will have practical utility; (2) the accuracy of our estimate of the burden for this collection; (3) ways to enhance the quality, utility, and clarity of the information to be collected; and (4) ways to minimize the burden of the collection of information on respondents.

Send your comments and suggestions on this information collection to Hope Grey, Information Collection Clearance Officer, Fish and Wildlife Service, MS 222-ARLSQ, 4401 North Fairfax Drive, Arlington, VA 22203 (mail); (703) 358-2269 (fax); or [hope\\_grey@fws.gov](mailto:hope_grey@fws.gov) (e-mail).

*Energy Effects*

Executive Order 13211 requires agencies to prepare Statements of Energy Effects when undertaking certain actions. This rule provides exceptions from the taking prohibitions of the MMPA for entities engaged in the exploration of oil and gas in the Chukchi Sea and adjacent western coast of Alaska. By providing certainty regarding compliance with the MMPA, this rule will have a positive effect on Industry and its activities. Although the rule requires Industry to take a number of actions, these actions have been undertaken by Industry for many years as part of similar past regulations. Therefore, this rule is not expected to significantly affect energy supplies, distribution, or use and does not

constitute a significant energy action. No Statement of Energy Effects is required.

**List of Subjects in 50 CFR Part 18**

Administrative practice and procedure, Alaska, Imports, Indians, Marine mammals, Oil and gas exploration, Reporting and record keeping requirements, Transportation.

**Regulation Promulgation**

■ For the reasons set forth in the preamble, the Service amends part 18, subchapter B of chapter 1, title 50 of the Code of Federal Regulations as set forth below.

**PART 18—MARINE MAMMALS**

■ 1. The authority citation of 50 CFR part 18 continues to read as follows:

Authority: 16 U.S.C. 1361 *et seq.*

■ 2. Amend part 18 by adding a new subpart I to read as follows:

**Subpart I—Nonlethal Taking of Pacific Walruses and Polar Bears Incidental to Oil and Gas Exploration Activities in the Chukchi Sea and Adjacent Coast of Alaska**  
Sec.

- 18.111 What specified activities does this subpart cover?
- 18.112 In what specified geographic region does this subpart apply?
- 18.113 When is this subpart effective?
- 18.114 How do I obtain a Letter of Authorization?
- 18.115 What criteria does the Service use to evaluate Letter of Authorization requests?
- 18.116 What does a Letter of Authorization allow?
- 18.117 What activities are prohibited?
- 18.118 What are the mitigation, monitoring, and reporting requirements?
- 18.119 What are the information collection requirements?

**Subpart I—Nonlethal Taking of Pacific Walruses and Polar Bears Incidental to Oil and Gas Exploration Activities in the Chukchi Sea and Adjacent Coast of Alaska**

**§ 18.111 What specified activities does this subpart cover?**

Regulations in this subpart apply to the nonlethal incidental, but not intentional, take of small numbers of Pacific walruses and polar bears by you (U.S. citizens as defined in § 18.27(c)) while engaged in oil and gas exploration activities in the Chukchi Sea and adjacent western coast of Alaska.

**§ 18.112 In what specified geographic region does this subpart apply?**

This subpart applies to the specified geographic region defined as the continental shelf of the Arctic Ocean adjacent to western Alaska. This area includes the waters (State of Alaska and Outer Continental Shelf waters) and seabed of the Chukchi Sea, which encompasses all waters north and west of Point Hope (68°20'20" N, -166°50'40" W, BGN 1947) to the U.S.-Russia Convention Line of 1867, west of a north-south line through Point Barrow (71°23'29" N, -156° 28'30" W, BGN 1944), and up to 200 miles north of Point Barrow. The region also includes the terrestrial coastal land 25 miles inland between the western boundary of the south National Petroleum Reserve-Alaska (NPR-A) near Icy Cape (70°20'00" N, -148°12'00" W) and the north-south line from Point Barrow. This terrestrial region encompasses a portion of the Northwest and South Planning Areas of the NPR-A. Figure 1 shows the area where this subpart applies.

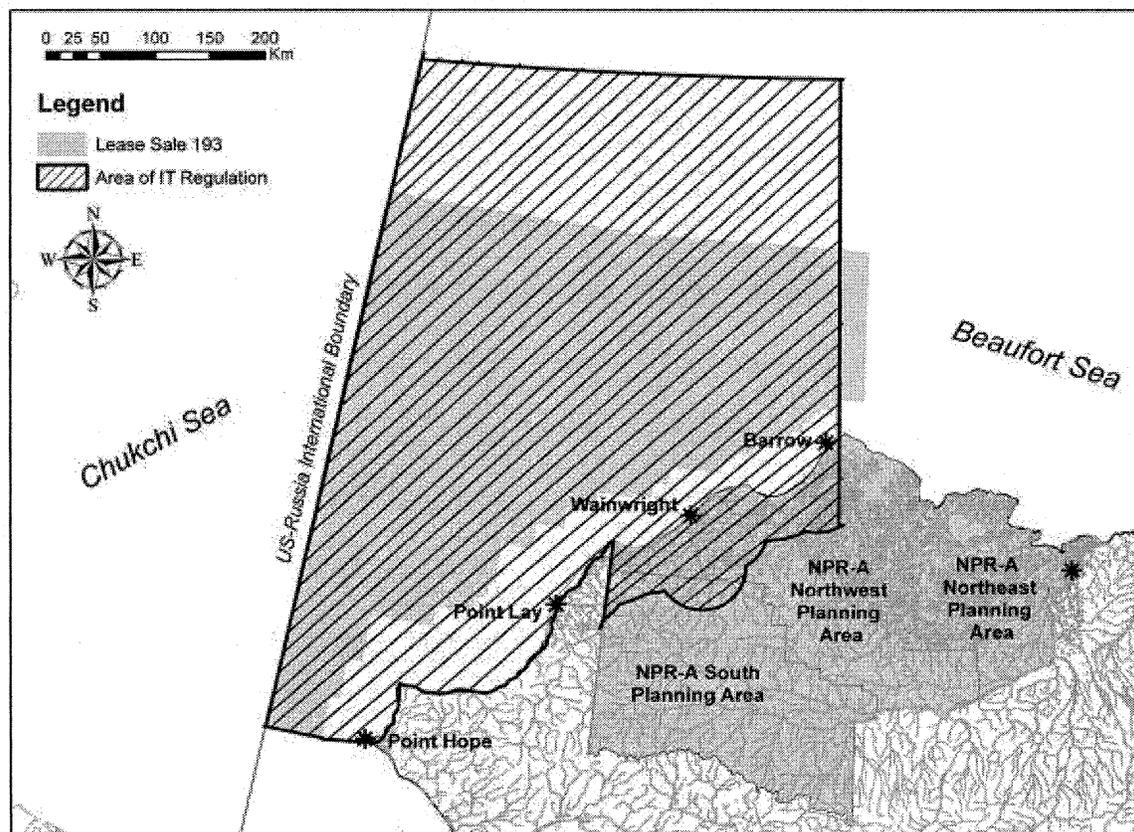


Figure 1: The geographic area of the Chukchi Sea and onshore coastal areas covered by the incidental take regulations.

**§ 18.113 When is this subpart effective?**

Regulations in this subpart are effective from June 11, 2008 through June 11, 2013 for year-round oil and gas exploration activities.

**§ 18.114 How do I obtain a Letter of Authorization?**

(a) You must be a U.S. citizen as defined in § 18.27(c).

(b) If you are conducting an oil and gas exploration activity in the specified geographic region described in § 18.112 that may cause the taking of Pacific walrus (walrus) or polar bears and you want nonlethal incidental take authorization under this rule, you must apply for a Letter of Authorization for each exploration activity. You must submit the application for authorization to our Alaska Regional Director (see 50 CFR 2.2 for address) at least 90 days prior to the start of the proposed activity.

(c) Your application for a Letter of Authorization must include the following information:

(1) A description of the activity, the dates and duration of the activity, the specific location, and the estimated area

affected by that activity, i.e., a plan of operation.

(2) A site-specific plan to monitor and mitigate the effects of the proposed activity on walrus and polar bears encountered during the ongoing activities, i.e., a marine mammal monitoring and mitigation plan. Your monitoring program must document the effects on these marine mammals and estimate the actual level and type of take. The monitoring requirements will vary depending on the activity, the location, and the time of year.

(3) A site-specific polar bear awareness and interaction plan, i.e., a polar bear interaction plan.

(4) A record of community consultation. Applicants must consult with potentially affected subsistence communities along the Chukchi Sea coast (Point Hope, Point Lay, Wainwright, and Barrow) and appropriate subsistence user organizations (the Eskimo Walrus Commission and the Alaska Nanuuq (polar bear) Commission) to discuss the location, timing, and methods of proposed operations and support activities and identify any potential conflicts with subsistence walrus and polar bear hunting activities in the communities. Applications for Letters of Authorization must include documentation of all consultations with

potentially affected user groups.

Documentation must include a summary of any concerns identified by community members and hunter organizations, and the applicant's responses to identified concerns. Mitigation measures are described in § 18.118.

**§ 18.115 What criteria does the Service use to evaluate Letter of Authorization requests?**

(a) We will evaluate each request for a Letter of Authorization based on the specific activity and the specific geographic location. We will determine whether the level of activity identified in the request exceeds that analyzed by us in considering the number of animals likely to be taken and evaluating whether there will be a negligible impact on the species or adverse impact on the availability of the species for subsistence uses. If the level of activity is greater, we will reevaluate our findings to determine if those findings continue to be appropriate based on the greater level of activity that you have requested. Depending on the results of the evaluation, we may grant the authorization, add further conditions, or deny the authorization.

(b) In accordance with § 18.27(f)(5), we will make decisions concerning withdrawals of Letters of Authorization,

either on an individual or class basis, only after notice and opportunity for public comment.

(c) The requirement for notice and public comment in paragraph (b) of this section will not apply if we determine that an emergency exists that poses a significant risk to the well-being of species or stocks of walrus or polar bears.

**§ 18.116 What does a Letter of Authorization allow?**

(a) Your Letter of Authorization may allow the nonlethal incidental, but not intentional, take of walrus and polar bears when you are carrying out one or more of the following activities:

(1) Conducting geological and geophysical surveys and associated activities;

(2) Drilling exploratory wells and associated activities; or

(3) Conducting environmental monitoring activities associated with exploration activities to determine specific impacts of each activity.

(b) Each Letter of Authorization will identify conditions or methods that are specific to the activity and location.

**§ 18.117 What activities are prohibited?**

(a) Intentional take and lethal incidental take of walrus or polar bears; and

(b) Any take that fails to comply with this part or with the terms and conditions of your Letter of Authorization.

**§ 18.118 What are the mitigation, monitoring, and reporting requirements?**

(a) *Mitigation.* Holders of a Letter of Authorization must use methods and conduct activities in a manner that minimizes to the greatest extent practicable adverse impacts on walrus and polar bears, their habitat, and on the availability of these marine mammals for subsistence uses. Dynamic management approaches, such as temporal or spatial limitations in response to the presence of marine mammals in a particular place or time or the occurrence of marine mammals engaged in a particularly sensitive activity (such as feeding), must be used to avoid or minimize interactions with polar bears, walrus, and subsistence users of these resources.

(1) *Operating conditions for operational and support vessels.*

(i) Operational and support vessels must be staffed with dedicated marine mammal observers to alert crew of the presence of walrus and polar bears and initiate adaptive mitigation responses.

(ii) At all times, vessels must maintain the maximum distance possible from

concentrations of walrus or polar bears. Under no circumstances, other than an emergency, should any vessel approach within a 805-m (0.5-mi) radius of walrus or polar bears observed on land or ice.

(iii) Vessel operators must take every precaution to avoid harassment of concentrations of feeding walrus when a vessel is operating near these animals. Vessels should reduce speed and maintain a minimum 805-m (0.5-mi) operational exclusion zone around feeding walrus groups. Vessels may not be operated in such a way as to separate members of a group of walrus from other members of the group. When weather conditions require, such as when visibility drops, vessels should adjust speed accordingly to avoid the likelihood of injury to walrus.

(iv) The transit of operational and support vessels through the specified geographic region is not authorized prior to July 1. This operating condition is intended to allow walrus the opportunity to disperse from the confines of the spring lead system and minimize interactions with subsistence walrus hunters. Exemption waivers to this operating condition may be issued by the Service on a case-by-case basis, based upon a review of seasonal ice conditions and available information on walrus and polar bear distributions in the area of interest.

(v) All vessels must avoid areas of active or anticipated subsistence hunting for walrus or polar bear as determined through community consultations.

(2) *Operating conditions for aircraft.*

(i) Operators of support aircraft should, at all times, conduct their activities at the maximum distance possible from concentrations of walrus or polar bears.

(ii) Under no circumstances, other than an emergency, should aircraft operate at an altitude lower than 305 m (1,000 ft) within 805 m (0.5 mi) of walrus or polar bears observed on ice or land. Helicopters may not hover or circle above such areas or within 805 m (0.5 mile) of such areas. When weather conditions do not allow a 305-m (1,000-ft) flying altitude, such as during severe storms or when cloud cover is low, aircraft may be operated below the 305-m (1,000-ft) altitude stipulated above. However, when aircraft are operated at altitudes below 305 m (1,000 ft) because of weather conditions, the operator must avoid areas of known walrus and polar bear concentrations and should take precautions to avoid flying directly over or within 805 m (0.5 mile) of these areas.

(iii) Plan all aircraft routes to minimize any potential conflict with active or anticipated walrus or polar bear hunting activity as determined through community consultations.

(3) *Additional mitigation measures for offshore exploration activities.*

(i) Offshore exploration activities will be authorized only during the open-water season, defined as the period July 1 to November 30. Exemption waivers to the specified open-water season may be issued by the Service on a case-by-case basis, based upon a review of seasonal ice conditions and available information on walrus and polar bear distributions in the area of interest.

(ii) To avoid significant additive and synergistic effects from multiple oil and gas exploration activities on foraging or migrating walrus, operators must maintain a minimum spacing of 24 km (15 mi) between all active seismic-source vessels and/or exploratory drilling operations. No more than four simultaneous seismic operations will be authorized in the Chukchi Sea region at any time.

(iii) No offshore exploration activities will be authorized within a 64-km (40-mi) radius of the communities of Barrow, Wainwright, Point Lay, or Point Hope, unless provided for in a Service-approved, site-specific Plan of Cooperation as described in paragraph (a)(6) of this section.

(iv) Aerial monitoring surveys or an equivalent monitoring program acceptable to the Service will be required to estimate the number of walrus and polar bears in a proposed project area.

(4) *Additional mitigation measures for offshore seismic surveys.* Any offshore exploration activity expected to include the production of pulsed underwater sounds with sound source levels  $\geq 160$  dB re 1  $\mu$ Pa will be required to establish and monitor acoustic exclusion and disturbance zones and implement adaptive mitigation measures as follows:

(i) *Monitor zones.* Establish and monitor with trained marine mammal observers an acoustically verified exclusion zone for walrus surrounding seismic airgun arrays where the received level would be  $\geq 180$  dB re 1  $\mu$ Pa; an acoustically verified exclusion zone for polar bear surrounding seismic airgun arrays where the received level would be  $\geq 190$  dB re 1  $\mu$ Pa; and an acoustically verified walrus disturbance zone ahead of and perpendicular to the seismic vessel track where the received level would be  $\geq 160$  dB re 1  $\mu$ Pa.

(ii) *Ramp-up procedures.* For all seismic surveys, including airgun testing, use the following ramp-up

procedures to allow marine mammals to depart the exclusion zone before seismic surveying begins:

(A) Visually monitor the exclusion zone and adjacent waters for the absence of polar bears and walrus for at least 30 minutes before initiating ramp-up procedures. If no polar bears or walrus are detected, you may initiate ramp-up procedures. Do not initiate ramp-up procedures at night or when you cannot visually monitor the exclusion zone for marine mammals.

(B) Initiate ramp-up procedures by firing a single airgun. The preferred airgun to begin with should be the smallest airgun, in terms of energy output (dB) and volume (in<sup>3</sup>).

(C) Continue ramp-up by gradually activating additional airguns over a period of at least 20 minutes, but no longer than 40 minutes, until the desired operating level of the airgun array is obtained.

(iii) *Power down/Shut down.*—Immediately power down or shut down the seismic airgun array and/or other acoustic sources whenever any walrus are sighted approaching close to or within the area delineated by the 180-dB re 1  $\mu$ Pa walrus exclusion zone, or polar bears are sighted approaching close to or within the area delineated by the 190-dB re 1  $\mu$ Pa polar bear exclusion zone. If the power down operation cannot reduce the received sound pressure level to 180-dB re 1  $\mu$ Pa (walrus) or 190-dB re 1  $\mu$ Pa (polar bears), the operator must immediately shut down the seismic airgun array and/or other acoustic sources.

(iv) *Emergency shut down.*—If observations are made or credible reports are received that one or more walrus and/or polar bears are within the area of the seismic survey and are in an injured or mortal state, or are indicating acute distress due to seismic noise, the seismic airgun array will be immediately shut down and the Service contacted. The airgun array will not be restarted until review and approval has been given by the Service. The ramp-up procedures provided in paragraph (a)(4)(ii) of this section must be followed when restarting.

(v) *Adaptive response for walrus aggregations.*—Whenever an aggregation of 12 or more walrus are detected within an acoustically verified 160-dB re 1  $\mu$ Pa disturbance zone ahead of or perpendicular to the seismic vessel track, the holder of this Authorization must:

(A) Immediately power down or shut down the seismic airgun array and/or other acoustic sources to ensure sound pressure levels at the shortest distance

to the aggregation do not exceed 160-dB re 1  $\mu$ Pa; and

(B) Not proceed with powering up the seismic airgun array until it can be established that there are no walrus aggregations within the 160-dB zone based upon ship course, direction, and distance from last sighting. If shut down was required, the ramp-up procedures provided in paragraph (a)(4)(ii) of this section must be followed when restarting.

(5) *Additional mitigation measures for onshore exploration activities.*

(i) *Polar bear interaction plan.*—Holders of Letters of Authorization will be required to develop and implement a Service-approved, site-specific polar bear interaction plan. Polar bear awareness training will also be required of certain personnel. Polar bear interaction plans will include:

(A) A description of the locations and types of activities to be conducted i.e., a plan of operation;

(B) A food and waste management plan;

(C) Personnel training materials and procedures;

(D) Site at-risk locations and situations;

(E) A snow management plan;

(F) Polar bear observation and reporting procedures; and

(G) Polar bear avoidance and encounter procedures.

(ii) *Polar bear monitors.*—If deemed appropriate by the Service, holders of a Letter of Authorization will be required to hire and train polar bear monitors to alert crew of the presence of polar bears and initiate adaptive mitigation responses.

(iii) *Efforts to minimize disturbance around known polar bear dens.*—

Holders of a Letter of Authorization must take efforts to limit disturbance around known polar bear dens.

(A) *Efforts to locate polar bear dens.*—Holders of a Letter of Authorization seeking to carry out onshore exploration activities in known or suspected polar bear denning habitat during the denning season (November–April) must make efforts to locate occupied polar bear dens within and near proposed areas of operation, utilizing appropriate tools, such as forward looking infrared (FLIR) imagery and/or polar bear scent-trained dogs. All observed or suspected polar bear dens must be reported to the Service prior to the initiation of exploration activities.

(B) *Exclusion zone around known polar bear dens.*—Operators must observe a 1-mile operational exclusion zone around all known polar bear dens during the denning season (November–April, or until the female and cubs leave

the areas). Should previously unknown occupied dens be discovered within 1 mile of activities, work in the immediate area must cease and the Service contacted for guidance. The Service 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.

(6) *Mitigation measures for the subsistence use of walrus and polar bears.* Holders of Letters of Authorization must conduct their activities in a manner that, to the greatest extent practicable, minimizes adverse impacts on the availability of Pacific walrus and polar bears for subsistence uses.

(i) *Community Consultation.*—Prior to receipt of a Letter of Authorization, applicants must consult with potentially affected communities and appropriate subsistence user organizations to discuss potential conflicts with subsistence hunting of walrus and polar bear caused by the location, timing, and methods of proposed operations and support activities (see § 18.114(c)(4) for details). If community concerns suggest that the proposed activities may have an adverse impact on the subsistence uses of these species, the applicant must address conflict avoidance issues through a Plan of Cooperation as described below.

(ii) *Plan of Cooperation (POC).*—Where prescribed, holders of Letters of Authorization will be required to develop and implement a Service-approved POC. The POC must include:

(A) A description of the procedures by which the holder of the Letter of Authorization will work and consult with potentially affected subsistence hunters; and

(B) A description of specific measures that have been or will be taken to avoid or minimize interference with subsistence hunting of walrus and polar bears and to ensure continued availability of the species for subsistence use.

(C) The Service will review the POC to ensure that any potential adverse effects on the availability of the animals are minimized. The Service will reject POCs if they do not provide adequate safeguards to ensure the least practicable adverse impact on the availability of walrus and polar bears for subsistence use.

(b) *Monitoring.* Depending on the siting, timing, and nature of proposed activities, holders of Letters of Authorization will be required to:

(1) Maintain trained, Service-approved, on-site observers to carry out monitoring programs for polar bears and walruses necessary for initiating adaptive mitigation responses.

(i) Marine Mammal Observers (MMOs) will be required on board all operational and support vessels to alert crew of the presence of walruses and polar bears and initiate adaptive mitigation responses identified in paragraph (a) of this section, and to carry out specified monitoring activities identified in the marine mammal monitoring and mitigation plan (see paragraph(b)(2) of this section) necessary to evaluate the impact of authorized activities on walruses, polar bears, and the subsistence use of these subsistence resources. The MMOs must have completed a marine mammal observer training course approved by the Service.

(ii) Polar bear monitors.—Polar bear monitors will be required under the monitoring plan if polar bears are known to frequent the area or known polar bear dens are present in the area. Monitors will act as an early detection system in regard to proximate bear activity to Industry facilities.

(2) Develop and implement a site-specific, Service-approved marine mammal monitoring and mitigation plan to monitor and evaluate the effects of authorized activities on polar bears, walruses, and the subsistence use of these resources.

(i) The marine mammal monitoring and mitigation plan must enumerate the number of walruses and polar bears encountered during specified exploration activities, estimate the number of incidental takes that occurred during specified exploration activities, and evaluate the effectiveness of prescribed mitigation measures.

(ii) Applicants must fund an independent peer review of proposed monitoring plans and draft reports of monitoring results. This peer review will consist of independent reviewers who have knowledge and experience in statistics, marine mammal behavior, and the type and extent of the proposed operations. The applicant will provide the results of these peer reviews to the Service for consideration in final approval of monitoring plans and final reports. The Service will distribute copies of monitoring reports to appropriate resource management agencies and co-management organizations.

(3) Cooperate with the Service and other designated Federal, State, and local agencies to monitor the impacts of oil and gas exploration activities in the Chukchi Sea on walruses or polar bears.

Where insufficient information exists to evaluate the potential effects of proposed activities on walruses, polar bears, and the subsistence use of these resources, holders of Letters of Authorization may be required to participate in joint monitoring and/or research efforts to address these information needs and insure the least practicable impact to these resources. Information needs in the Chukchi Sea include, but are not limited to:

(i) Distribution, abundance, and habitat use patterns of walruses and polar bears in offshore environments; and

(ii) Cumulative effects of multiple simultaneous operations on walruses and polar bears.

(c) *Reporting requirements.* Holders of Letters of Authorization must report the results of specified monitoring activities to the Service's Alaska Regional Director (see 50 CFR 2.2 for address).

(1) *In-season monitoring reports.*

(i) *Activity progress reports.*—Operators must keep the Service informed on the progress of authorized activities by:

(A) Notifying the Service at least 48 hours prior to the onset of activities;

(B) Providing weekly progress reports of authorized activities noting any significant changes in operating state and or location; and

(C) Notifying the Service within 48 hours of ending activity.

(ii) *Walrus observation reports.*—The operator must report, on a weekly basis, all observations of walruses during any Industry operation. Information within the observation report will include, but is not limited to:

(A) Date, time, and location of each walrus sighting;

(B) Number of walruses: sex and age;

(C) Observer name and contact information;

(D) Weather, visibility, and ice conditions at the time of observation;

(E) Estimated range at closest approach;

(F) Industry activity at time of sighting;

(G) Behavior of animals sighted;

(H) Description of the encounter;

(I) Duration of the encounter; and

(J) Actions taken.

(iii) *Polar bear observation reports.*—The operator must report, within 24 hours, all observations of polar bears during any Industry operation. Information within the observation report will include, but is not limited to:

(A) Date, time, and location of observation;

(B) Number of bears: sex and age;

(C) Observer name and contact information;

(D) Weather, visibility, and ice conditions at the time of observation;

(E) Estimated closest point of approach for bears from personnel and facilities;

(F) Industry activity at time of sighting, possible attractants present;

(G) Bear behavior;

(H) Description of the encounter;

(I) Duration of the encounter; and

(J) Actions taken.

(iv) *Notification of incident report.*—Reports should include all information specified under the species observation report, as well as a full written description of the encounter and actions taken by the operator. The operator must report to the Service within 24 hours:

(A) Any incidental lethal take or injury of a polar bear or walrus; and

(B) Observations of walruses or polar bears within prescribed mitigation-monitoring zones.

(2) *After-action monitoring reports.*

The results of monitoring efforts identified in the marine mammal monitoring and mitigation plan must be submitted to the Service for review within 90 days of completing the year's activities. Results must include, but are not limited to, the following information:

(i) A summary of monitoring effort including: total hours, total distances, and distribution through study period;

(ii) Analysis of factors affecting the visibility and detectability of walruses and polar bears by specified monitoring;

(iii) Analysis of the distribution, abundance, and behavior of walrus and polar bear sightings in relation to date, location, ice conditions, and operational state; and

(iv) Estimates of take based on density estimates derived from monitoring and survey efforts.

#### **§ 18.119 What are the information collection requirements?**

(a) We 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. The Office of Management and Budget has approved the collection of information contained in this subpart and assigned control number 1018–0139. You must respond to this information collection request to obtain a benefit pursuant to section 101(a)(5) of the Marine Mammal Protection Act. We will use the information to:

(1) Evaluate the application and determine whether or not to issue specific Letters of Authorization and;

(2) Monitor impacts of activities conducted under the Letters of Authorization.

(b) You should direct comments regarding the burden estimate or any other aspect of this requirement to the Information Collection Clearance

Officer, U.S. Fish and Wildlife Service,  
Department of the Interior, Mail Stop  
222 ARLSQ, 1849 C Street, NW.,  
Washington, DC 20240.

Dated: May 1, 2008.

**Lyle Lavery,**

*Assistant Secretary for Fish and Wildlife and  
Parks.*

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**BILLING CODE 4310-55-P**