

disturbed by vessels than walrus hauled out on land or ice. In addition, barges and vessels associated with Industry activities travel in open water and avoid large ice floes or land where walrus are likely to be found. Thus, vessel activities are likely to impact at most a few walrus.

*D. Aircraft Traffic*—Aircraft overflights may disturb walrus. Reactions to aircraft vary with range, aircraft type, and flight pattern, as well as walrus age, sex, and group size. Adult females, calves, and immature walrus tend to be more sensitive to aircraft disturbance. Most aircraft traffic, however, is in nearshore areas, where there are typically few to no walrus.

## 2. Physical Obstructions

Based on known walrus distribution and numbers in the Beaufort Sea near Prudhoe Bay, it is unlikely that walrus movements would be displaced by offshore stationary facilities, such as the Northstar or Endicott, or vessel traffic. There was no indication that the walrus that used Northstar Island as a haulout in 2001 was displaced from its movements. Vessel traffic could temporarily interrupt the movement of walrus, or displace some animals when vessels pass through an area. This displacement would probably have minimal or no effect on animals and would last no more than a few hours at most.

## 3. Contact With Releases of Oil or Waste Products

The potential releases of oil and waste products associated with oil and gas exploration and production during the open-water season and the associated potential to disturb walrus are discussed following the polar bear discussion in this section.

### *Polar Bear*

Oil and gas activities could impact polar bears in various ways during both open-water and ice-covered seasons. These impacts could result from the following: (1) Noise from stationary operations, construction activities, vehicle traffic, vessel traffic, aircraft traffic, and geophysical and geological exploration activities; (2) physical obstruction, such as a causeway or an artificial island; (3) human-animal encounters; and (4) oil spills or contact with hazardous materials or production wastes.

## 1. Noise Disturbance

Noise produced by Industry activities during the open-water and ice-covered seasons could potentially result in takes of polar bears. During the ice-covered

season, denning female bears, as well as mobile, non-denning bears, could be exposed to oil and gas activities and potentially affected in different ways. The best available scientific information indicates that female polar bears entering dens, or females in dens with cubs, are more sensitive than other age and sex groups to noises.

Noise disturbance can originate from either stationary or mobile sources. Stationary sources include: Construction, maintenance, repair, and remediation activities; operations at production facilities; flaring excess gas; and drilling operations from either onshore or offshore facilities. Mobile sources include: Vessel and aircraft traffic; open-water seismic exploration; winter vibroseis programs; geotechnical surveys; ice road construction and associated vehicle traffic; drilling; dredging; and ice-breaking vessels.

*A. Stationary Sources*—All production facilities on the North Slope in the area to be covered by this rulemaking are currently located within the landfast ice zone. Typically, most polar bears occur in the active ice zone, far offshore, hunting throughout the year; although some bears also spend a limited amount of time on land, coming ashore to feed, den, or move to other areas. At times, usually during the fall season when the ice edge is near shore and then quickly retreats northward, bears may remain along the coast or on barrier islands for several weeks until the ice returns.

During the ice-covered season, noise and vibration from Industry facilities may deter females from denning in the surrounding area, even though polar bears have been known to den in close proximity to industrial activities. In 1991, two maternity dens were located on the south shore of a barrier island within 2.8 km (1.7 mi) of a production facility. Recently, industrial activities were initiated while two polar bears denned close to the activities. During the ice-covered seasons of 2000–2001 and 2001–2002, dens known to be active were located within approximately 0.4 km and 0.8 km (0.25 mi and 0.5 mi) of remediation activities on Flaxman Island without any observed impact to the polar bears.

In contrast, information exists indicating that polar bears within the geographic area of these regulations 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 rollagon traffic, which occurred 250–500 m from the den site. While such events may have occurred, information indicates they have been

infrequent and isolated, and will continue to be so in the future.

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 could result in a human-bear encounter, which could result in unintentional harassment, lethal take, or intentional hazing (under separate authorization) of the bear.

*B. Mobile Sources*—In the southern Beaufort Sea, during the open-water season, polar bears spend the majority of their lives on the pack ice, which limits the chances of impacts on polar bears from Industry activities. Although polar bears have been documented in open water, miles from the ice edge or ice floes, this is a relatively rare occurrence. In the open-water season, Industry activities are generally limited to vessel-based exploration activities, such as ocean-bottom cable (OBC) and shallow hazards surveys. These activities avoid ice floes and the multi-year ice edge.

*C. Vessel Traffic*—Vessel traffic would most likely result in short-term behavioral disturbance only. During the open-water season, most polar bears remain offshore in the pack ice and are not typically present in the area of vessel traffic. Barges and vessels associated with Industry activities travel in open water and avoid large ice floes.

*D. Aircraft Traffic*—Routine aircraft traffic should have little to no effect on polar bears. However, extensive or repeated overflights of fixed-wing aircraft or helicopters could disturb polar bears throughout the year. Behavioral reactions of non-denning polar bears should 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 may abandon or depart their dens early in response to noise and vibrations produced by extensive aircraft overflights. Mitigation measures, such as minimum flight elevations over polar bears, or areas of concern, and flight restrictions around known polar bear dens, are routinely implemented to reduce the likelihood that aircraft disturbs bears.

*E. Seismic Exploration*—Although polar bears are typically associated with the pack ice during summer and fall, open-water seismic exploration activities can encounter polar bears in the central Beaufort Sea in late summer or fall. It is unlikely that seismic exploration activities or other geophysical surveys during the open-