

hunting of all types tends to increase. Therefore, a reasonable compromise between CPA's seismic work and ringed seal hunting by Nuiqsut hunters would be for CPA to begin their work in the eastern portion of Harrison Bay and work westward. This will reduce the probability that ringed seal hunters who have an opportunity to hunt during the spring will encounter seismic operations that might interfere with their seal hunting.

Response: NMFS has included this recommendation in the subject IHA and will suggest such a strategy for future vibroseis activities in Harrison Bay. However, such a recommendation is contingent upon favorable ice conditions permitting an east-to-west mapping strategy. As a result, NMFS has made this a recommendation, not a requirement in the IHA. NMFS notes however, that the IHA requires CPA to communicate with the village of Nuiqsut as to location and timing of activities.

Comment 3: The AEWC also recommends a refinement of the previous mitigation measure might also reduce the chance that this seismic work could affect migrating bowhead whales. The AEWC recommends that CPA be required to first complete all work in waters where the depth is greater than three m (9.8 ft) (moving east to west), then go on to their work in waters where the depth is less than 3 m (9.8 ft).

Response: In general, NMFS believes that ice conditions would preclude working from deeper water landward early in the season. Vibroseis activities require a minimum ice depth of 3 to 4 ft (0.9 to 1.2 m) to support the equipment, therefore, standard operations are to move from shore onto grounded ice first, then moving offshore as conditions permit. However, because ringed seals are not normally found in water depths less than 3 m (0.9 ft), and because after about March 20, neonatal ringed seal pups may be exposed to vibroseis sounds, this recommendation has merit to mitigate impacts to adult ringed seals and pups. As a result, NMFS has added this recommendation to the IHA, recognizing that such a strategy would depend upon ice conditions and seismic survey objectives.

The effective source level of vibroseis sounds for horizontal propagation in shallow under ice waters, while uncertain, may at times be as high as 212 dB re (Malme *et al.*, 1989). Received levels would be expected to diminish below 180 dB within 100 m (328 ft) (BP, 1997). Holliday *et al.* (1984) as cited in Richardson *et al.* (1995) estimated that

in-water vibroseis sounds would diminish to the ambient noise level (about 70 dB) at distances of 3.5 to 5 km (2.2 to 3.1 mi). Since the spring leads tend north and east of Pt. Barrow, NMFS believes that Harrison Bay would be well south of any such lead, even during unusually open conditions. As a result, NMFS does not believe that vibroseis sounds would reach the offshore leads and influence bowhead whale behavior.

Comment 4: The AEWC recommends that CPA should be required to work out a Conflict Avoidance Agreement (CAA) with the AEWC to ensure that there is no impact to the bowhead migration. The issues that the AEWC will focus on are timing and location of the late-season activities.

Response: Based on the response to comment 3, NMFS does not believe that there will be any impact to bowhead whales because of the distance between vibroseis operations and the offshore leads used by bowheads during their eastward migration. Generally, CAAs are limited to activities that have the potential to disturb bowheads just prior to, and during the bowhead subsistence hunt and therefore, would be subject for discussion and resolution during the CAA negotiations. Therefore, because the CAA is intended to reduce impacts to the subsistence harvest of bowhead whales, if bowhead whales are unlikely to be taken, a CAA is not warranted. Finally, NMFS is unaware that there is a spring harvest of bowhead whales in the offshore waters of Harrison Bay that would warrant NMFS encouraging CPA to seek resolution of impacts on the bowhead harvest. It should be noted that a CAA is a formal agreement between the activity's participants and the AEWC. NMFS does not play a role in its development or implementation.

Comment 5: The MMC believes that the preliminary determinations made by NMFS seem reasonable provided that, prior to commencing on-ice seismic surveys after mid-March, a survey using experienced field personnel and trained dogs be conducted to identify potential seal structures along the planned on-ice seismic transmission routes. As noted in previous MMC correspondence, the MMC believes that the use of trained dogs is the only reliable method for locating seal lairs and other structures.

Response: As noted in CPA's application, and confirmed by CPA during the October 30, 2002, CPA will utilize trained dogs for any offshore vibroseis work that takes place after March 20, 2003, in waters ≥ 3 m (9.8 ft).

Comment 6: The MMC believes that in the event that trained dogs are not available, NMFS should not accept monitoring by humans as an alternative

until it has been demonstrated that such monitoring is as effective as that carried out using dogs.

Response: NMFS does not agree with the recommendation of the MMC. There are only one or two individuals available in Alaska that have dogs trained to locate ringed seal lairs. These individuals may also have work, such as conducting scientific research, that would make them unavailable for monitoring at the precise time they might be needed. NMFS believes that, if necessary, trained dogs should be available first to activities that have the greatest potential for injury or mortality to ringed seals and/or their young, such as construction of ice roads.

Comment 7: The MMC also notes that CPA is planning to conduct surveys to a distance of 150 m (492 ft) on each side of all transit routes and recommends that such surveys be made a requirement of the IHA.

Response: This mitigation measure was proposed by CPA and has been incorporated by NMFS into CPA's IHA.

Comment 8: The MMC recommends that should a mortality or serious injury of a seal occur, the authorization specify that operations be suspended while NMFS determines whether steps can be taken to avoid further injuries or mortalities or whether an incidental take authorization under section 101(a)(5)(A) of the MMPA to cover such taking is needed.

Response: Since the taking by serious injury or mortality of ringed seals, or any taking of any other species of marine mammals is prohibited under this IHA, any incidents must be reported to the Regional Administrator, NMFS, or his designee, immediately. As stated in the IHA, takings in violation of the IHA may result in the modification, suspension or revocation of the IHA, depending upon the initial determination of the Regional Administrator.

Comment 9: Even though the effects of the activities proposed by the applicant, by themselves, are likely to be negligible, the MMC is concerned that the cumulative impacts of such activities in combination with similar activities being carried out elsewhere in the Beaufort Sea may, at some point, have more than negligible impacts on marine mammal populations. As such, the MMC recommends that the monitoring programs for such activities be expanded to enable NMFS to assess whether and, if so, to what extent long-term, cumulative effects may be occurring. Such information is essential for ensuring that subtle changes occurring over short periods of time (i.e., seasonally or annually) do not have