

Reporting

A report will be submitted to NMFS within 90 days after the end of the acoustic measurement program in the GOM. The report will describe the operations that were conducted, the marine mammals that were detected near the operations, and at least some of the results of the acoustical measurements to verify the safety radii. (Data from the LDEO spar buoy are expected to be available quickly, but it is uncertain how quickly the EARS data will be available given the nature of the EARS buoys.) The report will be submitted to NMFS, providing full documentation of methods, results, and interpretation pertaining to all monitoring tasks with the possible exception of the backup EARS data. The 90-day report will summarize the dates and locations of seismic operations, sound measurement data, marine mammal sightings (dates, times, locations, activities, associated seismic survey activities), and estimates of the amount and nature of potential take of marine mammals by harassment or in other ways.

Estimates of Take by Harassment

As described in proposed authorization notice (April 11, 2003; 68 FR 17773) and in the LDEO application, animals subjected to sound levels greater than 160 dB may alter their behavior or distribution, and, therefore, might be considered to be taken by harassment. However, the 160-dB criterion, used by NMFS as an indicator of where Level B harassment may result from impulse sounds, is based on studies of baleen whales. Odontocete hearing at low frequencies is relatively insensitive, and the dolphins generally appear to be more tolerant of strong sounds than are most baleen whales. For that reason, it has been suggested that for purposes of estimating incidental harassment of odontocetes, a 170-dB criterion might be appropriate.

All anticipated takes would be Level B harassment takes involving temporary changes in behavior. The mitigation measures to be applied by LDEO will minimize the possibility of injurious takes during the planned acoustic calibration project in the northern GOM. The estimate of the number of marine mammals that might be taken by harassment is based on a consideration of the number of marine mammals that might be disturbed by operations with the specific airgun arrays planned for each of the calibration runs past the spar buoy. LDEO's initial estimates of the numbers that might be disturbed assume

that, on average, cetaceans exposed to airgun sounds with received levels ≥ 160 dB re 1 μ Pa (rms) might be sufficiently disturbed to be "taken by harassment." The best estimate also includes an allowance for four extra source-vessel transits past the spar buoy in order to obtain the required calibration data and, therefore, is an overestimate if the calibrations measurements require only six transits. The best estimates take account of data on marine mammal abundance from previous surveys in that area.

The anticipated radii of influence of the multi-beam sonar and the sub-bottom profiler are much less than that for the airgun array (see previous discussion). It is assumed that any marine mammal close enough to be affected by the multi-beam sonar or the sub-bottom profiler would already be affected by the airguns. Therefore, no additional takings by harassment would occur for animals that might be affected by the multi-beam sonar or the sub-bottom profiler.

Estimates of Take by Harassment for the GOM

Extensive aircraft- and ship-based surveys have been conducted for marine mammals in the GOM, including the area where the calibration study will be conducted (Davis *et al.*, 2000, 2002; Wursig *et al.*, 2000; Baumgartner *et al.*, 2001). However, oceanographic and other conditions strongly influence the distribution and numbers of marine mammals present in an area (Davis *et al.*, 2002). Thus, for some species the densities derived from recent surveys may not be representative of the densities that will be encountered during the proposed acoustical calibration study. Table 3 in the LDEO application gives the densities for each species or species group of marine mammals in LDEO's proposed study area based on the 1996/97 GulfCet II surveys (Davis *et al.*, 2000). The densities from the GulfCet studies had been corrected by the original authors for detectability bias but not for availability bias. Therefore, in Table 3, LDEO has adjusted the originally reported densities and population estimates to account for availability bias. Based on those densities, the numbers of each species that might be taken by harassment and the requested level of take by harassment are shown in Table 3. The LDEO application is available upon request (see ADDRESSES).

Dolphins account for 94 percent of the best estimate of takes (i.e., 486 of 520 animals). There is no general agreement regarding any alternative "take" criterion for dolphins exposed to airgun

pulses. However, if only those dolphins exposed to ≥ 170 dB re 1 μ Pa (rms) were affected sufficiently to be considered "taken by harassment", then the best estimate for dolphins would be 183 rather than 486. This is based on the predicted 170 dB radii around the 2 GI gun and 20-airgun arrays (155 m (508 ft) and 3,420 m (11, 220 ft), respectively). This number of 183 animals is considered by LDEO to be a more realistic "best estimate" of the number of dolphins that may be disturbed (i.e., Level B harassment). This number is about 0.1 percent of the estimated GOM population of dolphins (approx. 165,715). Therefore, the total number of dolphins likely to react behaviorally is considerably lower than the estimated 486 animals.

Of the 520 marine mammals that might be exposed to airgun sounds with received levels ≥ 160 dB re 1 μ Pa (rms), an estimated two would be sperm whales. Two sperm whales represent 0.4 percent of the estimated GOM population of about 530 sperm whales.

Coastal Zone Management Act Consistency

On May 7, 2003, the Florida DEP noted that, based on the information contained in the NMFS notice (April 11, 2003, 68 FR 17773) and the comments provided by State reviewing agencies, the State determined that the proposed action by LDEO and NMFS is consistent with the Florida Coastal Management Program.

Endangered Species Act (ESA)

NMFS has concluded consultation under section 7 of the ESA on NMFS' issuance of an IHA to take small numbers of marine mammals, by harassment, incidental to conducting calibration measurements of its seismic array in the GOM by LDEO. The finding of that consultation was that this study is not likely to jeopardize the continued existence of marine species listed as threatened or endangered under the ESA. No critical habitat has been designated for these species in the GOM; therefore, none will be affected. A conservation recommendation was made to ensure that the safety zone is clear of sea turtles prior to ramp up. This recommendation has been implemented through the IHA to LDEO. A copy of the Biological Opinion is available upon request (see ADDRESSES).

National Environmental Policy Act (NEPA)

On March 10, 2003, the National Science Foundation (NSF) made a determination, based on information contained within its Environmental