

shut-down radius; this is desirable because mammals may not be observed while submerged, and might move towards the acoustic sources during dives.

Airgun operations will not resume until the marine mammal is observed outside the safety radius or a minimum of 15 minutes has elapsed since the last sighting. Once the safety zone is clear of marine mammals, the observer will advise that seismic surveys can recommence.

Gradual ramp-up of the output of the airgun array, a standard mitigation procedure during seismic surveys employing numerous guns of varying size, is inapplicable to the proposed operations which use only two small sound sources with a small total air discharge volume (90 in3).

Course Alteration

If a marine mammal is detected at any range beyond the 225 m (738 ft) safety radius but, based on its position and the relative motion, appears to be on a converging course with the ship while profiling is underway, the vessel will be maneuvered in an attempt to maintain a range greater than the shut-down radius. The marine mammal activities and movements relative to the seismic vessel will be closely monitored to ensure that the marine mammal does not approach within the safety radius. If the mammal appears likely to enter the safety radius, further mitigative actions will be taken, i.e., either further course alterations or shutdown of the airguns.

Because of the ineffectiveness of mammal observers during darkness (even though the vessel is equipped with night-vision binoculars), seismic reflection profiling will be concentrated during daylight hours. As noted earlier, there are just 1–3 occasions on each leg when the scientific objectives require collection of seismic profiles that are too long to complete in a single daylight period, and limited nighttime profiling is needed to allow completion of the marine geophysical research. In no instance will seismic profiling be initiated during darkness, a situation where unobservable mammals would be at risk from the sudden onset of G.I.-gun noise.

Marine Mammal Monitoring

Effective implementation of these procedures requires surveillance by appropriately equipped skilled observers, who will monitor for marine mammals in the vicinity of the array. Each leg of the cruise will be staffed with two observers who have previously worked for the Southwest Fisheries Science Center of NMFS, and who are

recommended by the Center. These observers will share surveillance duties during daylight hours, and be responsible for computer entry of their observations while off watch. They will be equipped with binoculars and have access to the 50X “big-eye” binoculars mounted on the *Revelle*’s bridge (though their normal station, except in inclement weather will be outside on the upper deck). For estimating the range of marine mammals that are sighted, the observers will use the optical fixed-interval range-finder described by Heinemann (1981); this instrument relies on measuring the angle between the mammal and the visual horizon, by an observer at known height above sea-level. The observers will be in wireless communication with ship officers on the bridge and scientists in the vessel’s operations laboratory, so they can advise promptly of the need for avoidance maneuvers or G.I. gun shut-down.

Monitoring and Reporting

Vessel-based Visual Monitoring

SIO proposes to conduct marine mammal monitoring of its seismic surveys in the ETP in order to satisfy the anticipated requirements of the IHA. Monitoring of marine mammals by experienced observers will occur during all daylight hours of the 3 legs of the cruise on the *Revelle*, whether or not G.I. guns are in operation. Except in bad weather, when they will occupy the bridge, observers will be stationed outside, forward on the 03 deck at a height of 9 m (30 ft) above the waterline; this has proved to be an effective station for marine mammal surveillance during previous mammal and seabird monitoring exercises from the *Revelle*.

Reporting

Observers will record their observations and range measurements on tape, for subsequent transcription into NMFS format. When a marine mammal sighting is made, the following information about the sighting will be recorded: (1) Species, group size, age/size/sex categories (if determinable), behavior when first sighted and after initial sighting, heading (if consistent), bearing and distance from seismic vessel, sighting cue, apparent reaction to seismic vessel (e.g., none, avoidance, approach, paralleling, etc.), and behavioral pace; and (2) time, location, heading, speed, activity of the vessel (seismic activity or not), sea state, visibility, cloud cover, and sun glare. The data listed under (2) above will also be recorded at the start and end of each observation watch and during a watch,

and whenever there is a change in one or more of the variables.

Results from the vessel-based observations will provide: (1) the basis for real-time mitigation (airgun shutdown); (2) information needed to estimate the number of marine mammals potentially taken by harassment, which must be reported to NMFS; (3) data on the occurrence, distribution, and activities of marine mammals in the area where the seismic study is conducted; (4) information to compare the distance and distribution of marine mammals relative to the source vessel at times with and without seismic activity; and (5) data on the behavior and movement patterns of marine mammals seen at times with and without seismic activity.

A report will be submitted to NMFS within 90 days after the end of the seismic profiling program (before May 2004). The report will be submitted to NMFS, providing full documentation of methods, results, and interpretation pertaining to most all monitoring tasks. 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.

Endangered Species Act (ESA)

Under section 7 of the ESA, NMFS has begun consultation on the proposed issuance of an IHA under section 101(a)(5)(D) of the MMPA for this activity. Consultation will be concluded prior to the issuance of an IHA.

National Environmental Policy Act (NEPA)

An Environmental Assessment (EA) on a similar action for this area of the Pacific Ocean was prepared and released to the public on July 11, 2003 (68 FR 41314). The proposed acoustic survey described in this document will use acoustic instruments that are significantly less intense and will therefore have a significantly lower impact on the marine environment than acoustic sources addressed in the earlier EA. NMFS’ analysis resulted in a Finding of No Significant Impact (FONSI). Therefore, based on that EA and the IHA application from Scripps, NMFS has preliminarily determined that this action will not have a significant impact on the human environment. Accordingly, this proposed action qualifies for a categorical exclusion under NEPA and NOAA Administrative Order 216–6 and