

*Comment 2:* The Stop LFAS noted that in 2001, the State of California's Coastal Commission (CCC) did not have the benefit of information which has since come about as a result of recent litigation regarding noise issues and the potential harm which noise may have on marine mammals. Therefore, there is a need for greater environmental scrutiny than may have been suspected by the CCC over two years ago.

*Response:* On February 14, 2001, the CCC concluded that, with the monitoring and mitigation commitments the Navy has incorporated into their various testing and training activities on the Point Mugu Sea Range, including activities on SNI, and including the commitment to enable continuing CCC staff review of finalized monitoring plans and ongoing monitoring results, the activities are consistent with the marine resources, environmentally sensitive habitat and water quality policies (Sections 30230, 30240, and 30231) of the California Coastal Act. Federal regulations implementing the Coastal Zone Management Act (CZMA; 15 CFR part 930.46(a)) instituted procedures for supplemental coordination if, among other reasons, there is significant new information relevant to the proposed activity and its effect on any coastal use or resource. NMFS is unaware of any significant new information that would warrant supplemental coordination, but NMFS has forwarded this document to the CCC for review.

*Comment 3:* The Stop LFAS asked "whatever monitoring would there be to gauge underwater responses from submerged marine life? How do we know that panic and death would not be assured?"

*Response:* See response to comment 1. Essentially, most airborne noise will be reflected at the water surface, significantly limiting penetration into the water column. Also, since the airborne sounds are less than would cause TTS, and propagation of those sounds that penetrate the water surface would quickly reduce to insignificant levels, it is unlikely that any cetacean would be affected by launch noises. Therefore, underwater monitoring is not considered necessary. However, NMFS would welcome suggestions on how to establish a practical monitoring program given the infrequency of both launches, low density of offshore marine mammals and the need to ensure personnel safety during launches.

#### **Description of Habitat and Marine Mammals Affected by the Activity**

A detailed description of the Channel Islands/southern California Bight

ecosystem and its associated marine mammals can be found in several documents (Le Boeuf and Brownell, 1980; Bonnell *et al.*, 1981; Lawson *et al.*, 1980; Stewart, 1985; Stewart and Yochem, 2000; Sydeman and Allen, 1999) and is not repeated here.

Many of the beaches in the Channel Islands provide resting, molting or breeding places for species of pinnipeds including: northern elephant seals (*Mirounga angustirostris*), harbor seals (*Phoca vitulina*), California sea lions (*Zalophus californianus*), northern fur seals (*Callorhinus ursinus*), and Steller sea lions (*Eumetopias jubatus*). On SNI, three of these species, northern elephant seals, harbor seals, and California sea lions, can be expected to occur on land in the area of the proposed activity either regularly or in large numbers during certain times of the year. Descriptions of the biology and distribution of these three species and others in the region can be found in NAWS (2002), Stewart and Yochem (2000, 1994), Sydeman and Allen (1999), Lowry *et al.* (1996), Schwartz (1994), Lowry (1999) and several other documents (Barlow *et al.*, 1997; NMFS, 2000; NMFS, 1992; Koski *et al.*, 1998; Gallo-Reynoso, 1994; Stewart *et al.*, 1987). General information on harbor seals and other marine mammal species found in Central California waters can be found in Caretta *et al.* (2001, 2002), which are available at the following URL: [http://www.nmfs.noaa.gov/prot\\_res/PR2/Stock\\_Assessment\\_Program/sars.html](http://www.nmfs.noaa.gov/prot_res/PR2/Stock_Assessment_Program/sars.html). Please refer to those documents and the application for further information on these species.

#### **Potential Effects of Target Missile Launches and Associated Activities on Marine Mammals**

As outlined in several previous NMFS documents, the effects of noise on marine mammals are highly variable, and can be categorized as follows (based on Richardson *et al.*, 1995):

- (1) The noise may be too weak to be heard at the location of the pinniped (i.e., lower than the prevailing ambient noise level, the hearing threshold of the animal at relevant frequencies, or both);
- (2) The noise may be audible but not strong enough to elicit any overt behavioral response;
- (3) The noise may elicit reactions of variable conspicuousness and variable relevance to the well being of the pinniped; these can range from temporary alert responses to active avoidance reactions such as stampedes into the sea from terrestrial haulout sites;

(4) Upon repeated exposure, pinnipeds may exhibit diminishing responsiveness (habituation), or disturbance effects may persist; the latter is most likely with sounds that are highly variable in characteristics, infrequent and unpredictable in occurrence (as are vehicle launches), and associated with situations that the pinniped perceives as a threat;

(5) Any anthropogenic noise that is strong enough to be heard has the potential to reduce (mask) the ability of pinnipeds to hear natural sounds at similar frequencies, including calls from conspecifics, and environmental sounds such as surf noise;

(6) If mammals remain in an area because it is important for feeding, breeding or some other biologically important purpose even though there is chronic exposure to noise, it is possible that there could be noise-induced physiological stress; this might (in turn) have negative effects on the well-being or reproduction of the animals involved; and

(7) Very strong sounds have the potential to cause temporary or permanent reduction in hearing sensitivity. In terrestrial mammals, and presumably marine mammals, received sound levels must far exceed the animal's hearing threshold for there to be any temporary threshold shift (TTS). For transient sounds, the sound level necessary to cause TTS is inversely related to the duration of the sound. Received sound levels must be even higher for there to be risk of permanent hearing impairment.

Sounds generated by the launches of Vandal and similar target missiles and smaller subsonic targets and missiles (BQM-34 or BQM-74 type), as they depart sites on SNI towards operational areas in the Point Mugu Sea Range, have the potential to result in the incidental harassment of seals and sea lions. Taking by harassment will potentially result from these launches when pinnipeds on the beaches near the launch sites are exposed to the sounds produced by the rocket boosters and the high-speed passage of the missiles as they depart the island on their routes to the Sea Range. However, the extremely rapid departure of the Vandal and other targets means that pinnipeds would be exposed to increased sound levels for very short time intervals (i.e., a few seconds). In addition, because launches are conducted relatively infrequently, neither physiological stress nor hearing related injuries are likely for pinnipeds exposed to more than a single launch event.

Noise generated from aircraft and helicopter activities associated with the