

Based on modeling of sound propagation in a free field situation, Burgess and Greene (1998) data were used by the Navy to predict that Vandal target launches from SNI could produce a 100-dBA acoustic contour that extends an estimated 4,263 m (13,986 ft) perpendicular to its launch track. In other words, Vandal target launch sounds are predicted to exceed the SEL (100 dBA) disturbance criteria for pinnipeds out to a distance of 4,263 m (13,986 ft) from the ALC. Northern elephant seals, harbor seals, and California sea lions haul out in areas within the perimeter of this 100-dBA contour for Vandal launches. For BQM-34 launches from ALC, the Navy assumes that the 100-dBA contour extends an estimated 1,372 m (4,500 ft), perpendicular to its launch track (C. Malme, Engineering and Scientific Services, Hingham, MA, unpublished data). Along the launch track and ahead of the BQM-34, the 100-dBA contour extends a shorter distance (549 m or 1,800 ft). For the smaller BQM-74 and Exocet missiles, the Navy predicts that the 100-dBA contours will be smaller still. The free field modeling scenario used to predict these acoustic contours does not account for transmission losses caused by wind, intervening topography, and variations in launch trajectory or azimuth. Therefore, the predicted 100-dBA contours may be smaller at certain beach locations and for different launch trajectories.

In general, the extremely rapid departure of the Vandal and smaller targets means that pinnipeds could be exposed to increased sound levels for very short time intervals (a few seconds) potentially leading to alert and startle responses from individuals on haul out sites in the vicinity of launches. Some animals may flee to the water. Since recorded observations of the responses of pinnipeds to Vandal launches along with post-launch surveys at the SNI haulouts have not shown injury, mortality, or extended biological disturbance, the Navy anticipates and NMFS concurs that the effects of the planned target launches will have no more than a negligible impact on pinniped populations.

Since the launches are relatively infrequent, and of brief duration, it is unlikely that the pinnipeds near the launch site will become habituated to launch sounds. Pinnipeds that haul out on beaches at the western end of SNI for extended periods, or that return to haul-out sites regularly over the course of the year, may be exposed to sounds of more than a single launch, and may be "harassed" more than once each year. However, given the infrequency and

brevity of these events, it is unlikely that much, if any, habituation to target missile launch activities will occur.

In addition, the infrequent and brief nature of these sounds will cause masking for not more than a very small fraction of the time (usually less than 2 seconds per launch) during any single day. These occasional and brief episodes of masking will have no significant effects on the abilities of pinnipeds to hear one another or to detect natural environmental sounds that may be relevant to the animals.

Numbers of Marine Mammals Expected To Be Taken by Harassment

NAWS provisionally estimates that the following numbers of pinnipeds may be subject to Level B harassment annually: 1,403 northern elephant seals, 457 harbor seals, and 1,637 California sea lions. To determine the number of takings by harassment annually, one would need to multiply those numbers by the number of launches conducted annually. The animals affected may be the same animals or may be different animals, depending upon the level of site fidelity of the species. Based on the results of recent monitoring of the haulouts, the estimated number of potential harassment takes would be significantly less than estimated under the two recent IHAs.

Effects of Target Missile Launches and Associated Activities on Subsistence Needs

There are no subsistence uses for these pinniped species in California waters, and, thus, there are no anticipated effects on subsistence needs.

Effects of Target Missile Launches and Associated Activities on Marine Mammal Habitat on SNI

Harbor seals, California sea lions, and northern elephant seals use various beaches around SNI as places to rest, molt, and breed. These beaches consist of sand (e.g., Red Eye Beach), rock ledges (e.g., Phoca Beach) and rocky cobble (e.g., Vizcaino Beach). Pinnipeds do not feed when hauled out on these beaches, and the airborne launch sounds will mostly reflect or refract from the water surface and, except for sounds within a diameter of approximately 30 degrees directly below the launch vehicle, will not penetrate into the water column. The sounds that do penetrate will not persist in the water for more than a few seconds. Therefore, the Navy does not expect that launch activities will have any impact on the food or feeding success of these animals. The solid rocket booster from the Vandal target and the JATO bottles

from the BMQs are jettisoned shortly after launch and fall into the sea west of SNI. While it is theoretically possible that one of these boosters might instead land on a beach, the probability of this occurring is very low. Fuel contained in the boosters and JATO bottles is consumed rapidly and completely, so there would be no risk of contamination even if a booster or bottle did land on the beach. Overall, the proposed target missile launches and associated activities are not expected to cause significant impacts on habitats or on food sources used by pinnipeds on SNI.

Mitigation

To avoid additional harassment to pinnipeds on beach haul out sites and to avoid any possible sensitizing or predisposing of pinnipeds to greater responsiveness towards the sights and sounds of a launch, NAWCWD Point Mugu will limit its activities near the beaches in advance of launches. Existing safety protocols for Vandal launches provide a built-in mitigation measure. That is, personnel are normally not allowed near any of the pinniped beaches close to the flight track on the western end of SNI within 2 hours prior to a launch. Where practicable, NAWCWD Point Mugu will adopt the following additional mitigation measures when doing so will not compromise operational safety requirements or mission goals: (1) The Navy will attempt to limit launch activities during pinniped pupping seasons, particularly harbor seal pupping season; (2) the Navy will attempt not to launch vehicles at low elevation on launch azimuths that pass close to beach haul-out site(s); (3) the Navy will attempt to avoid multiple target launches in quick succession over haul-out sites, especially when young pups are present; and, (4) the Navy will attempt to limit launch activities during the night.

Monitoring

As part of its application, NAWS provided a monitoring plan, similar to that adopted for the 2001/2002 and 2002/2003 IHAs (*see* 66 FR 41834, August 9, 2001; 67 FR 56271, September 3, 2002), for assessing impacts to marine mammals from Vandal and smaller subsonic target and missile launch activities on SNI. This monitoring plan is described in their application (NAWS, 2002).

The Navy will conduct the following monitoring during the first year under an LOA and regulations.