

## **Marine Mammal Monitoring Report for Boom Exercise Drill at Naval Base Ventura County Point Mugu, September 2009**

In compliance with the Incidental Harassment Authorization issued to the Naval Base Ventura County Point Mugu (NBVCPM) on September 10, 2009, marine mammals were monitored by designated monitors (M. Ruane, F. Ferrara, and R. Kelley) during boom deployment exercise drills in Mugu Lagoon. Harbor seals (*Phoca vitulina*) were the only marine mammals documented utilizing the area during the project period. Biological monitoring and the boom exercise occurred from September 22-24, 2009.

Monitoring consisted of a census of all harbor seals within Mugu Lagoon before and after boom exercise and throughout exercise. Numbers, haul-out locations, and proximity to work location were recorded. Age class distribution of seals was not recorded due to difficulty in making accurate determinations between adults and pups. Horizontal visibility was not recorded in the field, as it could be more accurately determined utilizing recorded locations and NBVCPM's GIS map of Mugu Lagoon. Continuous monitoring occurred during all operations. Weather and tidal information were also recorded during continuous observation periods. Any military operation or non-military event occurring while the seals were being monitored that might have had an impact on seal behavior was also noted. Seal behavior was monitored with 10x40 binoculars and a spotting scope.

Approximately 12 hours of in-water boom exercise operations occurred (Day 1–3hrs, Day 2–23.5hrs, Day 3–5.5hrs). A range of 2-4 zodiacs were in the water at any given time. A total of 23.5 hours of biological monitoring was done by three different monitors. Two monitors were present during days one and two, and one monitor present during day three. This included observations made from shore and from one of the zodiacs on Day 1. Initial observations of seals were made before crews arrived at the exercise area to check numbers and locations of seals. Then, once the work crew entered the exercise area, all changes in seal behavior or location were noted. On average, there were about 150 seals in the exercise areas at the start of each morning. Pups and adults were not distinguished due to a lack of difference in size at this time of year and as a majority of seals were submerged.

No disturbance to seals was documented on Day 1 and Day 2. Approximately 81 seals were disturbed from mudflat haul outs and moved into water due to activities on Day 3 (additional details below). Additional seals that were partially submerged did float or swim away from locations due to activity on Day 3. Low numbers of disturbed seals were due to boom exercise occurring during high tides, in which a majority of the seals were in the water due to mudflat haul-outs being inundated.

### Day One Activities:

During the initial count most of the seals were in Locations 1 and 2, as shown on Map 1, for a total of approximately 150 seals. The day started out foggy, but observers could still see the extent of the exercise area from Observation Point A. The Harbor Buster (HB) was used on Day 1 which is a containment boom that is pulled by two zodiacs, with one support zodiac. The HB started from the staging areas and slowly moved across estuary gradually working their way east. (See Photos: Day One for pictures of the staging area.) The seals laying on the mudflats in Locations 1 and 2 did not move from haul out due to the distance of the activity from the haul-out. Approximately 10 to 15 seals swam nearby the zodiacs to investigate activity. These seals were individuals that were already in the water and were not hazed into the water by the exercise. As the tide rose, there were about 66 seals that were submerged in banana position in groups of

about 20 in Locations 1, 2 and 3. At 09:34 there was a missile launch with seals lying on the shore raising their heads to look around, but quickly laid their heads back down. It is NBVCPM's opinion that the estimated "harassment" or disturbance of seals during this day's activities was zero.

#### Day Two Activities:

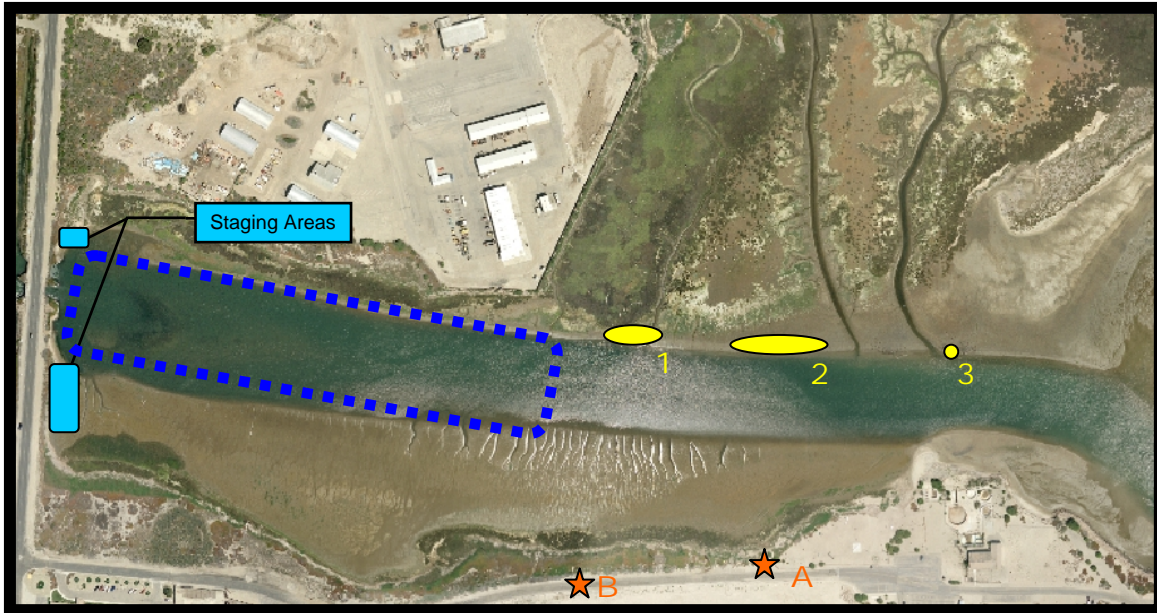
Fog greatly impaired visibility for the second day of the spill exercise. From Observation Point A (see Map 2), seals could only be seen at Location 1 (13 seals on shore) and Location 2 could not be seen for the first half hour of monitoring. When the fog first cleared, 17 seals were at Location 1 and approximately 125 at Location 2. Visibility would clear sporadically and monitors could occasionally view seals on the opposite bank. Two booms were placed in Mugu Lagoon as shown in Map 2. When seals could be seen, they did not seem disturbed by the boom exercises, due to the distance of the activity. At the end of the day's activities, approximately 10-15 seals were swimming in the lagoon and 125 were submerged in banana position at Location 2. It is NBVCPM's opinion that the estimated "harassment" or disturbance of seals during this day's activities was zero. Photos from Day 2 attached.

#### Day Three Activities:

During the initial count for the day at from Observation Point A, at Location 1: 117 seals were hauled-out on mudflats, at Location 2: six seals were in banana position submerged in the water, and at Location 4: 23 seals submerged in banana position (see Map 3). Booms and Zodiacs entered the water at the staging area. The seals near Location 2 gradually began swimming around as the boom drew near. They did not leave the immediate area. As the boats moved closer to the seals lying on the mudflats (Location 1), seals were watching the boats, but none entered the water until the boats were approximately 20 yards away. At this point, approximately 20 seals slowly entered the water, while of the remaining seals, one third were raising their heads to look at the activities. At about 10 yards away, approximately one half of the seals (48) had entered the water. Once the boats and booms were alongside the seals (approximately 20 feet away from seals), all but 36 seals had entered the water. In total 81 were displaced from haul-out.




Once the boats and booms passed the seals, crews began to set up the booms at location as indicated on Map 3. At this point the monitor moved to observation point B. As the boats and booms were in working in the creek mouth (approximately 1400ft away from seals), the 36 seals that remained hauled-out were joined by other seals, however by the time the seal numbers at Location 5 peaked at 80 seals, the seals were  $\frac{3}{4}$  submerged in the water due to rising tides. When the workers took their lunch break, the boats were left at the mouth of the estuary to avoid having to pass by the seals again and have them move away from Location 5. The exercise continued after lunch with no associated disturbance. As the exercise was completed, the boats slowly made their way back to the staging area with boom in tow. Approximately 73 seals were  $\frac{3}{4}$  submerged in water before the boats passed, with 30 seals floating away from location as the first boat passed and the remaining floating away as the last boat passed. Within twenty minutes, 34 seals returned to where previously submerged at Location 5 and monitoring ceased.

It is NBVCPM's opinion that the estimated displacement of seals during this day's activities was approximately 81. This number is reflective of seals that moved from on land haul-outs into the water and not submerged seals floating off and swimming away. Photos from Day 3 attached.

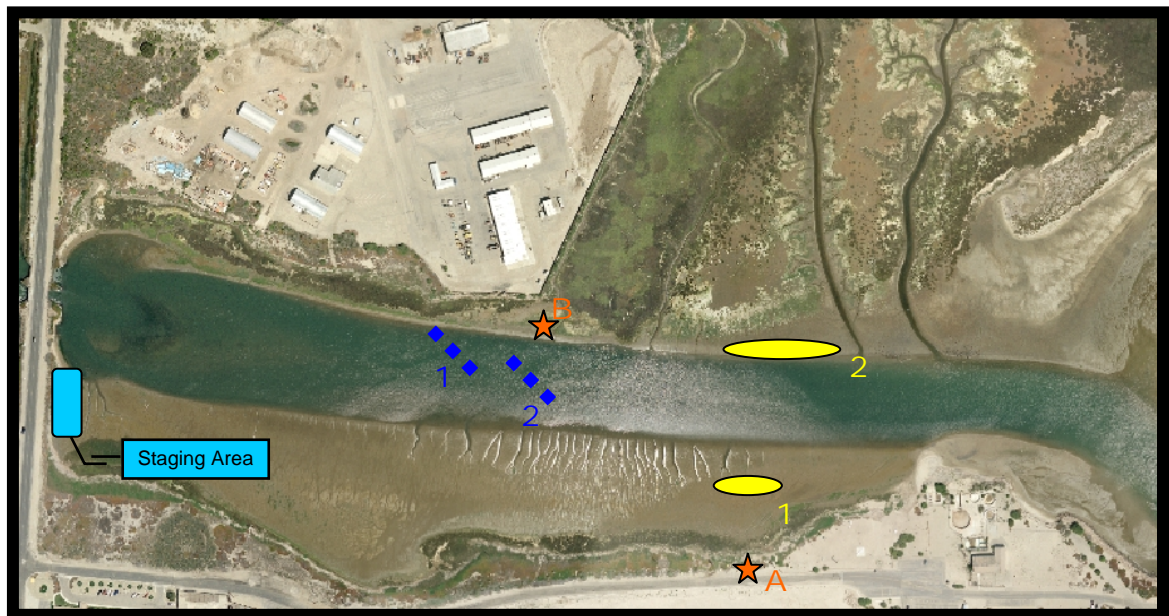


**Map 1: September 22, 2009**

**Legend:**




-  Harbor Buster Work Zone
-  Harbor Seal Locations
-  Observation Points

Map Created: September 30, 2009  
Aerial: 2007



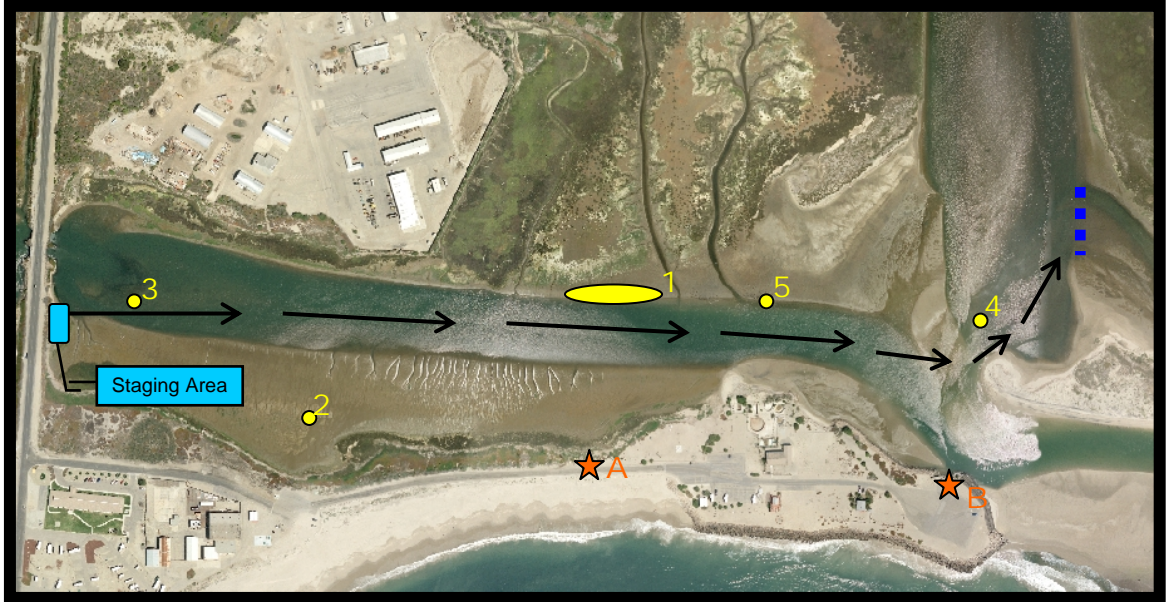
**Map 2: September 23, 2009**

**Legend:**





-  Boom Locations
-  Harbor Seal Locations
-  Observation Points

Map Created: September 30, 2009  
Aerial: 2007





**Legend:**

-  Boom Locations
-  General Path of Boom
-  Harbor Seal Locations
-  Observation Points

**Map 3: September 24, 2009**

Map Created: September 30, 2009  
Aerial: 2007



Photos: Day 2  
September 23, 2009



Photos: Day Three  
September 24, 2009