

Rare Southern California Sperm Whale Sighting

Dolphin/Whale Interaction Is Unique

IN MAY 2011, a rare occurrence took place off the Southern California coast. For the first time since U.S. Navy-funded aerial surveys began in the area in 2008, a group of 20 sperm whales, including four calves, was seen—approximately 24 nautical miles west of San Diego.

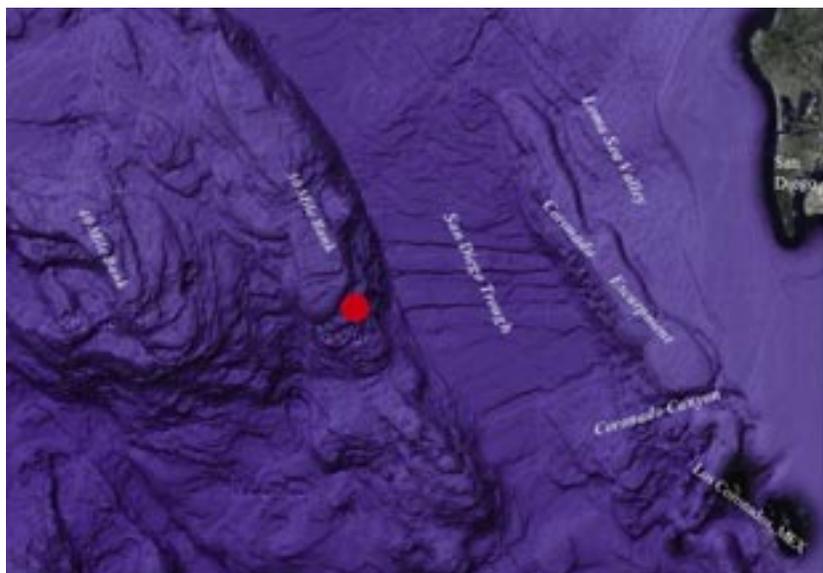
Operating under a National Marine Fisheries Service (NMFS) permit, the U.S. Navy has been conducting aerial surveys of marine mammal and sea turtle behavior in the near shore and offshore waters within the Southern California Range Complex (SOCAL) since 2008. During a routine survey the morning of 14 May 2011, the sperm whales were sighted on the edge of an offshore bank near a steep drop-off.

NMFS estimates that approximately 300 sperm whales are thought to occur year-round off California, primarily in offshore deep waters, with the highest abundance from April to mid-June and from August to mid-November. Visual sightings of sperm whales, however, are rare in the Southern California Bight, particularly so close to shore. (Note: A “bight” is a natural curve in the coastline.)

The sperm whale sighting off San Diego was exciting not only because of its rarity, but because there were also two species of dolphins, northern right whale dolphins and Risso’s dolphins, interacting with the sperm whales in a remarkable manner. To the knowledge of the researchers who conducted this aerial survey, this type of inter-species association has not been previously reported. Video and photographs were taken of the group over a period

of 67 minutes as the whales traveled slowly east and out over the edge of the underwater ridge. The adult sperm whales undertook two long dives lasting about 20 minutes each; the calves surfaced earlier, usually in the company of one adult whale. During these dives, the dolphins remained at the surface and appeared to wait for the sperm whales to re-surface.

Several minutes after the sperm whales were first seen, the Risso’s



Sperm whale sighting (red dot) location in relationship to key bathymetric features in Southern California.



Sperm whales with northern right whale dolphin (red arrow).

dolphins swam in-between the sperm whales, and one Risso's dolphin breached directly in front of a sperm whale. Subsequently, the adults moved closer together, positioning themselves so that the calves were surrounded by the adults. This appeared to be a defensive posture by the sperm whales, as adults typically protect calves from predators and whalers by tightly surrounding the calves, often with the adults' wide tails facing outside the group as a means of defense to hit potential predators. As documented on video, some of the Risso's dolphins charged towards the heads of the sperm whales on multiple occasions, followed by fast retreats. Sperm whale adults responded by dropping their lower jaw, exposing their white gums and teeth to the dolphins (notably, sperm whales only have teeth on their lower jaw) while making forceful blows/exhalations. In

fact, on several occasions, a Risso's dolphin swam perpendicular to the heads of about 10 sperm whales that were lined up in a row. Risso's dolphins appeared to direct their charges only towards adult sperm whales that had recently surfaced from long dives; they were not directed toward the four calves in the

group. The sperm whales may have been regurgitating their food when they were seen dropping their jaw and opening their mouths.

After the initial apparently aggressive interaction, the sperm whales appeared to slow down, spread out, and lie virtually motionless at the



Sperm whales mixed with northern right whale dolphins and Risso's dolphins (red arrow).



Sperm whale and calf photo sequence as a Risso's dolphin approaches from the front. Note the sperm whale's open white lower jaw (white color through water).

surface. The Risso's dolphins eventually worked their way into the more spread-out group of sperm whales. Both Risso's and northern right whale dolphins actually approached several sperm whale calves. They were not

seen to charge the calves and this time the adults did not appear to react to these approaches. The research team's overall impression was that the initial apparent antagonistic response became more neutral after about 20

minutes, and the sperm whales continued on their same traveling route. When the sperm whales were last seen, the dolphins were no longer observed in the vicinity.

Northern right whale dolphins intermingled with the Risso's dolphins and sperm whales, although they did not approach sperm whales as closely or abruptly as the Risso's dolphins. Northern right whale dolphins have been seen apparently following foraging Risso's dolphins on several occasions off the Southern California coast. Researchers suspect they are associating with the Risso's to help find prey, but this has not been established, as such observations are rare.

Risso's dolphins have been reported to behave aggressively with other cetacean species, including short-finned pilot whales. However, this



Sperm whales with Risso's dolphin approaching from the rear. The sperm whale at lower left is exhaling.

may be the first documented occurrence of head-on charging by Risso's dolphins to another cetacean species, accompanied by the jaw display response from sperm whales. Sperm whales have been seen clapping their jaws together in response to aggressive pilot whales in the Gulf of Mexico. Thus, jaw displays by sperm whales may be a counter-aggressive behavior. Apparent harassment of sperm whales by pilot whales and Risso's dolphins may cause sperm whales to regurgitate their food, allowing the aggressors to eat the regurgitated food. This is a feeding technique (kleptoparasitism) displayed by some birds, including jaegers and roseate terns.

The rare encounter described above is but one of many remarkable observations which have occurred during aerial surveys conducted to gather baseline data on many little known marine mammal species in Southern California. The region's relatively high animal density and species diversity—associated with high biological productivity caused by mixing of strong currents in the region—makes it an ideal location for marine



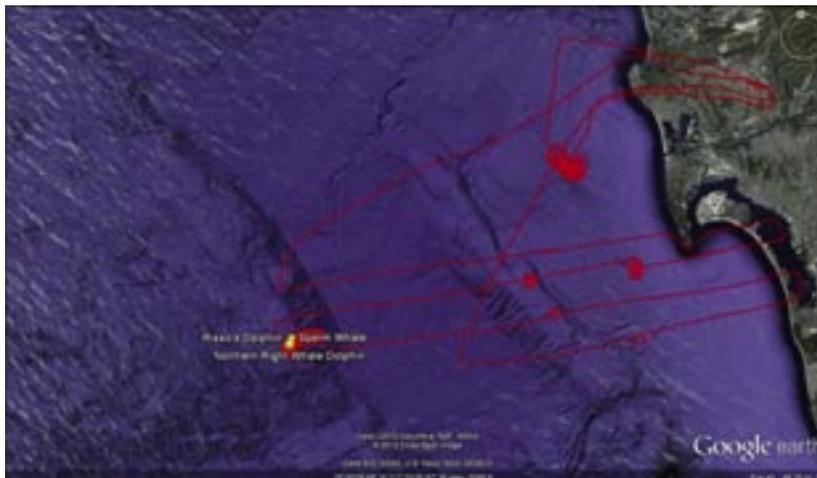
Sperm whale and calf.

mammal study. SOCAL scientists are currently analyzing data on the abundance, density, distribution, and behavior of different species of marine mammals within the range complex. These data provide valuable baseline information that can be compared to marine mammal occurrence and behavior during Navy training events. These studies currently represent the most current and extensive information on marine mammals in Southern California, and

provide detailed information on behavior of offshore species for which little has been published or is known. Due to the unusual nature of this sperm whale encounter, a detailed account is currently being prepared for submission to a peer-reviewed scientific journal as part of the U.S. Navy's ongoing goal to contribute to general knowledge and dissemination of information about marine mammals in the region.

The 2011 surveys were conducted on behalf of the Navy by Smultea Environmental Sciences under contract to HDR, Inc. [↕](#)

Photos by David Steckler under NMFS permit number 14451



Location of the sperm whale/dolphin sighting on 14 May 2011—24 nautical miles west of San Diego, California. Red lines are the tracklines followed by the observation airplane on this day.

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