

## SPERM WHALE WINTER PRESENCE IN THE TYRRHENIAN SEA, ITALY

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Little information is available about the dynamics of the sperm whale (*Physeter macrocephalus*) in the Mediterranean sea during the winter season. In the Pontino-Campano Archipelago, an area characterized by complex submarine canyon systems, the sperm whale summer presence was documented since 1991. However, its residency and movements within the study area were regularly investigated using photo-identification data collected in the summer season over a 6 year period (2003–2008).

In order to explore the occurrence of the species during winter months, the research effort was extended and 24 boat surveys were conducted from October 2007 to January 2008. Animals were detected using stereo towed hydrophones and Rainbow Click software and a total number of 1490 minutes of vocalizations were collected. We encountered four sperm whale groups (mean group size: 7,5; range: 4-11), one of them including a calf. Whales showed a preference for the deepest part (850 m) of the canyon of Cuma and close to the 700 m isobath off the northwest coast of Ventotene, where a mirror canyon system is located. While diving, whales appeared to be feeding on two occasions performing a large number of creaks and fast clicks. Socializing was the most relevant surface activity observed (63%), since whales spent up to two hours per sighting clustering at the surface. Moreover, during social behaviors sequences of codacreaks, squeals and codas were recorded. Only one identified whale was photographically re-captured and 9 new individuals were added to the existing catalogue (n=29), reaching a significant peak in the recruitment rate.

It is unclear whether the species have regular movements and distribution patterns within the Mediterranean Sea due to different association models between individuals. Our data suggest that environmental (the "canyon" effect) and ecological features (prey fluctuation) too may influence the distribution and movements of the sperm whale.