

MAY THE IDEA OF PARTITIONING THE PELAGOS SANCTUARY IN AREAS OF SPECIFIC INTERESTS SOLVE THE PROBLEM OF HOW TO PROTECT 100,000KM²? THE SPERM WHALE CASE

Paola Tepsich^{1*}, Massimiliano Rosso¹, Maurizio Wurtz² and Aurelie Moulins¹

¹ CIMA Research Foundation - paola.tepsich@cimafoundation.org

² Dipartimento di biologia - Università di Genova

Abstract

The 2009 acoustic "scan" realized inside the Pelagos Sanctuary aimed to get information on the sperm whale distribution. Results indicate some aggregations and specifically close to hotspots determined by a previous study. This information can be used to concentrate mitigation effort needed for Pelagos Sanctuary's efficiency.

Keywords: Deep Waters, Cetacea, Ligurian Sea

Introduction

The establishment of the Pelagos Sanctuary is the first step that aims to focalize on the necessity to protect the cetacean and their ecosystem. However, its efficiency depends totally on the proposed mitigation instruments and on our knowledge of the different cetacean populations inhabiting the area. Indeed, the northwestern area being extensively used by maritime transport, fisheries, militaries as well as the coast, conflicts of interests slow down the processes of protection. At the same time, 8 species of cetaceans are considered as commonly seen in the Pelagos Sanctuary and the area is used differently by each one of them [1]. A possible alternative is to partition the Pelagos area in particular specific areas where one specific risk has to be solved for a specific species. Based on the 2009 "scan" realized for the ISHMAEL project inside the Pelagos Sanctuary, the study discusses the obtained sperm whale distribution according to hotspots previously characterized.

Material and methods

In 2009, a large "scan" of the Pelagos Sanctuary was realized by two vessels: *Menkab*, the research boat of the *Biology Department* of the *University of Genoa* and *Halifax*, the sailing boat of the NGO *Participe Futur*. The "scan" focuses on the area encompassed by the 500m and 2500m isobaths organized in 597 acoustic stations. On each station, we use an omni-directional hydrophones (with a range of about 3 NM from the station) to detect sperm whales. In some cases after the positive detection on *Menkab*, it has been decided to localize the animal with a prototype 3-D hydrophone in order to test the capacity to find the animal and continue eventually with photo-id protocol. Visual detection was also performed between the acoustic stations with 4 trained observers watching the 360° around the boat.

597 initial positions. In total, 42 were positive with sperm whales; 14 amongst positive stations are considered to detect different individuals (12 stations in the northern part of the sanctuary and 2 off Corsica; fig. 1). The probability to hear sperm whale is 0.06. The estimated number of animals encountered is 17 whales while 8 have been sighted. According to the 4 hotspots obtained by [2], 4 of the 12 stations of the northern part of the Pelagos Sanctuary are inside or close three of the hotspots. This result seems to confirm that specific areas are inhabited repeatedly by the species and thus this information can be used to design areas with major attention.

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References

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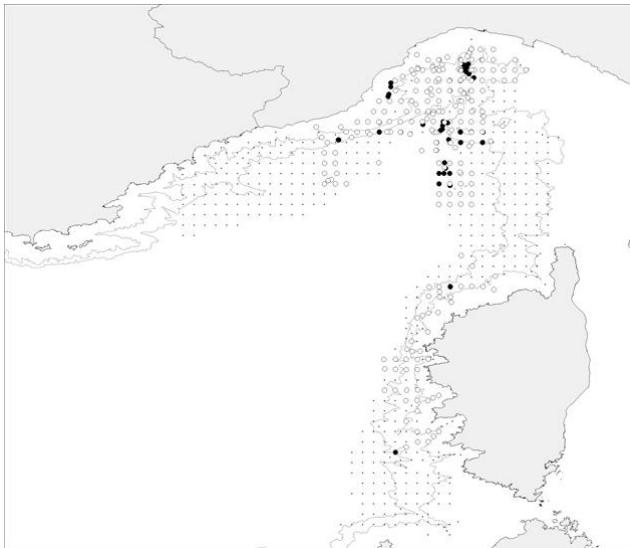


Fig. 1. Distribution of the initial 597 acoustic stations (small dots), 294 have been checked (white dots), 42 resulted positive to sperm whale presence (black dots). Isobaths of 1000m and 2000m are represented

Results and discussion

During 2009, about 294 acoustic stations were performed: 52 by *Halifax* in 18 days and 242 by *Menkab* in 23 days; however, only 189 were performed on the