PRESENCE AND ABUNDANCE OF BOTTLENOSE DOLPHINS ALONG THE EAST LIGURIAN COAST IN RELATION TO THE PLEASURE BOATING

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Introduction
This work investigates the presence and abundance of Cetaceans along the East Ligurian coast, in relation to the presence and abundance of the pleasure boat traffic. The study area is included in the Santuario Pelagos protected area, still being characterized by a high tourist activity (Fig. 1). The presence of Cetaceans in this coastal area has never been investigated and no data are available about the pleasure boat activity and its potential impact on the Cetacean fauna.

This research is part of the long term research programme named “Delfini Metropolitani”.

Aims
Analysis of the presence, habitat, home range and abundance estimate of Tursiops truncatus along the East Ligurian coast.

Analysis of the presence of Tursiops truncatus in relation to the pleasure boating.

Material and methods
Data were collected between January and December 2006 using a rubber boat (BWA, 5.10 m) equipped with an outboard motor (HONDA MARINE, 40 HP). Research tracks were recorded with GPS (GARMIN 12). A digital reflex photo-camera was used for individual photo-identification (NIKON, 40 HP). Research tracks were recorded with GPS (GARMIN 12). A digital reflex photo-camera was used for individual photo-identification (NIKON, D70). For abundance estimate, we used the mark-recapture technique, using the Schnabel1 and Schumacher-Eschmeyer2 estimators.

Results
53 surveys were carried out for a total of 245 hours spent at sea (Fig. 2) and 29 sightings: 25 of bottlenose dolphins (Tursiops truncatus) and 4 of striped dolphins (Stenella coeruleoalba) (Fig. 3). 100 bottlenose dolphins were photo-identified in total: 40 in zone B and 60 in zone C. Photo analysis showed only 2 animals shared between B and C. In B 42 animals were estimated with Schnabel method and 43 with Schumacher-Eschmeyer method. In C 118 animals were estimated with Schnabel method and 144 with Schumacher-Eschmeyer method.

Discussion and Conclusion
According to the sighting points, the bottlenose dolphin habitat seems to be confined within the 100m isobath (but this may be partially overestimated by an unbalanced research effort). The pleasure boating activity is confined within 3 nm from the coast line. This produces a complete overlapping with the bottlenose dolphin habitat in zone A and B, where the 100m isobath runs close to the coast line and only a partial overlapping in C, where the 100m isobath runs more out to sea (Fig. 3). The home range analysis through the Minimum Convex Polygons3 (MCP) seems to identify two different home ranges for the dolphins sighted in zone B and C (Fig. 4). The dolphins living in zone B show a good level of residence. Also the abundance estimate gives very different results for the two zones (Fig. 5, 6).

References

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