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PUBLIC SIGHTING SCHEME REVEALS
THE SEASONAL PRESENCE OF *CETORHINUS MAXIMUS*
AROUND NORTH SARDINIA, ITALY

*UN PROGETTO DI AVVISTAMENTO PUBBLICO
RIVELA LA PRESENZA DI CETORHINUS MAXIMUS
NELLE ACQUE DELLA SARDEGNA SETTENTRIONALE*

Abstract – This study aims to contribute data on the presence, distribution and seasonal changes in numbers of basking sharks *Cetorhinus maximus* (*Chondrichthyes*) around North Sardinia (Central Mediterranean sea). Thanks mainly to a public sighting record scheme begun in 2005, 55 records of 99 basking sharks were collected in an area where only 14 individuals had previously been recorded. This ongoing public sighting scheme has significantly improved scientific understanding as well as public awareness of this species.

Key-words: Basking shark, *Cetorhinus maximus*, Mediterranean, Sardinia, Marine Protected Area.

Introduction - The basking shark (*Cetorhinus maximus* Gunnerus, 1765) is a very large, filter-feeding cold-water pelagic species named from its habit of ‘basking’ on the surface in good weather conditions, usually singly or in small groups. It is a migratory and widely distributed species, but only regularly seen in a few favored coastal locations. Much of the basking shark’s life history, movements, population dynamics and general ecology have not yet been described.

Up to 2002 only 14 out of 535 basking sharks recorded in the MEDLEM program on captures and sightings of large cartilaginous fishes, which provides a general picture of the distribution of this species in the Mediterranean, were from Sardinian waters (Mancusi *et al.*, 2005). In 2005 *Operazione Squalo Elefante* (OSE) was launched to gather general data on basking sharks in Sardinian waters, to identify particular areas for future investigations and to raise public awareness of the species, mainly through a public sighting recording scheme. Such schemes have been successfully used to gather simple, non-effort related data on basking sharks in several regions of the world (Speedie, 2003; Clò *et al.*, 2002).

Materials and methods – *Data Collection.* In 2005 a network of observers was established - that included the Coast Guard, personnel of Marine Protected Areas (Asinara, La Maddalena, Tavolara), biologists, recreational and professional fishermen, dive centre operators, yachtsmen and journalists - to report sightings and captures of basking sharks.

In order to avoid overestimating shark numbers, in case of multiple sightings over a period up to 10 days in the same area we considered only one entry – selecting the one with the highest number of sharks seen at the same time. Pictures and video were also collected when available. Furthermore, a review of scientific and reliable grey literature yielded several entries dating from 1910.

Results – Only 55 of the 75 overall sightings and captures reported were considered, yielding a total of 99 basking sharks (73 sighted, 26 captured) mainly from North Sardinia. Size ranged from 240 cm to 800 cm. Aggregations of up to 11 individuals were recorded. Sightings peaked between January and March. Three

'hotspots' emerge: most sightings fall within the Pelagos Sanctuary and/or three marine protected areas: Asinara, la Maddalena, Tavolara (Fig. 1).

On the basis of these sightings, dedicated searches by aircraft and boat were conducted, which resulted in the tagging of one individual with NMFS tags; a photo-ID project was started and tissue samples were also collected from dead animals for further DNA analysis. All sightings were shared with MedLem.

Conclusions – These reports suggest that basking sharks are regular seasonal visitors in coastal waters of North Sardinia. The sharp increase in numbers since the public sighting scheme was launched in 2005 – from 20 between 1910-2004 to 79 between 2005-2010 – is most likely due to greater public awareness rather than a growth in population of this shark, which is listed by IUCN as Endangered in the Mediterranean.

These reports are of a casual nature and have a more limited value than sightings reported from properly structured effort-related surveys. However they can provide at a low cost general information on the distribution and relative abundance of this species.

The enthusiastic participation of members of the public in *Operazione Squalo Elefante* has not only significantly increased our current knowledge on the presence of the basking shark in Italian waters, but it generated considerable public awareness. Such sighting schemes should therefore be encouraged in other potential basking shark hotspots.

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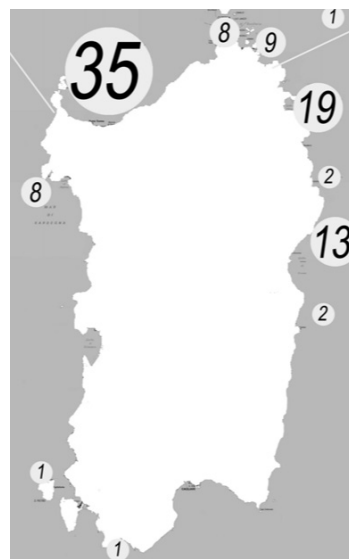


Fig. 1 - Sightings-captures.

Siti di avvistamenti e catture.