

SHORT-BEAKED COMMON DOLPHINS AROUND THE ISLAND OF ISCHIA, ITALY (SOUTHERN TYRRHENIAN SEA)

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Abstract:

The short-beaked common dolphin (*Delphinus delphis*) - once one of the commonest cetacean species in the Mediterranean Sea - has faced a dramatic decrease in the last few decades. Between July-September 1997-2001, relatively large groups (mean group size = 65.48 SD=23.94, N=41, range 35-100) were consistently encountered off the island of Ischia, Italy. Observations, totalling 79 h 45 min, were carried out from a 18 m sailing vessel. Most of the survey effort was concentrated north of the island, within 11 km from the coast, during 256 daily surveys covering nearly 8,500 km. The animals were always sighted over the submarine canyon of Cuma, a highly productive marine area characterised by high pelagic biodiversity and multi-species associations. The area represents an important feeding site for other cetacean species, including *Stenella coeruleoalba*, *Grampus griseus* and *Balaenoptera physalus*. A total of 46 individuals could be opportunistically photo-identified based on natural marks on their dorsal fins. Of these, 19 individuals were re-sighted in different years, suggesting high levels of site fidelity. Breeding activities were often observed, and a high percentage of calves were always present in one or more of the group sub-units. Surface feeding was recorded frequently, and apparently focused on the skipper (*Scomberesox saurus*), a seasonal fish that is highly valued on local markets. Local fishermen claim that co-operative fishing may occur in the area, with fishermen taking advantage of fish aggregations that are actively schooled by short-beaked common dolphins near the surface. In the past, fish rewards were offered to the dolphins in reciprocation. Based on interviews conducted locally, the skipper fishery fleet has decreased by one order of magnitude due to declined fish stocks. The creation of a marine protected area has been proposed, which might provide research and conservation benefits in the future.

INTRODUCTION: Short-beaked common dolphins in the Mediterranean have undergone a dramatic decline in abundance during the last few decades, and have almost completely disappeared from large portions of their former range. This study provides information about a relic population unit in the central Mediterranean.

METHODS: Observations, totalling 79h 45min, were carried out between July-September from a 18m sailing vessel. Most of the survey effort was concentrated north of the island of Ischia, within 11km from the coast, during 256 daily surveys covering nearly 8,500km.

RESULTS: A total of 51 short-beaked common dolphin sightings were between 1997-2001 (Fig. 1). Group size data presented here are based on a sub-sample of 41 sightings, for which best group size estimates were available. *Delphinus* groups were relatively large (mean=65.5 SD=23.94, N=41, range 35-100 individuals). In 18% (N=41) of the sightings, short-beaked common dolphins were in mixed groups with striped dolphins (*Stenella coeruleoalba*).

The animals were mostly sighted over the submarine canyon of Cuma, a highly productive marine area characterised by high pelagic biodiversity and multi-species associations. The area represents an important feeding site for other cetacean species, including striped dolphins, Risso's dolphins (*Grampus griseus*), and fin whales (*Balaenoptera physalus*; Mussi *et al.* 2001).

A total of 46 individuals could be photo-identified based on long-term natural marks on their dorsal fins (both nicks on the dorsal fin's trailing edge and fin pigmentation pattern where considered). Of these, 19 individuals were re-sighted in different years, suggesting high levels of site fidelity.

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Local fishermen claim that co-operative fishing may occur in the area, with fishermen taking advantage of fish aggregations that are actively schooled by short-beaked common dolphins near the surface. In the past, fish rewards were offered to the dolphins in reciprocation. Based on interviews conducted locally, the skipper fishery fleet has decreased by one order of magnitude in the last two decades due to declined fish stocks.

DISCUSSION: Observations took place in the busy summer seasons, when pleasure boats and ferries crowd these waters. Commercial and passenger traffic in the Gulf of Naples and nearby islands (Ischia, Procida and Vivara) reportedly exceeds 200,000 trips/year, and up to 2,000 pleasure boats may be moored during the summer in the ports of Ischia.

Ship collisions in the area have been documented for cetacean species including striped dolphins, common bottlenose dolphins (*Tursiops truncatus*) and fin whales, while a dramatic harassment event on Risso's dolphins has been reported by Miragliuolo *et al.* (2001). Despite the relatively high abundance of vulnerable cetacean population units, the waters around Ischia are commonly used for extemporaneous offshore races, implementation of coastal speed limits being virtually null.

Another potential threat to short-beaked common dolphins and other cetaceans in the area is represented by the illegal driftnet fishery, sadly known for the heavy toll paid by Mediterranean cetaceans (Di Natale and Notarbartolo di Sciara 1994, IWC 1994, Silvani *et al.* 1999). This fishery is reportedly impacting local cetacean communities, with documented bycatch events involving striped dolphins, common bottlenose dolphins, sperm whales (*Physeter macrocephalus*) and fin whales.

The creation of a marine protected area has been proposed, with the intent of supporting conservation actions and ultimately protect the local cetacean fauna against threats posed by human activities.

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