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COMPARING THE EPIPELAGIC DIET BETWEEN SHORT-BEAKED COMMON DOLPHIN AND ATLANTIC SPOTTED DOLPHIN IN TWO ATLANTIC OCEANIC ARCHIPELAGOS



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Introduction

The short-beaked common dolphin, *Delphinus delphis*, and the Atlantic spotted dolphin, *Stenella frontalis* (Fig.1), are two of the most abundant cetaceans species in the archipelagos of the Azores and Madeira (Fig. 2) (1, 2). The two species seem to present some spatio-temporal segregation. In the Azores, *D. delphis* is present all year, but less abundant during summer, the season when *S. frontalis* presents its higher abundance. In Madeira, the period of higher occurrence of *D. delphis* is winter and spring, while *S. frontalis* is present mostly during summer and autumn. In both archipelagos, *D. delphis* is more frequently sighted near the coast, while *S. frontalis* is usually seen more offshore (1, 2). As the two species presumably have comparable diets, consisting essentially of small mesopelagic fishes and squids (3, 4), this spatio-temporal exclusion could be the result of trophic competition. To investigate this hypothesis, we studied the diet of short-beaked common dolphin and Atlantic spotted dolphin by direct observations of feeding events in the two archipelagos.



Fig.1 Short-beaked common dolphin (above) and Atlantic spotted dolphin (below)

Methods

- Visual observations with photo and video records
- Collection of prey specimens

Diurnal surface feeding events (Fig. 3)

Study area

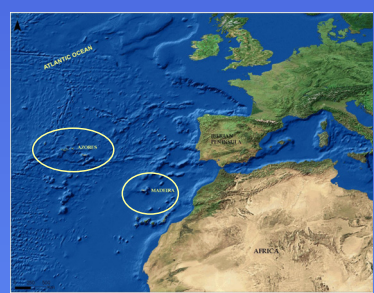


Fig2. The Azores and Madeira archipelagos



Fig.3 Short-beaked common dolphin (left) and Atlantic spotted dolphin (right) feeding on blue jack mackerel

Results and discussion

From a total of 39 feeding events, five fish prey species could be identified, four at the species level and one at the genus level. For both dolphin species, blue jack mackerel (*Trachurus picturatus*) was the most observed prey (15 feeding events for *D. delphis* and 12 for *S. frontalis*), followed by chub mackerel (*Scomber japonicus*; 4 and 5 feeding events, respectively). European pilchard (*Sardina pilchardus*), Atlantic mackerel (*Scomber scombrus*) and sardine (*Sardinella sp.*) were recorded only once each, the former for *D. delphis* and the latter for *S. frontalis* (Figs. 4, 5).

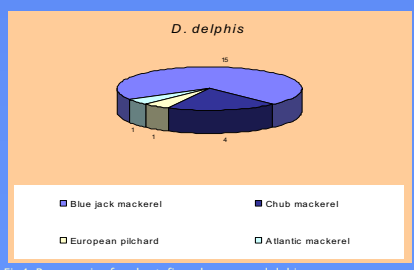


Fig4. Prey species for short-finned common dolphin

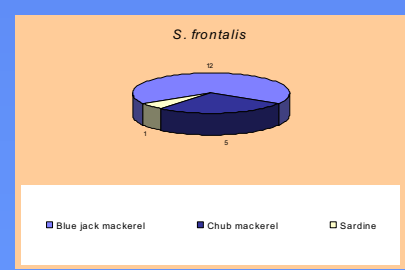


Fig5. Prey species for Atlantic spotted dolphin

Most information available on *D. delphis* and *S. frontalis* diets came from neritic areas and little is known of their feeding habits in oceanic habitats, like Azores and Madeira. Although the number of feeding events observed during this study was small and observations were restricted to diurnal surface feeding, it seems that there is an overlap between the diets of both dolphins species in these archipelagos. As *D. delphis* and *S. frontalis* are usually characterized as opportunistic feeders (3, 4) and are likely to compete for food in areas where they co-occur, we suggest that spatio-temporal segregation exist to avoid trophic competition. Other methodologies, like fatty acids composition and stables isotopes, are being used by the authors for further study of the ecologic implications of both species diets.

References:
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